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Abs 01

Knowledge, Attitude and Practice towards Blood Donation and Associated Factors among Adults in Debre Markos Town, Northwest Ethiopia

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Background: Even if the demand for blood supply accelerating in Ethiopia, evidences indicates that severe shortage of blood supplies hitting the vast majority of population. Thus, identifying motivational factors affecting blood donation and recruitment of safe and low risk donors is necessary. Therefore, this study aimed at assessing knowledge, attitude and practice of blood donation and its associated factors.

Methods: Community based cross-sectional study was conducted in Debre Markos Town from February to April 2015. Multistage sampling technique with single population proportion formula was employed to get the total sample size of 845. Interviewer administered questionnaire employed for the data collection. Binary logistic regression was fitted to assess the relationship between outcome variables and explanatory variables.

Results: In this study, 436 (56.5%), 403 (52.2%) and 124 (16.1%) of respondents were found to be knowledgeable, had favorable attitude and reported the practice of blood donation. Younger age, male sex, having formal education and radio listener were independent predictors of knowledge. Being at high school and above level, having good income, listening radio and being knowledgeable were significantly associated with favorable attitude. The prevalence of practice of blood donation was higher in older age groups, those with certificate and above in educational status, knowledgeable and favorable attitude groups.

Conclusion: In this study, the level of knowledge, attitude and practice about blood donation was found to be low. There is a need of an intervention on the independent predictors. Regular blood donation campaigns should be organized at the community level to encourage those who have not time and didn't get opportunity to donate blood.

Key terms: Blood donation, Knowledge, Attitude, Practice

Assessment of Breast Self-examination Practice and Associated Factors among Women Attending Health Centers in Addis Ababa, Ethiopia, 2015.

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Background: In resource scarce countries like Ethiopia, Breast self-examination is promoted for early detection of breast cancer to prevent related morbidities and mortalities.

Objective: To assess the magnitude of Breast Self-Examination practice and associated factors among women attending the selected public health centers in Addis Ababa, Ethiopia, 2015.

Methods: A health facility based cross-sectional study was conducted from March-April/2015 among women between 20 up to 70 years attended in selected public health centers in Addis Ababa, Ethiopia, 2015. Health centers were selected by simple random sampling technique and the study participants were selected using Systematic Random Sampling Technique. Data were collected by using a structured and pretested questionnaire. Data transferred from the Epi info database to SPSS database using stat transfer for analysis. Logistic regression analysis was fitted and odds ratios with 95% Confidence intervals and p-values were computed to identify factors associated with the practice of Breast self-examination.

Result: There were 406 respondents, which gives a 96% response rate from the expected 422. From the 14 question designed to assess BSE knowledge of the respondents 88(21.7%) scores the median seven and above. Below one fourth 46(11.3%) of the respondents were ever practiced BSE, from that only 24(6%) regularly practiced. The most common reason for not practicing BSE, they didn't know how doing it 224 (55.2%). Women who have knowledge of BSE two times more likely practice BSE (Knowledgeable for BSE AOR 2.227 [1.135 – 4.3]) and also women who have confidence to do BSE six times more likely practice BSE (Have perceived confidence AOR 5.645[2.493 – 12.7]). Therefore, the two variables were that statically significant association with the practice of BSE.

Conclusion: This study revealed a low level of ever practice BSE and from that few of them regularly practice Breast self-examine in Addis Ababa, Ethiopia. Thus warrant to the concerned bodies for creation of breast cancer awareness campaigns and screening programs at all levels of the health sector to promote early detection and diagnosis in the prevention of breast cancer in women in Ethiopia.

Keywords: Breast self-examination

Abs 03

Willingness to Receive Text Message Medication Reminders among Patients on Antiretroviral Treatment in North West Ethiopia: A Cross-sectional Study. *Mihiretu M. Kebede,* **BSc,** *MPH-HI, Advanced Diploma, University of Gondar; Atinkut Alamirrew, MSc; Mulusew Andualem, MSc.*

Background: Non-adherence to Antiretroviral Treatment (ART) is strongly associated with virologic rebound and drug resistance. Studies have shown that the most frequently mentioned reason for missing ART doses is the forgetfulness of patients to take their medications on time. Therefore using communication devices as reminder tools, for example alarms, pagers, text messages and telephone calls could improve adherence to ART. The aim of this study is to measure access to cellphones, willingness to receive text message medication reminders and to identify associated factors of ART patients at the University of Gondar Hospital, in North West Ethiopia.

Methods: An institution based cross sectional quantitative study was conducted among 423 patients on ART during April 2014. Data were collected using structured interviewer-administered questionnaires. Data entry and analysis were done using Epi-Info version 7 and SPSS version 20 respectively. Descriptive statistics and multivariable logistic regression analysis were used to describe the characteristic of the sample and identify factors associated with the willingness to receive text message medication reminders.

Results: A total of 415 (98% response rate) respondents participated in the interview. The majority of respondents 316 (76.1%) owned a cellphone, and 161(50.9%) were willing to receive text message medication reminders. Positively associated factors to the willingness were the following: Younger age group (AOR = 5.18, 95% CI: [1.69, 15.94]), having secondary or higher education (AOR = 4.61, 95% CI: [1.33, 16.01]), using internet (AOR = 3.94, 95% CI: [1.67, 9.31]), not disclosing HIV status to anyone other than HCP (Health Care Provider) (AOR = 3.03, 95% CI: [1.20, 7.61]), availability of radio in dwelling (AOR = 2.74 95% CI: [1.27, 5.88]), not answering unknown calls (AOR = 2.67, 95% CI: [1.34, 5.32]), use of cellphone alarm as medication reminder (AOR = 2.22, 95%CI [1.09, 4.52]), and forgetting to take medications (AOR = 2.13, 95% CI: [1.14, 3.96]).

Conclusions: A high proportion of respondents have a cell phone and are willing to use it as medication reminders. Age, educational status and using internet were the main factors that are significantly associated with the willingness of patients to receive text message medication reminders.

Abs 04

Factors Associated with Loss to Follow-Up among Women in Option B+ PMTCT Programme in Northeast Ethiopia: A Retrospective Cohort Study.

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Introduction: Ethiopia has recently adopted lifelong antiretroviral therapy (ART) for all HIV infected pregnant and breastfeeding women (Option B+ strategy), regardless of CD4 count and/or clinical stages. However, the exact timing and predictors of loss to follow-up (LTF) is unknown. Thus, we examined the levels and determinants of LTF under Option B+ among pregnant and breastfeeding women initiated on a lifelong ART for PMTCT in Ethiopia.

Methods: We conducted a retrospective cohort study among 346 pregnant and breastfeeding women who started ART at 14 public health facilities in northeast Ethiopia from March 2013 to April 2015. We defined LTF as 90 days since the last clinic visit among those not known to have died/transferred out. We used Kaplan-Meier and Cox proportional hazards regression to estimate cumulative LTF and identify the predictors of LTF respectively.

Results: Of 346 women included, 88.4% were pregnant, and the median follow up was 13.7 months. Overall, 57 (16.5%) women were LTF. The cumulative proportions of LTF at 6, 12 and 24 months were 11.9, 15.7, and 22.6%, respectively. The risk of LTF was higher in younger women (adjusted hazard ratio $[aHR]_{18\text{-}24yeasr/30\text{-}40\ years}$: 2.3; 95%CI: 1.2-4.5), in those attending hospitals compared to those attending health centers (aHR:1.8; 95%CI: 1.1-3.2), in patients starting ART on the same day of diagnosis (aHR:1.85; 95% CI: 1.1-3.2) and missing CD4 cell counts at ART initiation (aHR:2.3; 95% CI: 1.2-4.4).

Conclusions: The level of LTF we found in this study is comparable with previous findings from other resource-limited settings. However, high early LTF shortly after ART initiation is still a major problem. LTF was high among younger women, those initiating ART on the day of HIV diagnosis, those missing baseline CD4 count, and those attending hospitals. Thus, targeted HIV care and treatment programs for these patients should be part of future interventions to improve retention in care under option B+ PMTCT programme.

Abs 05

Assessment of Storage and Utilization of printed Information, Education and communication (IEC) Materials, and Associated Factor in Health facilities of Bench Maji Zone, South West Ethiopia. *Fira Abamecha, MPH, Jimma University; Yayehirad Alemu, MPH, University of Gondar.*

Background: About 80% of the health problems in developing countries could be alleviated by health education and promotion activities that primarily rely on a variety of well-designed and effective printed Information, Education and communication (IEC) materials. The skill for proper storage and utilization of these materials by health professionals matters to the success of health promotion programs. The aim of the present study was to assess Storage and utilization of printed Information, Education and Communication materials, and associated factor in health facilities of Bench Maji Zone.

Methods: An institution based cross sectional quantitative study design supplemented by qualitative data was conducted from February 3-25/2015 in government health facilities of Bench Maji Zone. Samples of 274 health professionals recruited from 11 heath centers were included in the study. Data were collected using structured questionnaires on self-administered basis. Observation checklist and in-depth interview were used to collect qualitative data. Using odds ratio (OR) with 95 % limit of confidence interval, the association of dependent and independent variables was assessed. Multiple Logistic regression analysis was done using SPSS version 20 statistical packages to identify potential predictor variables.

Results: Two hundred forty four health workers have participated in the study producing a response rate of 90.7%. One hundred seventy four (71.3%) of them reported that they had ever used printed Information, Education and communication materials for patient education. There was no planned and continuous supply of the IEC materials in the Zone. It was identified that there was an absolute lack of stored IEC materials in some health centers and supplied haphazardly by health departments for few them. Even, the existing materials-posters were displayed at inappropriate places (i.e. within the health centers in which only clients are exposed -*"preaching the converted"*) and misuse was consistently seen across health centers. Posters left displayed for long period of time were shred apart and destroyed by sunlight and humidity in the study area. On multiple logistic regression, having training related to health communication, AOR=2.73 and 95% CI= [1.87, 4.43], perceived appropriateness of IEC materials, AOR=4.85 and 95% CI= [2.43, 9.65] and work experience, AOR=0.39 and 95% CI= [0.17, 0.92] were found significant predictors of the utilization of IEC materials by health professionals.

Conclusion: There were no adequate printed IEC materials available during the survey and poor utilization or misuse of the existing materials was also reported. In-service training and perceived appropriateness of IEC materials were important factors affecting the utilization of IEC materials by health professionals. The regional health bureau should proactively design and

produce culture sensitive printed IEC materials by involving stakeholders in the development process

Predictors of Compliance with Community-Directed Treatment with Ivermectin for Onchocerciasis Control in Kabo Area, Southwest Ethiopia.

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Background: Compliance with annual ivermectin treatment is a major challenge in community-directed treatment with ivermectin (CDTI) implementation. There are individuals who do not comply with the annual mass treatment, which contributes to the continuity for disease transmission. Hence, ensuring high treatment coverage and sustained compliance should be given due emphasis in the control of onchocerciasis. The aim of this study was to determine CDTI compliance rate and predictors of compliance where the CDTI was in its 9th round in Kabo area, southwestern Ethiopia.

Methods: Community-based cross-sectional study was conducted in Kabo area, three weeks after the 9th round of annual ivermectin distribution. Systematic random sampling was used to select head of households and structured, pre-tested questionnaire was used to interview the study participants. Data was analyzed using SPSS version 16. Descriptive statistics was used to compute mean and standard deviation of continuous variables and frequency for categorical variables, while bivariate and multivariate logistic regressions were used to assess the effects of independent variables on the outcome variable. Variables which showed association in multivariate analysis were considered as final predictors of compliance and strength of association was measured through adjusted odds ratio (AOR).

Results: A total of 308 respondents (age range 18-70, mean age ± SD, 32.21 ± 9.64) participated in the study. Of these, 249 (80.8%) reported that they took ivermectin during the 9th round annual treatment. Significantly higher rate of treatment compliance was reported by participants age =35 years (AOR = 5.48, 95% CI; 1.97 - 15.23), participants who stayed in the area for more than ten years (AOR = 3.86, 95% CI; 1.83- 8.11), participants who perceive that they are at risk of contracting the disease(AOR = 7.05, 2.70- 18.43), participants who perceive community drug distributors (CDDs) are doing their work well (AOR = 2.35 95% CI; 1.15- 4.83) and participants who know at least one CDD in their village
(AOR = 2.83, 95% CI; 1.26- 6.40).

Conclusion: The majority of the study participants in the present study area complied with ivermectin treatment. Nevertheless, intervention packages should consider factors such as age, residence duration and community's perception of the disease to improve compliance and make drug distribution sustainable.

Keywords: Onchocerciasis, Ivermectin, Treatment, Compliance, Ethiopia

Assessment of Health Risk Protection Behaviors among Solid Waste Collectors in Addis Ababa, Ethiopia.

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Introduction: Solid waste collection is a daily task all over the world with significant variation in its amount and type. Waste is automatically regarded as the harbinger of disease and the bringer of illness. Ethiopia as one of the developing countries, municipal solid waste is collected manually and lifting, carrying, pulling, pushing, and loading it is a common task.

Objective: This study aimed at assessing health risk protection behaviors among solid waste collectors in Addis Ababa city.

Method: A cross sectional survey complemented by qualitative key in-depth interview was carried out among solid waste collectors working as home to home waste collection under small scale enterprise unions at Addis Ababa city administration. Sample populations were selected using multi stage sampling technique. A total of 654 solid waste collectors lower administrative unit solid waste management heads and supervisors were interviewed from January to March, 2015. Data was entered into a computer by using Epi-Info version 3.5.1and analyzed using SPSS version 20 for windows. Frequencies, means, tables and graphs were used to present data. Logistic regression analysis was used in order to identify the association between predictor variables and dependent variable and to control confounders. Thematic analysis using open code software was used for qualitative data analysis.

Result: The median age of the study subjects was 29 ranging from 18 to 68 years. Above half of solid waste collectors had low level of knowledge (52%) in term of alertness, positive attitude (53.7%) about health risk protection and inappropriate practice (55.5%) on prevention of infections, injury and disability. Training on occupational health safety were associated significantly with both frequently hand wash and wearing PPE during duty (AOR=2.41; 95% CI, 1.47-3.96 and AOR=1.77; 95% CI, 1.21-2.61) respectively. Lack of concern, addiction, carelessness, lack of personal protective equipment supply and nature of job were reasons mentioned for solid waste collectors' health risk practice.

Conclusion and Recommendation: Health risk protection behavior among solid waste collectors in Addis Ababa city was inappropriate. Solid waste collectors should be packaged in health related programs to enhance their health care information and health service utilization. Training solid waste collectors about safety and provision of standardized personal protective equipment are highly recommended.

Keywords: Health Risk, Risk Protection Behavior, Solid Waste Collectors, Addis Ababa

Health-Seeking Behavior and Associated Factors in Hosanna, Southern Ethiopia: Community Based Cross-Sectional Study.

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Background: Despite improved expenditure on accessing physical facilities and health workers in the last decades, Ethiopia still affected by higher disease burden (73.6%), which exceeds the African average 71.1%. Recent evidences demonstrate that 350 people die prematurely from all causes per year Per 1000 population in Ethiopia and service utilization was also found to be lower that, only 10% of populations utilize health services in Ethiopia. Health-seeking behavior of the community, which is an important element for proper utilization of health services in order to eliminate preventable death is unrecognized and under researched in the study area.

Objective: To assess health-seeking behavior and associated factors in Hosanna, Southern Ethiopia, 2014

Methods: Community based cross-sectional study design was used among statistically determined and randomly selected 424 households in Hosanna town. Pretested and structured questionnaire of Amharic version used for data collection. Health-seeking behavior conceptualized as sequence of actions taken to promote health and prevent disease. Subjects score above the mean were operationally defined as having good health –seeking behavior and otherwise poor. Summary measures, mean, and percent used to describe data. Logistic regression model fit to identify associated factors. The 95% CI and P value 0.05 set for significance.   Epi data version 3.1 and STATA version 12.0 statistical software's were used for data processing and analysis.

Result: Total of 424 house hold heads was interviewed and data of all was valid and included in analysis. The mean age was 33.8 ± 11.4 (SD). Majority of participants 262(61.8%), 218(51.3%), were married and male respectively. Large portion of respondents 379(93.6%) took action when got ill. Only few participants 78(18.4%) and 72 (17.0%) took leisure activities known to maintain and protect health and screened for health status respectively. Analysis findings reveal only 61 (14.6%) participants have good health-seeking behaviors. Association test results show sex, religion, and highest level of education in family associated with health-seeking behavior [P<0.05].

Conclusion: Health-seeking behavior was poor in our study. Taking health oriented leisure activities and screening for general health which are the two major components in the definition of health-seeking behavior remained underestimated in our sample.

Voluntary HIV Counseling and Testing Service Utilization among Pregnant Women in Northwest Ethiopia in 2014.

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Introduction: According to 2011 Ethiopian demographic health survey, in regional state of study area about 2.2% women were HIV (Human Immunodeficiency Virus) positive. HIV testing during pregnancy is the gateway for accessing care for the mother and the child though its coverage was 72.0% to 82.5% in northwest Ethiopia according to two institution based studies. Hence the current study would assess the coverage of VHCT (voluntary HIV counseling and testing) and its determinants using community based study since only 34% pregnants accessed antenatal care in our country.

Methods: A community based cross sectional study by employing a quantitative research method was conducted in Enemay woreda. Data was collected on systematically selected 386 pregnant women. A pre tested structured questionnaire was used for data collection. Binary logistic regression was used for calculating Odds ratio in bivariate and multivariate analysis.

Result: Majority (81.6%) participants know transmission of HIV/AIDS during pregnancy thought only about three quarter (76.2%) tested for HVI/AIDS in the current pregnancy. The repeatedly cited reason for not up taking HIV testing service was fear of stigma and discrimination if test result becomes positive. Age group, years of being together, believing importance of testing, bringing partner for testing, result disclosure and intension to utilize ARV (antiretroviral) prophylaxisis were strongly associated with voluntary counseling and testing of HIV service utilization.

Conclusion and Recommendation: VHCT service utilization during pregnancy is low thus Organizations working on it should further enhance awareness creation by giving especial attention for pregnant mothers not knowledgeable about MTCT of HIV/AIDS; have not intension for ARV prophylaxisis, believing of VHCT importance before marriage only and inability of bringing partner for test.

Keywords: HIV/AIDS, VCT of HIV/AIDS, MTCT of HIV/AIDS, PMTCT of HIV/AIDS, Ethiopia.

The Relationship Between Infant and Young Child Feeding Practice Status and Associated Factors among Mothers of Under 24-Month-Old Children in Shashemene Woreda, Oromia Region, Ethiopia, 2014.

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Background: Infant and young child feeding is a cornerstone of care for childhood development. In Ethiopia, very large proportions of women do not practice optimal breastfeeding and complementary feeding for their children. Composite variables of infant and young child feeding index based on key indicators identified by WHO are not studied in Ethiopia; also there are no studies which document infant and young child feeding practices patterns and associated factors with inappropriate feeding practices in the study area.

Objective: To assess relationship between infant and young child feeding practices (IYCFPs) and associated factors in Shashemene Woreda, Oromia Region.

Methods: A community based cross sectional study was conducted from 01/04/2014 to 30/04/2014. A total of 423 mothers who had child less than two years were included in the study using simple random sampling technique. Data were collected using pre-tested semi structured interviewer administered questionnaire. Bi-variate and multivariate logistic regression models were used to identify factors associated with infant and young child feeding practices. Statistical significance was determined at p value level less than 0.05.

Results: Overall, the prevalence of inappropriate infant and young child feeding practice in study area was 67.9%. Being Government [AOR = 9.81 (1.90, 50.65)] and private [AOR = 7.66 (1.40, 41.94)] employee of husband, poorest socio-economic status [AOR = 1.39 (1.30, 6.48)], not attending ANC (AOR = 4.32 (2.27, 8.21)], child age 0 - 5 months [AOR = 16.01 (5.01, 50.03)], negative attitude of mothers [AOR = 2.50 (1.14, 5.47)] and number of children 3 - 4 [AOR = 5.37 (1.67, 7.42)] were independent predictors of inappropriate IYCFP status.

Conclusion: Inappropriate infant and young child feeding practice was prevalent in the study area. Interventional initiatives should focus on improving socio-economic status, and access to information, education and communication (IEC); also increasing ANC coverage for further improvement of IYCF is recommended.

Keywords: Infant and Young Child Feeding Practice

Magnitude and Factors Associated with Self-Medication Practices among University Students: The Case of Arsi University, College of Health Science, Asella, Ethiopia: Cross-Sectional Survey Based Study.

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Background: Self-medication is the selection and use of medicines by individuals to treat self-recognized illnesses or symptoms without any medical supervision. It resulted in wastage of resources, increases in resistance of pathogens, causes health hazards such as adverse drug reactions, prolonged suffering and drug dependence. Despite this fact, studies on the subject matter indicated that health science students continued to practice & recommend self-medication to society. Accordingly, the purpose of this study was to estimate the prevalence of self-medication among students of Arsi University College of Health Science and investigate factors associated with it.

Methods: A cross sectional quantitative study with three months illness recall was conducted in Arsi University College of Health Science students from January to February 2015. Data were collected randomly from each department using self-administered questionnaires. Data entry was made using Epi-Info version 3.5.2 & analysis was done using SPSS IBM version 20.

Results: From a total of 575 questionnaires distributed, 548 questionnaires with a response rate of 95.30% were collected back assessed as complete, 70.8% (388/575) reported at least one episode of an illness during three months prior to the day of the questionnaire, and 77.10% (299/388) of them reported practice self-medication during the study period. Students reported for the study period commonly perceived illnesses such as headache 169 (46.50%), gastrointestinal disease 102 (34.10%) and respiratory tract infection 95 (31.80%) accessed mainly antibiotics 179 (59.90%) and analgesics 143 (47.80%) mostly from drug retail outlets 184 (61.50%). The odds of being female university student was 2 fold accessed self-medication than their counter part males with Adjusted Odds Ratio (AOR) 1.84 with 95% Confidence Interval (CI) : 1.01 – 3.34, p=0.046. With regards to field of studies, students of midwifery were 3 folds accessed self-medication than their counter part students of medicine (AOR 2.78; 95%CI= 1.03, 7.39, p= 0.043). Those students who accepted self-medication for low income segment of the population 2 folds accessed self-medication than their counter part who disagree (AOR 1.76; 95%CI= 1.02, 3.06, p= 0.04). The major reasons indicated for self-medication by respondents were mildness of the illness 132 (44.1%) and saving time 111 (37.1%). Most respondents had a positive attitudes towards practicing self-medication as especially, they believed a prospective health professionals & low income segments of the populations have a right to practice self-medication (p<0.05).

Conclusions: Significant numbers of students were self-medicated in this study with antibiotics as major choice of drugs. Being female was significantly associated with self-medication. Conducting tailored behavioral change communication by the health authorities, universities and other stakeholders is recommended.

Keywords: Ethiopia, Health Science, Practice, Prevalence, Self-medication

Knowledge Attitude and Practice on Cervical Cancer and Screening among Reproductive Health Service Clients, Addis Ababa, Ethiopia, 2015.

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Background: worldwide there is an estimated 493,000 annual cases of cervical cancer and 273,500 annual deaths, women in developing countries account for about 85% of both its morbidity and mortality. To have early screening and early detection, having knowledge is important. Women with a better knowledge of cervical cancer were more likely to attend cervical cancer screenings. In Ethiopia practice of cervical cancer screening is below 1%.

Objectives: The objective of this study was to assess the knowledge, Attitude and Practice on cervical cancer and screening among reproductive health service clients at health centers in Addis Ababa.

Methodology: A facility based cross sectional study which contain quantitative and qualitative methods were conducted at 13 public health centers in Addis Ababa, from February to March 2015. Totally 520 samples were taken For Quantitative study and a multi-stage sampling technique was employed to address the study subjects. Four focused group discussions were conducted among the clients in the qualitative part. Quantitative Data was analyzed using descriptive statistics and logistic regression model was used to identify factors associated with the outcome variable and the result is presented using the OR with the corresponding 95% CI and taking p value of 0.05 as level of significance. The transcribed and translated qualitative data was coded using Open Code software. Then finally the codes were categorized and thematically described.

Result: Over all knowledge of cervical cancer was 43.8% and knowledge of cervical cancer screening were 27% and 56% of participants had positive attitude towards cervical cancer screening. And over all practice of cervical cancer screening was 3.5%. Being knowledgeable of cervical cancer (AOR=5.0,95% CI;2.7-3.0) and source of information from health professionals (AOR= 1.8, 95% CI (1-3.2)) were found to be statistically significant towards knowledge of cervical cancer screening and Knowing someone diagnosed with cervical cancer (AOR= 2.1, 95 CI (1.2-3.4)) and being knowledgeable of cervical cancer (AOR=3, 95%CI (1.8-5.3)) were statistically significant predictors for positive attitude towards cervical cancer screening. Women who know someone diagnosed with cervical cancer (AOR= 3.2, 95% CI; 1.0-10.0) and source of information

from health professionals (AOR =3.5, 95%CI; 1.2-10.2) were the significant determinants of cervical cancer screening practice.

Conclusion and Recommendation: More than half of the participants were not knowledgeable of cervical cancer and screening, however they had positive attitude. Cervical cancer screening practice was very low. Lack of knowledge, accessibility of services with affordable price and absence of gynecological signs were among common perceived barriers for not to undergo cervical cancer screening practices. Service should be available and accessible with reasonable price to the clients and health education and awareness creation regarding cervical cancer should be in place.

Abs 13

Assessment of Magnitude and Factors Affecting Intention of Women Living with HIV to Use Long Acting and Permanent Family Planning Methods in Addis Ababa City Government Public Hospitals, Addis Ababa, Ethiopia.

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Background: The use of long acting and permanent family planning methods is an important strategy for prevention of unwanted pregnancies among HIV-positive women who tend to have complicated and worse birth outcomes. However, there are no substantive data available on the magnitude and factors affecting the intention to use long acting and permanent family planning methods among HIV positive women in Addis Ababa (Ethiopia).

Objective: to assess the magnitude and factors affecting intention to use LAPMs by HIV positive women enrolled in the ART units.

Methods: The study was undertaken from July 2013 to August 2013 using quantitative study methods in the form of facility based cross sectional survey on a sample of 633 HIV positive women in the ART follow up units in Addis Ababa supplemented by qualitative in-depth interview. A systematic random sampling procedure was applied to select respondents of the study. A pretested structured questionnaire was used to collect data. Data were entered with Epi info, analyzed using SPSS version 20. Bivariable analysis and multivariable logistic regration was employed to see the crude and independent relationship between the independent variables and the outcome variable.

Results: The proportion of women with an intention to shift to LAPMs was 38.5%. General knowledge of respondents on LAPMs was 95%. Among LAPMs, IUD was known by 90% of participants Male sterilization was least known (7.7%). Nineteen percent of participants preferred to shift to implants in the future, vasectomy was preferred by very few of them (0.3%).The intention of HIV positive women to shift to LAPMs in the future was significantly associated with women's level of education AOR [1.59, 95 % CI: 1.07, 2.36], their level of knowledge on LAPMs [1.68, 95% CI: 1.09,2.60] and attitude of women towards LAPMs [1.66, 95% CI: 1.18-2.34], whereas, parity of women: one to two children [0.22, 95% :0.12,0.39] and 3-5children a woman had [0.12, 95% CI: 0.06,0.24] were less likely to be associated with intention of women to shift to LAPMs. Qualitative data revealed that most of participants did not want to shift to LAPMs mainly due to women's choices were dominated by partners, fear of side effects like: infection and excessive vaginal secretion, rumors in their neighborhood were also

mentioned. Some of the counselors claimed that there was lack of skilled personnel to provide LAPMs.

Conclusions and Recommendation: Women's education, knowledge on LAPMs, positive attitude towards LAPMs and total alive children a woman were found to be independent predictors of intention to shift to LAPMs. The high proportion of HIV positive women not to shift in these facilities was indicative of the need to work on the method shift. Half of women have negative attitude towards LAPMs. Investing on improving women's' knowledge and attitude towards LAPMs are very important. Besides, Information education communication and integrating the service of HIV with family planning should focus on alleviating factors hinder from intention to shift to LAPMs

Breast Self-examination: Knowledge, Attitude, and Practice among Female Health Science Students at Adama Science and Technology University, Ethiopia, 2014.

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Background: Breast cancer is the leading cause of cancer related deaths among women worldwide. Diagnosis of breast cancer at an earlier stage allows women more treatment choices and greater chance of long term survival. Breast self-examination once a month contributes to a woman's heightened awareness of what is normal for her. It is recommended that women over the age of 20 years perform monthly breast self-examination to detect new lumps and other changes in their breast. In view of the fact that mammography is not readily available in resource limited countries like Ethiopia, this study was designed to assess Knowledge, Attitude and Practice of regular Breast self-examination amongst female health science students of Arsi University in 2014.

Methodology and Materials: An institutional based cross- sectional study design was used. Data were collected using self-administered questionnaire for 368 randomly selected study subjects. The collected data were entered into Epi-info version 3.5.1. After cleaning the data it was exported to SPSS version 21 for further analysis. Bivariate and multivariate analyses were also performed with logistic regression to measure the association between dependent & independent variables.

Result: In this study, a total of 368 female students participated. Only 8.7% of them had good knowledge level.59.2% of the respondents have positive attitude towards breast self-examination. 60.6% of them have not ever done breast self-examination at all, while the rest (39.4%) have done before. From those who have done breast self-examination only 9.7% of them practiced monthly. Statistically significant association was obtained only with, level of education of the participant, father's educational level and program of enrollment.

Conclusion and Recommendation: Knowledge and Practice of breast self-examination was low, even though majority of them have positive attitude. The major barrier mentioned for not doing breast self- examination was thinking that they are healthy and not being informed. We would like to recommend the ministry of health to increase the level of awareness about breast self-examination through emergence of groups in the university, celebrating day's like breast cancer day.

Level of Knowledge and Practice of Tuberculosis Patients towards Multidrug Resistant Tuberculosis Prevention and Associated Factors at Public Private Mix Directly Observed Treatment Service Provider Facilities of Addis Ababa.

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Background: Multi drug resistant tuberculosis is an emerging public health crisis globally. Ethiopia is one of the 27 high drug resistant tuberculosis burden countries globally and stands third among African countries with annual estimates of 2,100 drug resistant tuberculosis cases among annually notified tuberculosis cases. Previous tuberculosis treatment exposure is the major risk factor of multidrug-resistant tuberculosis. Despite this fact, no study has been found that described the knowledge and practices of tuberculosis patients towards multidrug-resistant tuberculosis prevention in Ethiopia.

Objective: To assess the level of knowledge and practice of tuberculosis patients towards Multidrug Resistant Tuberculosis prevention and associated factors in Public Private Mix Directly Observed Treatment Service Provider Facilities of Addis Ababa.

Methods: A cross-sectional study was conducted 265 TB patients selected from PPM DOTS facilities in Addis Ababa using stratified sampling technique. Data were collected through Interviewer administered structured questionnaire. The collected data were analyzed using SPSS v 20. Logistic regression was fitted in order to identify factors associated with knowledge and practice of tuberculosis patients towards multidrug resistant tuberculosis prevention.

Result: Of a total, 175 (66%) and 135(50.9%) of respondents had poor knowledge about MDR TB prevention and unsatisfactory preventive practice towards multi drug resistant tuberculosis prevention, respectively. This study revealed that taking health counseling was significantly associated with knowledge about multi-drug resistant tuberculosis prevention (AOR = 5.43; 95% CI: 2.57, 11.46). Distance of Directly Observed Treatment Service provider facilities is significantly associated with multi-drug resistant tuberculosis prevention practice with (AOR = 2.06; 95% CI: 1.21, 3.50 P=0.008) is the second significantly associated factor with multi-drug resistant tuberculosis prevention practice with (AOR = 0.48; 95% CI: 0.29, 0.91 P=0.023).

Conclusion: Majority of participants were not knowledgeable about MDR TB prevention and the prevention practice of nearly half of participants is unsatisfactory. Taking health counseling was significantly associated with knowledge towards multi-drug resistant tuberculosis prevention. In addition, anti TB drugs' side effects and distance to take drugs were significant factors associated with practice towards multi-drug resistant tuberculosis prevention. Therefore, health care workers counseling, treating side effects of patients and expansion of DOTS service are highly recommended for the improvement of MDR TB prevention.

Keywords: Knowledge, Practices, Multi-drug resistant tuberculosis

Assessment of Knowledge, Attitude and Practice of Adult Women towards Breast Cancer Screening in Addis Ababa, Ethiopia; 2015.

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Background: Breast cancer has been a worldwide public health problem and it is the most common cancer in women both in the developed and less developed countries. Public and individual awareness can play a vital role in the prevention, early diagnosis and treatment of breast cancer.

Objective: To assess the knowledge, attitude and practice of adult women clients (20-49 years of age) towards breast cancer screening in health centers of Addis Ababa, 2015.

Methods: A cross-sectional facility based quantitative study complemented by qualitative (in-depth interview) study was conducted on a total of 633 women clients who came to selected health centers for maternal and child health services. Data was collected from January 1[st]to 30[th]February, 2015. For quantitative data Epi-Info version 7and SPSS Version 21 were used for data entry and analysis, respectively. Cross tabulation of each independent variable with the dependent variable with their 95% confidence interval was done to see if there was any association between them. Those variables associated at binary logistic regression with a significance level of 0.2 were entered into multiple logistic regression to identify determinants by controlling possible confounding effect. The transcribed and translated qualitative data were imported into an Open Code program and coded, categorized, thematically described and the emerged themes were included in the final thesis report.

Results: Overall 53% of women have heard about breast cancer and 35.5% knew at least one breast cancer screening method. While among women who were informed of breast cancer, 97% of theme indicated that screening improves chance of survival. Generally among the common screening methods; self-breast examination, clinical-breast examination and mammographic examination were practiced by 24.3%, 7.6% and 3.8% of respondents, respectively. Factors like family history of breast illnesses, income, educational status, general knowledge of breast cancer were highly associated with the knowledge, attitude and practices of breast cancer screening. Socio-cultural factors, lack of attention and patient load at health facilities were among the dominant factors raised by qualitative interviewee.

Conclusion and Recommendation: This study has revealed that self-reported breast cancer screening coverage is low. About two-third of studied women had no information of breast cancer screening methods. There is a need to design and implement awareness creation program on screening for breast cancer. Different print and mass media can be engaged in teaching women to undergo regular breast cancer screening for early identification and intervention.

Assessment of Knowledge and Practice of Menstrual Hygiene among High School Girls in Western Ethiopia.

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Background: The issue of menstrual hygiene is inadequately acknowledged and has not received proper attention. Use of sanitary pads and washing the genital area are essential practices to keep the menstrual hygiene. Unhygienic menstrual practices can affect the health of the girls and there is an increased vulnerability to reproductive tract infections and pelvic inflammatory diseases and other complications. Therefore, the objective of this study was to assess the knowledge and practice of menstrual hygiene among high school girls at Nekemte town, Oromia region, Western Ethiopia.

Method: A school based cross-sectional study design was employed in Nekemte Town, Western Ethiopia. A multistage sampling technique was used to select 828 female high school students. Data collection was carried out from May 04 to May 30, 2014 using a pre- tested structured questionnaire. The data were entered into a computer using Epi-info version 3.5.1 and then exported to SPSS for Windows version 20.0 for analysis. Bivariate and multivariate logistic regression analysis was done at 95 % confidence interval.

Results: In this study, 504 (60.9 %) and 330 (39.9 %) respondents had good knowledge and practice of menstrual hygiene respectively. The findings of the study showed a significant positive association between good knowledge of menstruation and educational status of mothers (AOR = 1.51, 95 % CI = 1.02–2.22), having radio/TV (AOR = 2.42, 95 % CI: 1.64–3.56). Educational status of the mother (AOR = 2.03, 95 % CI = 1.38–2.97) and earning permanent pocket money from parents (AOR = 2.73, 95 % CI = 1.76–4.26) revealed significant positive association with good practice of menstrual hygiene.

Conclusions: The findings showed that the knowledge and practice of menstrual hygiene is low. Awareness regarding the need for information about good menstrual practices is very important. So, health education program should be setup to create awareness and practice of good menstrual hygiene.

Keywords: Knowledge, Menstruation, Practice, Sanitary pads, Hygiene

Correlation of Fasting and Postprandial Plasma Glucose with Glycated Hemoglobin (HbA1c) in Assessing Glycemic Control; Systematic Review and Meta-Analysis.

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Background: Glycemic control in diabetes mellitus is a cornerstone in reducing morbidity and mortality of the disease. Achieving glycemic control or reducing hyperglycemia significantly decreases the microvascular and macrovascular complications of diabetes. Even though measurement of glycated hemoglobin (HbA1c) remains the gold standard for assessment of glycemic control, there is no consensus whether fasting or postprandial plasma glucose (PPG) is a better predictor of glycemic control in resource-poor settings when HbA1c is not available. The aim of this systematic review and meta-analysis was to summarize evidences on the significance of fasting and postprandial plasma glucose, and their correlation with HbA1c.

Methods: Relevant studies were identified through systematic search of online databases (e.g. EMBASE, MEDLINE/ PubMed and Cochrane library) and manual search of bibliographies of the included studies. Original research papers describing the correlations or associations of fasting and postprandial plasma glucose with HbA1c were included. The Med Calc software was used for data entry and analysis. We used the random effect model to estimate the pooled correlations of fasting and postprandial plasma glucose with HbA1c. Heterogeneity assessment and robustness analysis was also performed.

Result: From total 126 articles identified, 14 articles were eligible for systemic review. Eleven of these eligible studies evaluated the correlations of fasting and postprandial plasma glucose to the standard HbA1c values and used in meta-analysis. Seven of these studies (63.5 %) found better or stronger correlations between PPG and HbA1c than fasting plasma glucose (FPG). In all the studies that estimated the relative contribution FPG and PPG to the overall hyperglycemia, decreases in PPG was accounted for greater decrease in HbA1c compared with decreases in FPG value. PPG also showed a better sensitivity, specificity and positive predictive value than FPG. The pooled correlation coefficient (r) between PPG and HbA1c was 0.68 ($P < 0.001$, 95 % CI; 0.56–0.75) slightly higher than pooled correlation coefficient of FPG (r = 0.61($P < 0.001$, 95 % CI; 0.48–0.72)).

Conclusion: PPG has a closer association with HbA1c than FPG. Hence, PPG is better in predicting overall glycemic control in the absence of HbA1c.

Phenotypic and Genotypic Determination of Drug Susceptibility and Molecular Characterization of Mycobacterium Tuberculosis Isolates at Debre Berhan Referral Hospital, Ethiopia.

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Background: Globally, *Mycobacterium tuberculosis* is the leading cause of death from a single infectious disease. Tuberculosis is a major public health problem in Ethiopia, ranking 8th in the list of the world's 22 high burden countries for tuberculosis in 2012. Multidrug-resistant tuberculosis poses a formidable challenge to control tuberculosis due to its complex diagnostic and treatment challenges.

Objective: To investigate the molecular epidemiology of mycobacterial isolates at Debre Berhan Referral Hospital and to characterize their drug susceptibility pattern phenotypically and genotypically

Materials and Methods: Sputum samples were collected from smear positive pulmonary tuberculosis patients visiting DBRH from January 2013 to July 2013. The bacteria were isolated on Mycobacterium Growth Indicator Tube liquid media and drug susceptibility was determined phenotypically on this media and genotypically by MTBDRplus. Finally molecular characterization of the isolates was performed by deletion typing and spoligotyping.

Results: A total of 57 smear positive pulmonary tuberculosis patients were included, 46 were new cases. Out of 57 *Mycobacterium tuberculosis* isolates drug susceptibility was performed only for 45; of which, 14 were resistant to at least one of the four first line drug, isoniazid resistance was a predominant (14) followed by streptomycin (5) and ethanbutol (5). There were also 3 multi drug resistant cases; two of them were new cases. There was no any variable which had statistically significant association with resistance at least to one drug. *katG* gene, but not *inhA* gene, responsible for isoniazid resistance and *rpoB* gene was responsible for rifampicin resistance. There were 40 shared spoligotype and 17 orphan strains; Spoligo International Typing 53 and 149 were dominant strains. The predominant family was T1, which constituting of 21 followed by CAS (10); T3 family (9); LAM 9 (4); T1/H3 (4); family 36 (3); family T1/X1 (3); Beijing (1); family X2 (1) and family 34 (1).

Conclusion: Even though this study was conducted on small sample size, the reported rate of first line drug resistance and the existence of various strain type of *Mycobacterium tuberculosis* isolate is an indicator for the need of large scale study in the study area.

Keywords: Debre Berhan, drug susceptibility pattern, TB, MGIT, MTBDRplus

Assessment of Common Glucose-6-Phosphate Dehydrogenase (G6PD) Deficiency Allelic Types in Ethiopia.

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Building on the declining trend of malaria in Ethiopia, the Federal Ministry of Health aims to eliminate malaria from selected low transmission settings by 2020. As *Plasmodium falciparum* and *P.vivax* are co-endemic in Ethiopia, the use of primaquine is indicated for both transmission interruption and radical cure, respectively. However, the knowledge gap in the prevalence of G6PD deficiency and its associated distribution has been a limiting factor on the use of primaquine.

 About 12,000 dried blood spot (DBS) samples were collected in 2011 as part of the national Malaria Indicator Survey, a multi-stage nationally representative survey in all malaria endemic areas of Ethiopia. A randomly selected subset of the DBS was genotyped by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) technique. Considering the geographical position and ethnic mix of the country, three common G6PD variants: G6PD*A (A376G), G6PD*A- (G202A) and Mediterranean (C563T) were investigated.

Of the 2000 samples selected, 1585(79.2%) were available for genotyping, among which 54% were from females. G6PD*A (A376G, 8.08% was the only genotype detected with no samples positive for A- or Mediterranean variants. The result noted regional variations with the highest observed in Southern Nation and Nationalities Peoples' Region 13.08% and with none in Harari. The prevalence in other regional states were 6.98% in Amhara, 11.20% in Oromia, 13.72% in Tigray, 6.10% in Afar and Somali combined, and 5.50% in Gambella and Benishangul-Gumuz combined. Of this A mutation variant, 31% were hemizygous males, 62.1% and 6.8% were heterozygous and homozygous females respectively.

The results support the limited historical evidence of low G6PD deficiency prevalence in Ethiopia. The A376G (A) mutation observed is a mild deficiency causing around 90% of the normal enzymatic activity with little clinical significance. The more severe G6PD deficiency allelic types, G202A (A-) and C563T (Mediterranean), common in Africa were not observed, supporting the safe use of primaquine especially for transmission interruption of falciparum malaria in Ethiopia.

Lipid Profile Level Correlation with Anthropometric and Clinical Variables among Type 2 Diabetes Mellitus Patients at University of Gondar Hospital, Northwest Ethiopia.

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Background: Dyslipidemia is high in patients with diabetes mellitus. There is considerable evidence that abnormalities in lipid metabolism are important risk factors for increased incidence of coronary artery disease in type 2 diabetes patients. Therefore, the aim of this study was to assess the correlation between lipid profile with anthropometric and clinical variables in patients with type 2 diabetes mellitus.

Methodology: A comparative cross sectional study was conducted at University of Gondar Hospital chronic illness clinic from February to April, 2015. A total of 296 participants (148 case and 148 healthy controls) were selected using systematic random sampling technique. Data were collected using pretested structured questionnaire. Fasting venous blood sample was collected for blood sugar and lipid profile determination using Bio Systems A25 Chemistry Analyzer. Correlation, logistic regression, independent sample t-test and Man Whitney U test were used for analysis. P-value < 0.05 was considered as statistically significant.

Results: There was a statistically significant increase in mean total cholesterol (mg/dl) (205.4±50.9 vs 184.9±44.1), low density lipoprotein cholesterol (mg/dl) (113.1±43.2 vs 100.1±36.4) and triacylglycerol (mg/dl) (189.22± 100.9 vs 115.13±59.2) and significant decline in high density lipoprotein cholesterol (mg/dl) (56.5±20.4 vs 62.1±13) among diabetic patients as compared to healthy controls, respectively. Evident correlation has been observed between lipid profile with fasting blood sugar concentration and anthropometric measurements.

Conclusions: High serum lipid profile level was observed in type 2 diabetes mellitus patients. Therefore, patients should regularly check their serum lipid profile level to avoid subsequent coronary heart disease.

Dyslipidemia among Diabetic Patients in Southern Ethiopia: Cross-Sectional Study.

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Background: Diabetes mellitus (DM) is a common endocrine metabolic disorder and a leading cause of death worldwide. Dyslipidemia is a well-recognized manifestation of uncontrolled diabetes mellitus, because insulin has important regulatory effects on lipid metabolism. This study was conducted to determine the frequency and pattern of dyslipidaemia in diabetic patients.

Methods: Cross-sectional study was conducted on a total of 295 diabetic patients attending diabetic follow-up clinic of Hawassa University Referral Hospital from March to November, 2014. For each selected subject structured questionnaire about socio-demographic characteristics & diabetic related information was filled; overnight fasting blood samples were analyzed for FBS & lipid profiles *viz* TC, TG, HDL and LDL. Dyslipidemia assessed according to the United State National Cholesterol Education Program Adult Treatment Panel III (NCEP-ATP-III) model guideline. SPSS version 20 was used as tool for data analysis. *p*-value of < 0.05 was used as statistical significance.

Results: The mean ($\pm$SD) values of TC, TG, LDL, HDL were 186.03 ($\pm$37.40), 194.33($\pm$ 93.38), 49.66 ($\pm$10.34), 119.15 ($\pm$42.33) mg/dl, respectively. Among all of diabetic patients, 34.9% had high serum LDL, 34.6% had hypercholesterolemia, 29.8% had hypertriglyceridemia and 12.2% had low HDL. Significantly higher mean serum levels of TC ($p=0.002$) and LDL ($p=0.008$) were noted in type 2 DM than type 1 DM. Females had significantly higher TC and LDL levels than males; whereas males had significantly lower HDL levels as compared to females (48.04 $\pm$ 9.13 *vs* 51.93 $\pm$ 11.49mg/dl; $p<0.001$). The mean ($\pm$SD) FBS level was 178.18($\pm$85.39) mg/dl and patients with type 1 DM had significantly higher FBS than those with type 2 DM ($p<0.001$).

Conclusion: Our study showed the presence of dyslipidaemia in Ethiopians with diabetes mellitus. The most common dyslipidemia in this study was high level of serum LDL followed by hypercholesterolemia and hypertriglyceridemia. The optimal care for diabetic patients should also include routine monitoring of serum lipid profile.

Keywords: Diabetes, Lipid profile, Dyslipidemia.

Postoperative Wound Infection: Bacterial Etiologies and Their Susceptibility Patterns in Hiwot Fana Specialized University Hospital and Jugal, Hospital, Harar, Ethiopia.

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Background: Surgical wound infection is a common postoperative complication which causes significant morbidity and mortality, prolongs hospital stay, and adds between 10% and 20% to hospital costs. It remain a major cause of hospital-acquired infections and rates are increasing globally even in hospitals with most modern facilities and standard protocols of preoperative preparation and antibiotic prophylaxis. Moreover, in developing countries where resources are limited, even basic life-saving operations, such as appendectomies and cesarean sections, are associated with high infection rates and mortality.

Objective: The aim of this study was to isolate bacterial pathogens from patients with Postoperative wound infection and assess Antimicrobial resistance Patterns of the isolates in Hiwot Fana Specialized University Hospital and Jugula Hospital.

Methods: A cross- sectional study was conducted on 214 postoperative patients visited Hiwot fana specialized university hospital and Jugula hospital from February 20 to May 21, 2013. A structured questionnaire was used for collection of data on socio-demographic characteristics and associated risk factors. The clinical diagnosis was made by surgeons .Wound specimens were collected, processed and cultured using the standard bacteriological methods. Isolated organisms were tested for pattern of antimicrobial susceptibility using the standard disk diffusion method. The data were entered in to a computer using epi-data 3.1 and analyzed using SPSS Version-16 software.

Results: Two hundred fourteen patients admitted to surgical, gynecology and obstetrics ward were studied for prevalence of postoperative wound infections. The prevalence of aerobic bacteria was 11.7%, and majority of the isolates (60.5 %) were Gram-negative organisms. The most frequently isolated bacteria was *S. aureus accounted* for 11 (33.3%) followed by *Proteus* spp 8(24.2%) and *Klebsiella* spp 5 (15.2%). All bacterial isolates were resistant to at least one antibiotic, and 88% were multiple drugs resistant

Conclusion and Recommendation: The prevalence of postoperative wound infection at Hiwot fana specialized University Hospitals and Jugula hospital was 11.7%. Most of the isolates were gram negative bacteria showing high level of resistance to antimicrobial agents. Empirical treatment to nosocomial infections may not be effective. Therefore, treatment should be based on the result of culture and sensitivity.

Establishment of Reference Intervals of Thyroid Function Tests from Cord Blood of Neonates in Two Selected Hospitals, Addis Ababa, Ethiopia.

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Introduction: Reference intervals are ranges of upper and lower limits outside of which values would be considered abnormal. It depends on the type of instrument and reagents, the principle or method and the type of population being served. Therefore it is obvious that it should be established for every population in different regions even within a country.

Objective: The aim of this study is to establish population specific reference intervals of thyroid stimulating hormone, free thyroxine and free triidothyronine levels of cord blood.

Materials and Methods: A cross sectional study was conducted from July, 2013 to November, 2013 using cord blood sample from 123 new born infants of both sexes born at Tikur Anbessa Teaching Specialized Hospital and Gandhi Memorial Hospital. Thyroid stimulating hormone, free thyroxine and free triidothyronine were measured using Elecsys 2010 immunoassay analyzer at Ethiopian Health and Nutrition Research Institute. The non-parametric method of reference range determination was used.

Results: 123 Cord blood samples collected from umbilical cord of newborns were analyzed for thyroid stimulating hormone, free thyroxine and free triidothyronine values. The birth weights ranged between 2500g to 4700g with mean (SD) value of 3241.46(459.495) gram. Their gestational age ranged between 37 to 44 weeks with an average of 39.74 weeks. The 2.5[th] and 97.5[th] percentiles of values were found to be 3.48 mIU/L and 27.57 mIU/L for thyroid stimulating hormone, 0.89 ng/dL and 1.53 ng/dL for free thyroxine and 1.19 pg/mL and 2.51 pg/mL for free triidothyronine respectively.

Conclusion: In the present study the reference intervals of thyroid stimulating hormone ,free thyroxine and free triidothyronine were tried to be established and based on the results obtained, , were 3.48 - 27.56 mIU/L for thyroid stimulating hormone, 0.89 - 1.53 ng/dL for free thyroxine and 1.19 - 2.51 pg/mL for free triidothyronine. It has been concluded that the result can provide us with an important clue to establish population specific reference intervals using large scale studies.

Keywords: Thyroid function tests, reference intervals, screening program, Congenital hypothyroidism

Antibiogram Profile of uropathogens isolated at Bahir Dar Regional Health Research Laboratory Centre, Ethiopia.

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Background: Bacteria that live in the bowel are the most common cause of urinary tract infections. The study was aimed to determine the types of bacterial isolates and their antimicrobial susceptibility pattern from patients with urinary tract infections.

Materials and Methods: Data were collected retrospectively from paper-based registers for patients registered from January 2012 to December 2014 at Felege Hiwot Referral Hospital. All patients with complete required data were included. Demographic and bacteriological data of patients such as age, sex, types of bacterial isolates and their gram reaction, antimicrobial susceptibility patter reports were extracted for analysis. For all patients midstream urine samples were collected and processed with conventional culture and biochemical tests. Isolates were tested against commonly used antibiotics by Kirby-Bauer disc diffusion methods. All data were entered, cleared, and analyzed using SPSS version 20. Descriptive statistics was used to present data and Chi-square test was calculated to compare the proportion of bacterial isolates between sex and age and $p < 0.05$ was considered to indicate statistically significant difference.

Results: urine culture was processed from 446 patients. Females constituted (67%). The median age was 27 years. Significant bacteriuria was observed on 30.5% (95% CI: 26.4-34.9%) cultures. Of these, 78% (95% CI: 71.0-84.7%) were from females. The proportion of bacteriuria was high in study participant in the age range 16-35years (P=0.046). The most commonly identified isolates were *Escherichia coli*, 72 (49 %) followed by *Klebshella pneumonia* 20 (13.6%) and *Pseudomonas aeruginosa* 11 (7.5%). The overall antimicrobial susceptibility profile showed that Trimetoprim-sulphamethoxazole, amoxicillin/clavulanate and ampicillin revealed 84 (66.7%), 61(79.2%), 106(91.4%) resistance levels, respectively. Conversely, 64.2-100% sensitivity rate was documented for ciprofloxacin, gentamycin and pepracillin.

Conclusion: urinary tract infection associated with high levels of drug resistant bacteria is an important health concern of the study population. Ongoing continued surveillance of the types of uropathogens and their up-to-date antimicrobial resistance profile is crucial to ensure appropriate recommendations for better management of patients.

Keywords: UTI, uropathogens, antimicrobial resistance, Bahir Dar, Ethiopia

C-Reactive Protein Point-of-Care Testing and Antibiotic Prescribing for Acute Respiratory Tract Infections in Rural Primary Health Centers of North Ethiopia.

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Background: Unjustified antibiotic prescribing for acute upper respiratory infections (URTIs) is probably more common in poor-resource settings where physicians are scarce. Introducing C-reactive protein (CRP) point-of-care testing in such settings could reduce the misuse of antibiotics, which could avert antibiotic resistance. However, precedent information on antibiotics prescribing tradition and levels of CRP are not available that help indicate the applicability of CRP point-of-care testing in resource-limited settings.

Objective: This study aimed to point out the frequency of antibiotic prescribing and distribution of CRP levels in primary care settings of north Ethiopia.

Methods: We included 414 patients with acute URTIs from four health centers. Health professionals recorded the clinical features of the patients, but the laboratory professionals measured the CRP levels of all patients at the point of care.

Results: The most prominent respiratory causes for consultation were acute URTIs combined (44.4%), and lower respiratory tract infections—pneumonia (29.71%) and acute bronchitis (25.84%). The CRP distribution was <20 mg/l, 20–99 mg/l and 100 mg/l or more in 66.6%, 27.9% and 5.5% of the patients, respectively. The CRP levels were significantly different among these clinical diagnoses (X_2 =114.3, P<0.001, d.f.= 4). A wide range of antibiotics was administered for 87.8% of the patients, regardless of the diagnostic or prognostic nature of their diseases. Antibiotic prescribing for acute URTIs in the rural areas of Ethiopia is unduly high, albeit the high proportions of mild, self-limiting illness, mostly URTIs. Implementation of CRP point-of-care testing in such resource-constrained settings, with low or middle grade health professionals, could help reconcile the inappropriate use of antibiotics by withholding from patients who do not benefit from antibiotic treatment.

Fasting Blood Glucose Variability and Associated Factors in Diabetic Patients Attending Outpatient Diabetic Clinic at Ayder Referral Hosipital, Northern Ethiopia. *Ezra Belay, MSc, Department of Medical Biochemistry, College of Health Science, Mekelle University; Letebrhan Tsega, Department of Medical Laboratory, college of health Science Mekelle University.*

Background: Wide glycemic variability has been proposed as one of the factors associated with poor glycemic control and diabetes related complications by worsening cellular and vascular damages. The aim of this study was to evaluate the extent of visit to visit fasting blood glucose variability and associated factors in patients with diabetes attending Ayder Referral Hospital.

Methods and Subjects: A retrospective analysis of data from 173 patients with diabetes was conducted. Relevant data were collected using face to face interview and review of patients' medical records. Binary and multivariate logistic regression was used to examine factors related to wide glycemic variability. Month to month variation of fasting blood glucose and other parameters were analyzed using coefficient of variation and other measures of variability.

Result: Data from a total of 172 patients with diabetes was included in the analysis. The majority of the study participants (72.8%) were patients with type 2 diabetes. Forty percent of the study participants had marked glycemic variability. While 85.5 % of the study population had mean blood glucose above the target glycemic range, 91% of the study patients with wide glycemic variability did not achieve their meant target glucose level. In bivariate and multivariate analysis type 1 diabetes, combination therapy and insulin treatment showed positive and significant association with wide glycemic variability.

Conclusion and Recommendation: Results indicate that most patients had wide glycemic variability and poor glycemic control. Additional efforts and targeted interventions are needed to improve inconsistent and poor glycemic control.

Hematological Indices and Their Correlation with Fasting Blood Glucose level and Anthropometric Measurement in Type 2 Diabetes Mellitus patients in Gondar, Northwest Ethiopia.

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Background: Diabetes mellitus is a global public health problem and a complex disease characterized by chronic hyperglycemia that leads to long term macro-vascular and micro-vascular complications. Recent studies have reported the role of hematological indices in diabetics contributing to the vascular injury. Thus, the aim of this study was to determine hematological indices and their correlation with fasting blood glucose level and anthropometric measurement in type 2 Diabetes Mellitus patients in comparison with healthy controls.

Methods: A comparative cross-sectional study was conducted at Gondar University Hospital chronic illness clinic from February to April, 2015. A total of 296 participants (148 case and 148 healthy controls) were selected using systematic random sampling technique. Data were collected using pre-tested structured questionnaire. Fasting blood glucose determination and hematological indices were processed by Bio Systems A25 and by Sysmex-KX 21N respectively. Independent sample t-test, Man Whitney U test and correlation statistics were used. A P-value < 0.05 was considered as statistically significant.

Result: There was significant difference in red blood cell distribution width (47.3fl ±2.6 vs 45.2fl ±3) in diabetic patients compared with controls. Total white blood cell in $10^3/\mu l$ (6.59±1.42 vs 5.56±1.38), absolute lymphocyte count in $10^3/\mu l$ (2.60±0.70 vs 2.04±0.63), absolute neutrophil count in $10^3/\mu l$ (3.57±1.46 vs 3.11±1.04) increased significantly in diabetics when compared with controls respectively. Among platelet indices, mean platelet volume (10.4fl ±1.1vs 9.9fl ±1.1) and platelet distribution width (14.5fl ±2.1vs 13.4fl ±2.1) were found significantly increased in diabetic patients (p<0.05) compared to control group. Significant correlation has been observed between anthropometric measurements and white blood cell indices, platelet indices.

Conclusions: The study showed statistically significant difference in some hematological profile of diabetic patients compared to controls. It is considered that alteration in hematological profile are associated with pathological processes and increased risk of vascular complications in patients with type 2 diabetes.

Molecular Typing of Mycobacterium Tuberculosis Complex Species Isolated from Tuberculous Lymphadenitis Cases in Addis Ababa, Ethiopia.

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Background: Ethiopia is one of the 22 countries with high burden of tuberculosis (TB) cases, and one third of the TB cases in Ethiopia are TB lymphadenitis (TBLN). However, little molecular typing information is available on the mycobacterial species and strains causing TB lymphadenitis. To this effect, adequate knowledge on the species and strains of mycobacteria which circulate among the human population in specific geographic location is required.

Objective: To identify the species and strains of mycobacteria causing TBLN in Addis Ababa, Ethiopia.

Methods and Materials: A cross-sectional study was conducted from February to October, 2013 on 206 TBLN suspected cases. Fine needle aspirate (FNA) or biopsy samples were collected from the cases and cultured on Löwenstein-Jensen (LJ) slants. Identification of species and strains of mycobacteria was made by region of difference (RD) 9 based polymerase chain reaction (PCR) and spoligotyping database SpolDB4.0 and SITVIT2 proprietary database respectively.

Result: Culture positivity was confirmed in 36% (74/206) of the suspicious cases. Almost all (98.6%) of the isolates were *M.tuberculosis* whileonlyone isolate was *M.bovis*. 41(55.4%) of the analyzed isolates belonged to the T sub lineage, with the following distribution: T3-ETH 14(34.1%), T1 20(48.8%), T3 6(14.6%) and T4 1(2.4%). 12(16.2%) of the total strains belongs to the CAS sub lineages with the CAS1-DELHI accounted for 7(58.3%),CAS-KILI 2(16.7%) and CAS 3/12(25%). Forty-five out of seventy four isolates were grouped into 11 clusters strains; a cluster consisted of 2-14 isolates and thus the clustering rate was 60.8% indicating recent transmission. Euro-American lineages formed the largest cluster rate (63.3%) among the total strains

Conclusion: In the present study, TBLN was mainly caused by *M. tuberculosis* and the predominantly responsible strains were T3-ETH of SIT149, T1 of SIT53, CASI-DELHI of SIT26 and T3 of SIT37 in decreasing frequencies.

Comparison of Mycobacterium Growth Indicator Tube BACTEC 960 with Lowenstein-Jensen for Recovery of *Mycobacterium tuberculosis* Complex at Ethiopian National TB Reference Laboratory, Addis Ababa, Ethiopia.

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Background: Tuberculosis remains a global challenge in its morbidity and mortality pattern, especially in association with current HIV pandemic. It is a treatable chronic mycobacterial infectious disease that primarily affects the lungs. One way of TB diagnosis is cultivating and identifying *Mycobacterium tuberculosis* Complex (MTBC) on culture media. Unlike solid culture media such as Lowenstein-Jensen (LJ), mycobacterial growth on liquid media is rapid and highly prone to contamination. Mycobacterium Growth Indicator Tube (MGIT), non-radiometric liquid culture system, has been introduced in Ethiopia since 2008. However, data on MTBC recovery rate of MGIT is limited.

Objective: The main aim of this study was to compare the performance of MGIT 960 system against LJ for recovery of MTBC from clinical specimens referred to National TB Reference Laboratory (NRL), Ethiopian public Health Institute (EPHI).

Methods: A retrospective study was conducted on archived data between January 2012 and December 2013 at NRL, EPHI. Turnaround time (TAT), LJ and MGIT culture result were collected from laboratory logbook for each specimen. Data entry was done using *SPSS version 20* statistical software. P- value of 0.05 at 95% confidence interval was considered significant for both methods. MTBC recovery rate was determined for the MGIT and LJ culture methods. The mean recovery time was calculated independently for the two methods considering smear positivity of the specimens.

Result Summary : A total 908 clinical specimens were processed using both LJ solid and BACTEC MGIT liquid culture methods. MTBC recovery rate among smear positive specimens was 66.7 % and 87.4% by LJ and MGIT, respectively (n=111). The recovery rate was 13.4% and 17.4% by LJ and MGIT, respectively, among smear negatives (n=796). The overall MGIT recovery rate was 26%, which is higher than LJ (20%). There was significant difference in recovery rate between MGIT and LJ (*p=0.002*). The average MGIT TAT was 16 and 31 days for smear positive and negative specimens, respectively. On the other hand, the LJ TAT was 20 days and 36 days for

smear positive and negative specimens, respectively. The contamination rate was higher in MGIT (15%) than LJ (9.3%).

Conclusion: The study showed MGIT liquid culture system has better MTBC recovery and TAT in both type of clinical specimens; smear positive and negative. However, MGIT had high contamination rate.

Keywords: Tuberculosis, Lowenstein-Jensen, Mycobacteria Growth Indicator Tube

Bacterial Contaminations of Raw Cow's Milk Consumed at Jigjiga City of Somali Regional State, Eastern Ethiopia.

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Background: Milk is a compensatory part of daily diet especially for the expectant mothers as well as growing children. It is virtually a sterile fluid when secreted into alveoli of udder. However, beyond this stage of production, microbial contamination might generally occur from different sources. A cross-sectional study was carried out from March 2013-January 2014 in Jigjiga city to assess bacterial contamination of raw milk meant for human consumption and to determine antimicrobial susceptibility patterns of the isolates.

Methods: A total of 120 raw milk samples were aseptically collected from critical control points (CCPs) that were hypothesized to be a source of potential contamination. Data were analyzed using SPSS version 17 computer software. P-value of < 0.05 was taken as statistical significance.

Results: Overall, the organisms identified and their prevalence rates were _E. coli_ 70(58%), _S.aureus_ 29(24.2%), _Shigella Spp._21 (17.5%), _Proteus spp._9 (7.5%) and _Salmonella spp._4 (3.3%). The difference in isolation rate in each CCPs is statistically significant in _E. coli_ ($\chi2=17.14$; $P=0.00$ at _3df_). High antibiotic resistance for _E. coli_ isolates was observed to Doxycycline (42.3%) and Ampicillin (30%). _Shigella spp._ was resistant to Ampicillin (38.1%). _Salmonella sp._ isolates were highly resistant to Amoxicillin (50%). Out of a total of 29 _S.aureus_ isolates, high resistance rate was observed to penicillin G 27(93.1%) followed by tetracycline 20(69%), and very low level of resistance to vancomycin 2(6.9%) and rifampicin 1(3.4%). Multidrug resistance was also observed in 55.2% of the total isolates.

Conclusions: Considering the high rate of raw milk contamination with _E.coli, S. aureus, shigella spp., proteus spp.,_ and _salmonella spp.,_ sanitary practice during collecting, transporting, and storage especially at market point is recommended; since the consumption of unpasteurized milk may inflict an important public health risk.

Keywords: Bacterial Contamination, Critical control Points, Raw Milk, Antibiotic

Throat Carriage of Gram Negative Commensals in Children with Rheumatic Heart Disease Who Received on-Going Monthly Penicillin G Prophylaxis.

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Background: Penicillin is the best choice available currently for secondary prophylaxis of acute rheumatic fever and/or rheumatic heart disease. Most of the time disease occurs when the normal flora balance disrupted. We hypothesize ongoing penicillin intake may disrupt the oral normal flora. Throat microbiota diversity is not studied in those children who have rheumatic heart disease and received on-going penicillin G prophylaxis.

Objective: To determine throat carriage rate of gram negative, oxidase positive bacteria in order to have a better understanding of their composition and dynamics in children having rheumatic heart disease who received on-going monthly Penicillin G prophylaxis.

Methods: Throat swabs from 234 children were collected and inoculated onto Modified Thayer-Martin agar supplemented with isovitalex, Vancomycin, Colistin, Nystatin and Trimethoprim. The bacterial strains were analyzed by biochemical tests (oxidase test, Gamma-Glutamyl Transferase (GGT), *ortho*-**Nitrophenyl-β-galactoside**, Tributrine), gram staining, as well as Matrix assisted laser desorption/ time of flight mass spectrometry for species differentiation and PCR for sero-group identification of *N. meningitidis*.

Results: Among 234 throat swabs 189 (80.8%) showed bacterial growths on Modified Thayer Martin agar, of which 129 (68.3%) were oxidase positive organisms. The isolation rate of gram negative, oxidase positive commensals was 50% (117/234). Throat carrier rate of *N. meningitidis, N. lactamica, M. catarrhalis, K. denitrificans* and *K. kingae* were 4.27%, 4.27%, 19.66 %, 15.81% and 2.56 % respectively. One serogroup A *N. meningitides* was GGT negative.

Conclusion: The throat carriage rate of gram negative commensals seems affected by on-going penicillin G prophylaxis when compared with other literatures conducted on healthy children without antibiotic pressure. Serogroup A *N. meningitidis* negative for GGT is discovered which may contribute the low prevalence of this serogroup in the world because of GGT is used as the diagnosis of *N. meningitidis*.

Keywords: rheumatic heart disease, Penicillin G prophylaxis, gram negative oral commensal

Performance of Xpert MTB/RIF Assay for Rapid Diagnosis of Extrapulmonary Tuberculosis in Selected Public Healthcare Facilities of Addis Ababa, Ethiopia.

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Background: Mycobacterium tuberculosis remains one of the most significant causes of death from an infectious agent. The rapid diagnosis of tuberculosis (TB) and detection of rifampicin (RIF) resistance are essential for early disease management. The Xpert MTB/RIF assay is a novel integrated diagnostic device for the diagnosis of tuberculosis and rapid detection of RIF resistance in clinical specimens.

Objective: The objective of this study was to determine the diagnostic performance of the Xpert MTB/RIF assay for the diagnosis of EPTB in Selected Public Healthcare Facilities of Addis Ababa, Ethiopia.

Methodology: A cross-sectional study was conducted from December 2014 to October 2015, 140 Extrapulmonary specimens that were obtained during the routine clinical processes. The various Extrapulmonary specimens were analyzed for direct AFB Ziehl-Neelsen staining, Xpert MTB/RIF assay and LJ cultured for isolation and dtection of tuberculosis . Diagnostic performance of Xpert MTB/RIF assay and AFB smear microscopy were compared against solid culture as the reference standard. Data were cleaned, sorted and entered in Excell sheet and analyzed using SPSS version 22 statistical package software. Numerical variables were summarized with mean ± standard deviation. A value of P of <0.05 was considered significant for all statistical analyses.

Results: A total of 140 patients were enrolled in the study. Out of these, 7.1 % (10/140) were positive for EPTB on smear microscopy, 18.6% (26/140) on Xpert and 20.6 % (28/136) on culture. Overall, 20.6 % (28/136) of tested cases were positive for EPTB by culture. Smear microscopy detected AFB in 32.1% (9/28) of culture-positive and 0.9 % (1/107) of culture-negative cases. Smear microscopy had 32.1% sensitivity and 99.1% specificity, whereas Xpert was positive for *M. tuberculosis* in 85.7 % (24/28) of culture-positive and 7.1 % (2/28) of culture-negative cases.

Conclusion: Xpert MTB/RIF assay demonstrated high sensitivity and specificity in detecting EPTB using body fluid specimen compared with conventional AFB smear microscopy The use of Xpert MTB/ RIF assay could be considred in TB clinic for rapid diagnosis of EPTB infection. Expansion of Xpert testing centers across the regions should be expedited to minimize the rate of spread of infection due to underdiagnosed or misdiagnosed case with microscopyfor diagnosis and treatment. However, Xpert MTB/ RIF positive and LJ culture negative cases need further exploration to maximize the diagnostic utlity of this rapid molecular methods in remote areas.

Keywords: TB, Sensitivity, Specificity, Predictive value, Xpert MTB/RIF.

Prevalence *Schistosoma Mansoni* Infection and Therapeutic Efficacy of Praziquantel among School Children in Mana District, Jimma Zone, Southwest, Ethiopia.

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Background: Intestinal schistosomiasis is one of the neglected tropical parasitic diseases caused by *Schistosoma mansoni* . Currently, the control measures for the disease is mainly based on mass drug administration (MDA) with praziquantel (PZQ) targeting the school age children. In Ethiopia, the potential foci for schistosomiasis and therapeutic efficacy of PZQ among school age children remain poorly explored. Therefore, we determined both the prevalence and intensity of *S. mansoni* infections and the therapeutic efficacy of PZQ among school children in Manna District (new foci for *S. mansion)*, Jimma Zone, Southwest, and Ethiopia.

Method: A school based cross-sectional study was conducted from March to April 2014. In screening phase, microscopic examination of stool were undertaken and eggs of *S. mansoni* were quantified in a single stool sample from 500 school children in three primary schools in the district by applying a single Kato-Katz thick smear. Subjects excreting eggs *S. mansoni* were administered with 40 mg/kg of PZQ and re-examined after three weeks of the treatment. The therapeutic efficacy of PZQ against *S.mansoni* was evaluated by cure rate and egg reduction rate using group arithmetic mean. The therapeutic efficacy of PZQ was considered to be sufficient when the cure rate is between 60% and 90% and when the egg reduction rate is at least 90% based on group arithmetic mean.

Results: The overall prevalence of *S. mansoni* among the school children in the district was 24.0 %/(120/500).The higher prevalence was recorded among males 25.6 %(61/238) than females 22.5 % (59/262). Majorities (27.5%) of infection intensity were light; among infected children with mean fecal egg count (FEC) 202 egg per gram (EPG). The therapeutic efficacy of PZQ at a dose of 40 mg/kg was highly efficacious (cure rate: 99.1% and egg reduction rate: 99.9%) among the School children in the district.

Conclusion: The school children in the Manna District, Jimma Zone were at moderate risk of the morbidity caused by *S.mansoni* (prevalence > 10% and < 50% according to WHO threshold), and hence a biannual MDA with PZQ is required. PZQ available on the local market revealed efficacious and can be recommended for individual treatment in absence of MDA.

Keywords: *Schistosom mansoni*, Kato-Katz, Praziquantel, Prevalence, Intensity, Cure Rate, Egg Reduction rate

Abs. 35

Visceral Leishmaniasis Treatment Outcome and Its Determinant Factors among Patients in Northwest Ethiopia.

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Background: Poor treatment outcomes of Visceral leishmaniasis (VL) is responsible for a high mortality rate in resource limited setting like Ethiopia. This study aimed at identifying the rate and determinate of poor VL treatment outcome in Kahsay Abera Hospital, Northwest Ethiopia.

Methods: An institution based retrospective follow up study was conducted among 595 VL patients who were admitted to Kahsay Abera Hospital, Northwest Ethiopia from October 2010 to April 2013Data were entered into Epi Info version7.0 and exported to SPSS version 20 for analysis. Bivariate and multivariate logistic regression models were fitted to identify determinants of VL treatment outcome. Adjusted odds ratio (AOR) with 95 % Confidence interval (CI) was used and p-values, 0.05 were considered statistically significant.

Results: The rate of poor treatment outcome was 23.7 %. Late diagnosis ($\geq$ 29 days)(AOR=4. 34, 95% CI (2.22,8.46)), unable to walk at admission (severely ill)(AOR=1. 63, 95% CI (1.06,2.4)) and VL-HIV co-infection (AOR=2. 72,95%CI (1.4,5.2)) were found to be the determinates of poor VL treatment outcomes.

Conclusion: Poor treatment outcome was found to be high. Early diagnosis and treatment of VL patients would be recommended to improve VL treatment outcome.

Keywords: Visceral Leishmaniasis, Treatment outcome, Determinant

Improved Malaria Case Management in Formal Private Sector through Public Private Partnership in Ethiopia: Retrospective Descriptive Study.

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Background: Malaria is a major public health problem in Ethiopia. It is still reported among the ten top causes of morbidity and mortality. More than one third people sought malaria care services from private health sectors in Ethiopia. Studying malaria prevalence is necessary to monitor and evaluate effectiveness of planned interventions. Therefore, the aim of this study was to evaluate the contribution of Public Private Mix (PPM) approach in improving quality of malaria case management among private providers.

Method: A retrospective descriptive study was conducted using 2959 facility-months data collected form 110   PPP for malaria care facilities. Data abstraction formats were used to collect and collate the data on quarterly bases. The data were manually cleaned and analyzed using Microsoft Office Excel 2010. To claim statistical significance non parametric McNemar test was done and decision accepted at P<0.05.

Results: Between the initiation of the PPM for malaria care services i.e. April 2012 through September 2015, a total of 873,707 malaria suspected patients were identified, of which one fourth (223,293/873,707; 25.6%) were treated as malaria cases. Among malaria suspected cases the proportion of laboratory investigation for malaria improved form recorded in first quarter 87.7% to 100.0% in last quarter (X^2 = 66.84, P< 0.001). The majority (214,259/223,293; 96.0%) were parasitologically confirmed cases either by using microscopy or rapid diagnostic tests. The overall slid positivity rate was 25.1% (214,259 /851,994) of which half (108,704/214,259; 50.7%) were positive for Plasmodium falciparum and slightly lower than half (96,765/214,259; 45.2%) for Plasmodium vivax; the remaining 8790(4.1%) showed mixed infections of Plasmodium falciparum and Plasmodium vivax. Adherence to appropriate treatment using Artemether-Lumrfantrine (AL) was improved from 47.8% in the first quarter to 95.7% in the last quarter (X^2 = 12.89, P<0.001). Similarly, proper patient management using Chloroquine (CQ) was improved from 44.1% in the first quarter to98.12 in the last quarter (X^2 = 11.62, P< 0.001).

Conclusion: This study demonstrates that PPM in Malaria in private health sector can contribute significantly to malaria prevention and control in Ethiopia through provision of quality assured malaria case management.

Keywords: Malaria, Case Management, Public Private Partnership, formal private sector

Magnitude of Malaria and Factors among febrile Cases in Low Transmission Areas of Ethiopia: A Facility Based Cross Sectional Study.

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Background: Malaria is a life-threatening infectious disease caused by Plasmodium species. It is estimated that over 40% of the world's population lives in areas where there is high risk of malaria infection. The problem of malaria is very severe in Ethiopia in general and in Hadiya Zone in particular where it has been the major cause of illness and death. However the prevalence of the disease in the study area is not yet documented.

Methods: A facility based cross-sectional study was conducted in Hadiya Zone from May 15 to June 15, 2014. Pre-tested structured questionnaire was used for data collection. Systematic sampling technique was used to reach respondents. Data were entered on Epi-info software version 3.5.4 and exported for analysis. Descriptive and Logistic regression analysis was done by using SPSS 16 statistical software.

Results: Out of 411, 106 (25.8%) of participants had malaria in the study area. Of which, 76 (71.7%), 27 (25.5%), and 3 (2.8%) were *Plasmodium vivax*, *Plasmodium falciparum*and mixed infections respectively. History of travel to malaria endemic area, [AOR: 2.59, 95% CI: (1.24, 5.38)], bed net utilization, [AOR: 4.67, 95%CI:, (2.11, 10.37)], practice related to malaria prevention and control, [AOR: 2.28, (95%CI: (1.10, 4.74)], knowledge on malaria, [AOR: 5.09,95%CI: (2.26,11.50)] and estimated distance from the water bodies to the respondents' residence, [AOR: 3.32, (95%CI: (1.13, 9.76)] were significantly associated factors of malaria positivity in the study.

Conclusion: The present study revealed that the magnitude of malaria in low transmission area of the study is high and need a focus. Therefore, malaria prevention and control works in the area should focus on bed net distribution and utilization, information education and communication to increase knowledge about malaria transmission, prevention and control practice with special consideration for people who reside near water bodies.

Keywords Malaria, Plasmodium vivax, Plasmodium falciparum, Factors

Abs 38

The Magnitude of Multi Drug Resistance Tuberculosis and Related Co Morbidities in Amhara Region, Ethiopia, 2010-2014.

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Background: Organisms that are resistant to the most effective anti-TB drugs (isoniazid and rifampicin) cause Multidrug-resistant TB (MDR-TB). Globally in 2013, 45.3% of the estimated MDR-TB patients have been detected were diagnosed and notified, About 97,000 patients were enrolled on MDR-TB treatment. Treatment was started in Amhara region in August 2010.

Methods: We conducted retrospective descriptive cross-sectional study for patients from 2010 to 2014. All MDR TB patients were included. We collected data from three multi drug resistant tuberculosis treatment centers in Amhara region and review patient register and charts.

Result: Of 342 MDR TB patients, males constituted 56.1%. Case fatality rate was 12%. The age specific attack rate was higher (4/100,000) in 25-44 years, while that of mortality was higher in >65 years old (1/100000). Urban areas had higher number of cases. HIV testing was done for 96% of the patients and 81(24.5%) were found HIV positive. Of these, 50% were on ART. Only 22(6.4%) were primary MDR TB cases. From 222 (64.9 %) screened for malnutrition, about half had moderate to severe malnutrition. The performance for MDR TB case search for the years 2013 & 2014 was 48.7% & 66.4 % respectively. Treatment success rate was 84.6%, 80% and 77.9% for the cohorts of 2010, 2011and 2012 respectively.

Conclusion and Recommendation: The burden of MDR TB increases from year to year with higher prevalence in males and urban areas. The performance of case search was lower than the global target but the treatment success rate found to be higher than the global average. Therefore, we recommend intensified case finding, strengthening strict follow up and observation of cases in first line anti TB treatment and nutritional screening.

Keywords: MDR TB, co-morbidities, Amhara Region, Ethiopia

Determinants of Vulnerability to HIV in Urban Settings in Ethiopia.

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Background: Ethiopia is one of the growing economies in the world. In connection to this urbanization is also expanding fast. Currently 17% of the population lives in urban setting and this is believed to leap to 38% in 2050. Although urbanization is associated with improved access to services, urbanization poses health disparities and vulnerability to health problems particularly HIV is pronounced in urban setting. However, there is limited evidences on determinants of such vulnerability. This study seeks to identify determinants of vulnerability to HIV in selected urban centers.

Methods: Series of focus group discussions and in-depth interviews were carried out with a total of 150 community members as well as 40 in-depth-interviews and 15 case studies with selected residents in six purposively selected cities: Adama, Dire Dawa, Hawassa, Debre Birhan, Gondar, and Mekelle. Data so collected was coded and categorized manually and analyzed thematically in line with the objective of the study.

Result: Finding shows that it is not only people who are vulnerable, but also specific places in the towns. While factors of vulnerability for places include overcrowding, being hub of in-migrants and transistors, lack of basic facilities such as water, electricity, latrine, waste disposal mechanism and private houses as well as loose social controls and restraints. Such residents as daily laborers, Female Sex Workers, students living away from family, widows, separated and divorced women, girls who work in restaurants and those in petty trade were found to be relatively more vulnerable to HIV infection. It was also gathered that these same section of the population were not using available HIV services due lack of awareness, competing priorities to generate their livelihood and cost of services; institutional factors related to availability of supplies and equipment, decreased number of institutions providing support as well as stigma associated to HIV infection.

Conclusion: This study reveals that different group of people are vulnerable to different problems and different sections of the towns show different level of vulnerability. Therefore, every urban need to be mapped accordingly to determine which groups of people are vulnerable to selected social, economic and health factors and which section of the town is vulnerable to these defined problems so that authorities plan interventions accordingly. Besides, this finding show that vulnerability to HIV has roots in various sectors that require coordinated multi-sectoral response.

Predictors of Lost to Follow up from Antiretroviral Treatment for Adult Patients in Oromia Region: A Case Control Study.

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Objective: The pandemic of acquired immunodeficiency syndrome is one of the world's health and socioeconomic challenge that has killed more than 25 million people since it was first recognized in 1981. It is known that antiretroviral treatment (ART) reduced morbidity and mortality from HIV/AIDS related causes. Loss of patients from this treatment poses a paramount problem to the public. Information on predictors of lost to follow up from the treatment is scarce in the study area and similar settings. Therefore, this study aimed at identifying correlates of lost to follow up from ART among adult patients in Oromia region of Ethiopia.

Methods: A case-control study was conducted between February and April, 2015 using medical records. Stratified sampling technique was used to select health facilities. The proportion of the facilities to be included was determined by the number of patients on treatment during data collection in each stratum. Then, specific health facility was randomly selected from a list of the health facilities per stratum. All adult patients (15yrs or older) who were registered as lost to follow up in the selected health facilities during the 12 months prior to data collection date were included as cases. For each case, two patients with good adherence to the treatment were randomly selected from respective health facilities. Accordingly 416 cases and 832 controls were included in the study. Data were double-entered into Epi Info 7 and analyzed using SPSS 20. Both univariate and multivariate analyses were made depending on the nature of the variables and satisfaction of the required criteria for the analysis model to be applied. Binary logistic regression with 95% confidence interval was used to identify correlates of lost to follow up.

Results: Age 15-24 years (AOR, 19.82; daily labourers (AOR, 5.36; 95%CI:3.23,8.89), rural residents (AOR, 2.35; 95%CI:1.45,3.89), WHO clinical stage IV (AOR, 2.29; 95%CI:1.45,3.62), baseline $CD_4 < 350$cells/ml (AOR, 2.06; 95%CI:1.36,3.13), sub optimum adherence to ART (AOR, 7.42; 95%CI:1.87,29.41), were independent predictors of lost-to-follow-up from ART in the region.

Conclusion: Multiple risk factors, both socioeconomic and clinical factors, were associated with the lost to follow up from the treatment. Attention is required to address these factors during patient preparation for the treatment and follow up counselling by practitioners. We also recommend other study to identify what happened to the patients lost to follow up, as the current study could not account for those who self-transferred to other treatment facilities.

Keywords: ART, Lost to follow up, adult, associated factors, case control, Oromia region

Prevalence of Malaria and its Association with ABO/RH Blood Groups among Blood Donors Attending Arba Minch Blood Bank.

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Objective: Determination of the prevalence of malaria parasites in blood donors will certainly help in reviewing the screening procedures and making health policy decisions. The objective of this study was to assess the prevalence of malaria parasites and associated factors among blood donors attending Arba Minch Blood Bank.

Methods: Facility based cross-sectional study was conducted from February to June 2015. A structured questionnaire was used to capture data on socio-demographic and clinical data. Giemsa stained thin and thick blood films were examined for _plasmodium_ parasites and positive samples were reported quantitatively. All the data was analysed using SPSS version 20.0.

Results: Data from 416 donors was complete for analysis. The prevalence of infected donors was 4.1% (17/416). Mainly ring stages (14/17) were detected, and most of the positive blood films (16/17) showed densities less than 1000 parasites/µl. Bivariate analysis show that donors who do not use bed net (crude odds ratio= 4.518, 95% CI= 1.019-20.032, p=0.047) and those without previous blood donation history (crude odds ratio=3.798, 95% CI=1.217-11.848, p= 0.022) were more susceptible to malaria parasitemia. The most frequent ABO blood group was blood group O, 42.1% (175/416), followed by blood group A, 32.7% (136/416). Infection rate was significantly associated with ABO (p=0.022) but not Rh (p=0.104) blood groups. Donors with blood group O were more susceptible to malaria parasitemia as compared to other ABO blood groups (COR=6.899, 95%CI=1.951-24.391, p=0.003).

Conclusion: There is considerable prevalence of malaria parasites in apparently healthy blood donors attending Arba Minch blood bank. Therefore, donors should be screened for malaria in Ethiopia. Group O donors are more susceptible to plasmodium infection as compared to non-group O donors.

Keywords: Blood transfusion, prevalence, malaria, blood donor

Prediction of Malaria Species Morbidity Using Data Mining Technique: The Case of Chewaka Health Center Ilu Aba Bora, South West Ethiopia.

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Introduction: Malaria is continues to be a leading cause of morbidity and mortality worldwide. In Ethiopia, transmission is unstable and seasonal, with occasional devastating epidemics. In health facilities morbidity data can be used for prediction of occurrence of disease and can help in decision making using data mining techniques.

Objective: The main objective of this study was to predict malaria species morbidity from malaria data by using data mining technique in Chewaka Health Center, South-West Ethiopia, 2012.

Methods: Institution based retrospective record review study was conducted. All malaria positive data in Chewaka health center from September 01, 2007 to December 30, 2011 was collected from manual records in to new format prepared for the study purpose and the data was integrated with meteorology data of nearby meteorology station. A total of 5077 records were used and data analysis was done by using WEKA classification decision tree J48 and neural network algorisms with two modes, 10 fold cross-validation and 90%-10% percentage split for training-testing modes.

Results: Of 5077 records in dataset class attribute, *P. faliciparum* 2745(54.1%), *P. vivax* 2258(44.5%) and mixed 74 (1.5%). Prediction model developed by Decision tree J48 algorism with 90%-10% training-test mode was scored the highest accuracy and selected as best model. The model predicted correctly 86.22 % *P. faliciparum*, *P. vivax* 86.14 % and as mixed 99.4% species in their class, over all predictive accuracy was 90.5% (precision = 0.905, recall= 0.905). Mean monthly relative humidity, mean monthly maximum temperature, total monthly rainfall, Age and address were selected by the models as best predictive attributes for malaria species.

Conclusion: This study showed malaria morbidity predicted by mean monthly relative humidity, mean monthly maximum temperature, total monthly rainfall, Age and address. Using meteorology and morbidity data mining can help for effective decision making on malaria prevention and early warning of epidemics.

Trend Analysis of Malaria Occurrence in Wolaita Zone, Southern Ethiopia; Retrospective Cross-Sectional Study.

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Background: Despite efforts and considerable progress in its control over the past decades, malaria remains to be a major public health concern in Ethiopia. Over the years, the disease has been consistently reported as one of the first leading causes of outpatient visits, hospitalization and death in health facilities across the country. Despite some studies at different parts of the country, malaria situation with regard to its trend, distribution, and seasonal patterns remains unknown in the study area.

Objective: The study is aimed at determining the last five years trend of malaria occurrence from 2008/09 to 2012/13 in Wolaita zone, Southern Ethiopia.

Methods: A health facility-based retrospective study was conducted in Wolaita zone from March-August/ 2014. Five years' laboratory confirmed malaria record review was made from six health facilities. Daily malaria data was entered by date in to Epi Info 3.5.3 and analyzed by Excel worksheet. Tables and graphs are used to present results.

Result: A total of 105,755 laboratory confirmed malaria cases were reported, with total slide positivity rate of 33.27% and mean annual occurrence of 21,151 cases. Malaria occurred with a fluctuating trend in the study area, with its peak occurred at the year 2011/12. Overall, no remarkable decline observed in the total laboratory confirmed malaria in the last five years. P.falciparum was the predominantly reported species, accounting for 75,929 (71.80%) of cases. The highest slide positivity rate was observed in the age group of 5-14 years (40.5%) followed by 1-4 years (35.5%). Two malaria peak seasons occurred; one from September to December and the other from April to June.

Conclusion: There was no remarkable decline in the occurrence of laboratory confirmed malaria over the last five years. This could be an important indicative that the area is hardly on the track, with implications for need of great emphasis to malaria intervention in line with achieving the global as well as the national objectives of reducing malaria burden in 2015.

Delay in Diagnosis of Pulmonary Tuberculosis in Low- and Middle- Income Setting: Systematic Review and Meta-Analysis.

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Background: Delayed consultation, diagnosis and treatment of tuberculosis leads to severe illness, increased mortality and transmission. Assessment of time delays is essential to evaluate effectiveness of programs, and identify programmatic impediments. Hence, this systematic review and meta-analysis summarized patient, health system and total delays in diagnosis of pulmonary Tuberculosis and associated factors in low and middle income countries.

Objectives: To summarize patient, health system and total delays in diagnosis of pulmonary tuberculosis and associated factors with it in low and middle income countries

Methods: The review was done following standard procedures of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement and checklist. Web-based databases were searched to retrieve relevant studies from 2007 to 2015.These were *Springer link, Pubmed central, Hinari* and *Google scholar*. Searching terms were *pulmonary tuberculosis, diagnostic delay, patient delay, health system delay, provider delay, doctor delay, health care seeking and health care seeking behavior*. Retrieved studies were summarized by systematic review and meta-analysis using comprehensive meta-analysis software.

Results: Forty studies involving 18,975 patients qualified for systematic review and 14 of them for meta-analysis. The reported median total delay ranges from 30 to 366.5 days; with a relatively more for patient delay (4 to 199days) compared to health system delay (2 to 128.5 days). The observed patient and health system delays in diagnosis of PTB were attributed by a set of individual factors and health system factors. The individual factors include demographics, socio-economics, knowledge, beliefs, perceived barriers, behaviors, clinical features and skills. The health system factors include limited access of health facilities near to villages; lack of TB diagnostic services in easily accessible health facilities such as private facilities, drug vendors and lower level facilities; cost of some diagnostics (pathology and X-ray); and existence of informal healers providing unlimited therapeutic services. The meta-analysis showed a 42% of pulmonary tuberculosis patients delayed seeking care by a month or more; uneducated patients [pooled OR

(95% CI): 1.5 (1.1, 1.9)] and those who sought care first from informal providers [pooled OR (95% CI): 3 (2.3, 3.9)] had higher odds of patient delay.

Conclusion: Delay in diagnosis is still a major challenge of TB control and prevention programs in low income setting. Efforts to develop new strategies for better case-finding strategies, and improving patients' care seeking behavior need to be intensified.

Keywords: patient delay, health system delay, diagnosis delay, pulmonary Tuberculosis, risk factors.

The Prevalence of Pulmonary Tuberculosis and Intestinal Parasitosis among Art Attendant HIV Patients at Kombolcha Health Center, South Wollo Zone, Northeast Ethiopia.

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Background information: Human immunodeficiency virus infection leads to development of acquired immune deficiency syndrome. The primary immune defect in AIDS results from the reduction in the numbers and effectiveness of CD4+ T lymphocytes and causes an extensive array of viral, bacterial, fungal, and parasitic infections.

Objective: To determine the prevalence of pulmonary tuberculosis and intestinal parasitosis among ART attendant HIV patients at Kombolcha health center, Northern Ethiopia.

Methodology: A cross-sectional study was conducted among HIV sero-reactive patients who were on ART program from June 2015 to August, 2015 at Kombolcha health center, Kombolcha, North Ethiopia. To diagnose *Mycobacterium tuberculosis,* LED smear microscopy technique was used and Intestinal parasitosis was examined by using both wet mount preparation and concentration techniques. Microsoft excel was used to enter the data and this data were exported to SPSS software for the analysis. Uni-variate and multi-variate logistic regression test were used to evaluate the association between dependent variable and independent variables. The 5% level of significance used as the cut-off for statistical significance, i.e. P-value less than or equal to 0.05 was considered statistically significant.

Result: A total of 223 study subjects were participated in this research work, 153 (68.61%) were female and majority, 205 (91.93%) were urban dwellers. The overall prevalence of intestinal parasitosis among the study participants was 27/223 (12.11%). Seven types of species were identified namely: *Entameoba histolytica* (the most prevalent), which accounts 7.17% (16/223); followed by *Gardia lamblia*, 3/223; *Ascaris lumbricoides*, 3/223; taenia species, 2/223; *Strongloid stercolaris*, 1/223; *Hymnolopis nana*, 1/223; *Entrobius vermicularis* (1/223). Forty (17.94%) were having TB indicator sign and symptoms but *Mycobacterium tuberculosis* was detected only on one patient (1/223 = 0.45%).

Conclusion and Recommendations: None of the independent variables were statistically significant with intestinal parasite and pulmonary tuberculosis infection. Further comprehensive parasitic and bacterial etiological study should be conducted in the future that the current study did not address.

Keywords: Kombolcha, HIV/AIDS, ART, parasite, TB

Brucellosis among Patients with Febrile Illness in Four Districts of East Wollega Zone, Western Ethiopia.

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Background: Brucellosis is a zoonotic disease with veterinary, public health and economic significance in most developing countries. Human brucellosis is a severely debilitating disease that results in permanent and disabling sequel, requires prolonged combination therapy with antibiotics, results in considerable medical expense and loss of working hours. The level of the problem was not well studied in Western Ethiopia. Thus, this study was designed to determine the prevalence of brucellosis among patients with febrile illness attending selected health institutions in four districts/Woredas of East Wollega Zone, Ethiopia.

Methods: A cross-sectional study was conducted among 422 febrile patients attending in randomly selected health institutions (Nekemte referral hospital, Nekemte health center, Getema health center, Arjio Gudatu health center and Sire health center) from August to September, 2014. The serum samples were collected from each study participants by respective health institution laboratory personnel, and stored in deep freezer until transported to Sebeta National Animal Health Diagnostic and Research Center for laboratory test. The screening test was conducted using Rose Bengal plate agglutination test, and those who were reactive on rose Bengal test were confirmed by complement fixation test. A pre tested and structured questionnaire was used to collect data on associated risk factors that are believed to influence the spread of Brucella infection.

Result/Findings: The - prevalence of brucellosis ranges from 1.5 to 4.6 with average 3.3 by Rose Bengal plate screening test and 1.1 to 2.3 with average 1.2 by complement fixation test. The disease was higher among participants attending Nekemte Referral Hospital but lower among participants attending Getema Health centre. Brucellosis occur in higher among study participants own livestock 8(3.5%), share house with livestock 6(5.2%), had contact with - livestock 9(4.2%), participate in cutting part of animal 5(3.8), assist in animal delivery 5(4.9), drink raw milk 8(4.3), participate in milking 7(4.1%), eating fresh cheese 7(4.1%), eating raw meat 10(3.4%), and those lack awareness on brucellosis 13(3.1%). From these, involvement in slaughter of animals [0.24(0.06-0.86)] and lack awareness about brucellosis [7.77(0.81-74.4)] were significantly associated with the disease.

Lessons and Recommendations: The level of brucellosis sero-prevalence in the study area cannot be undermined. Therefore, diagnostic test for the disease should be include in the health care system and proper health information should be given on how to handle animal during slaughtering and method of prevention of the disease.

Keywords: Sero prevalence, *Brucellosis, Patient with febrile, Western Ethiopia*

Sero-prevalence and Associated Factors to *Toxoplasma gondii* in Pregnant Women following Antenatal care at Mizan Aman General Hospital, Bench Maji Zone (BMZ), South West Ethiopia, 2014.

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Background: The intracellular parasite, Toxoplasma gondii (T.gondii) is found worldwide. Infection with T. gondii during pregnancy can result in fetal and neonatal death or various congenital defects. A serological survey during pregnancy represents a valuable tool for the effective diagnosis and treatment affected neonates. The aim of this study was to assess the sero-prevalence and associated factors of T.gondii in pregnant women following ante natal care (ANC) services at Mizan Aman General Hospital, Bench Maji zone (BMZ).

Methods: A cross-sectional study of sero-prevalence of T.gondii in 232 pregnant women attending antenatal care at Mizan Aman General Hospital was conducted during 01 December, 2014 to 18 February, 2015. Systematic random sampling technique was used to obtain the required sample. About 5ml of blood sample was collected aseptically by using properly labeled plain tube with the necessary information. The blood samples centrifuged at 3000 rpm for 10 min to separate serum and the serum was stored at a temperature of 20°C below zero until the final serological analysis for the presence of anti T.gondii antibodies (i.e. Immune globulin 'M' (IgM) and Immune globulin 'G' (IgG) using enzyme linked immunosorbent assay (ELISA) test. Exit interview was done with eligible mothers to obtain socio-demographic and behavioral data using structured questionnaires. Multiple logistic regression modeling was applied to identify the potential predictor variables for the presence of sero- T.gondii at p-value less than 0.05 to declare significant association.

Results: A total of 232 pregnant women were enrolled in the study making the response rate 100%. An overall sero-prevalence for T.gondii anti-bodies was 85.34%. About 82.32% of the pregnant women were IgG reactive with IgM non-reactive and 3.02% of the pregnant women were reactive for both IgG and IgM anti-bodies. None of the mothers were reactive for IgM exclusively. On multivariable logistic regression analysis; contact with cat and gardening soil were significant predictors of T.gondii infection with adjusted odds ratio (AOR) =2.37 (95% CI= [1.16, 3.57] and AOR=2.49 (95% CI= [1.53, 3.86] respectively.

Conclusion and Recommendation: Sero-prevalence of T. gondii antibodies for IgM was relatively high among pregnant women indicating the presence of latent and absence of recent infections. Contact with cat and soil were risk factors for T.gondii case. Creating awareness on the source of infection, modes of transmission and prevention of T. gondii should be given for pregnant women. Routine screening services for toxoplasmosis should be integrated with other ANC services to identify potential infections of the parasite.

Abs 48

Assessment of Trends and Determinants of Adult Mortality in Butajira, South Central Ethiopia: A Mixed Longitudinal Study.

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Background: Despite its increase, adult mortality remains a neglected public health issue in Sub-Saharan Africa. A lack of empirical data about the levels of mortality experienced by adults in this region has fueled this neglect. Thus, analyzing data from continuous surveillance system can be a corner stone to the development of reliable data on trends and risk factors for adult mortality.

Objective: To assess trends and identify determinants of adult mortality in Butajira, South Central Ethiopia

Methods: Both quantitative and qualitative studies were conducted. The Butajira database running from 1987-2008 was extracted and analyzed using STATA 12. The trend of adult mortality was computed using event history analysis and Poisson regression analysis was used to calculate IRR with 95% CI. For the qualitative part, data were collected from community leaders, staffs of health and agriculture offices and the BRHP to strengthen the result from quantitative part of the study. Open code 3.6 Software was used to code and categorize qualitative data and thematic analysis was employed.

Result: There was a significant decline in adult mortality, with some ups and downs in levels during the survey years. This was due to ill behaviors, social upheavals, food insecurity, health service related problems and occurrence of epidemics at different times. The incidence of adult mortality was found to be 6.57(6.33, 6.82) adult deaths per 1000 person years. There were higher incidences of female adult mortality with a level of (95%CI) 7.14 (6.78, 7.52). The incidence of adult mortality significantly increased with age. Married, divorced and widowed adults had higher incidence of death with adjusted IRR (95% CI) 1.71(1.52, 1.91), 2.93(2.11, 4.06) and 4.90(4.25, 5.66) respectively compared to the singles. Adults who were illiterate, resided in rural areas, confessed in Muslim religion and did not have window for their houses had significantly higher incidence of death with IRR (95% CI) 1.12(1.02, 1.23), 1.27(1.02, 1.57), 1.15(1.05, 1.26) and 1.20(1.08, 1.34) respectively.

Conclusion: The incidence of adult mortality showed a declining trend mainly due to social and behavioral problems. Age, residence, religion, marital status, availability of windows were significantly associated with incidence of adult mortality. Awareness creation with prevention of different diseases and ensuring food security are recommended to health and agricultural sectors respectively. Furthermore stakeholders are advised to work on decreasing the work burden of females and their empowerment.

Levels and Causes of Migration in Harar Health and Demographic Surveillance System, Eastern Ethiopia.

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Introduction: Ethiopia is one of the countries in Africa with a relatively high level of internal migration and population redistribution. In most instances, internal migration occurs in the form of rural-urban or rural-rural migrations, and resettlement policies, which are all substantial in Ethiopia. Internal migration in the country has traditionally occurred at marriage when the wife moves to live in the husband's community. Moreover, urbanization in Ethiopia is a growing trend that initiates migration and consequently puts pressure on urban infrastructure. Migration is known to be sex and age selective, women and young ages showing an increasing worldwide trends of movements in recent years with commonest reason shifting from marital reasons to economic reasons of seeking better jobs. Therefore, studying and analyzing how and why people move in and out of urban areas like Harar is important to understand how the population is changing over time and the precursors behind the movement.

Objective: The purpose of this study was to investigate the level and reason of migration in Harar Health and Demographic Surveillance System/Harar HDSS/ in the year 2013.

Method: Harar HDSS, an urban wing of Kersa HDSS, was established in 2011 in the 6 randomly selected kebeles of Harar town, Eastern Ethiopia. It is an open cohort of individuals longitudinally followed for tracking of health and demographic information from the population of selected representative kebeles of the town. Data about migration for the year 2013 were extracted from the HDSS database and in, out and net migration rates calculated as well as causes for migration determined using Microsoft Excel © and STATA-11.

Results: The in and out migration rate for both men and women was 76.2 and 155.7 persons per 1000 populations, respectively, giving a negative net migration rate of 79.5 people out migrating per 1000 population. There were high rates of female in-migrants to the HDSS site than the male with highest rates occurred at ages 10 to 19 years. A relatively high rates of male out-migrants than female with highest rates occurred at ages 25 to 29 years. In terms of destination places, about 18% of both male and female out migrants out migrated entirely outside of Ethiopia, and nearly 43% of them out migrated within Ethiopia, mostly to other urban areas of the country. The top reason for in and out migrations in both men and women were seeking jobs /employment (46% of women and 48% of men for in-migration and 52% of men and 48% of women for out-migration).

Conclusion and Recommendation: Migrants in Harar HDSS were economically active young and early age adults, mostly out-migrated for employment sake. This indicates the young disproportionately moving out of the town due to the lesser economic opportunities, as is indicated in the report of the 2005 Ethiopian Labor Force Survey(ELFS) that Harari region has the lowest (38.1%) employment to population ratio compared to all other regions of Ethiopia. Therefore, appropriate interventions should be designed by concerned bodies such as the local government of Harari people and other development stakeholders to give support and training for the youth on how to create jobs individually and in corporate forms.

Keywords: surveillance, in-migration, out-migration, net migration, reason of migration, internal migration, Harar.

Abs 50

Magnitude and Correlates of Gender-Based Violence among Married Women in Northwest Ethiopia.

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Background: Gender-based violence is a major public health and human rights problem with multiple sexual and reproductive health complications worldwide. This study was conducted to assess the magnitude of gender-based violence and its associated factors among married women in Northwest Ethiopia.

Methods: A community-based cross-sectional study was conducted from January to June 2015 using the World Health Organization multi-country questionnaire to measure violence against women. Trained data collectors interviewed 832 married women were selected by systematic random sampling technique. Epi info version 6.0 for data entry and SPSS version 20 for analysis were used. Data were principally analyzed using logistic regression.

Results: Six hundred twenty (74.5%) (95%CI:71.5%-77.3%) married women had experienced at least one type of GBV in their life time and 41.8% (95%CI: 38.3%-45.1%) in the last 12 months, such as psychological violence in a life time (62.3%), and in the last 12 months (35.6%), physical violence in life time (56.1%) and in the last 12 months (27.9%), sexual violence in life time (30.6%), and in the last 12 months (15.5%). Older women, polygamous marriage, stayed in relationship or in union with their husband for ≤10years, age difference with their current husband of ≥5years, early child marriage, offer of sexual intercourse for monetary gains or for business purpose and alcohol intake were factors associated with an increased risk of gender-based violence.

Conclusions: Gender-based violence was found to be high and a serious problem among married women in Northwest Ethiopia. Comprehensive community based health education program and strengthen women empowerment is necessary to improve this situation.

Keywords: Gender-based violence, Married women, Prevalence, Risk factors, Ethiopia.

Abs 51

Quality of Obstetric and Immediate Newborn Care in Selected Health Centers and Hospitals in Ethiopia: Observation of Deliveries and Immediate Neonatal Care.

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Introduction: Despite the impressive progress Ethiopia has made in the last two decades in improving maternal and neonatal health the reduction of maternal and neonatal mortality remains to be a great challenge for the country. Providing quality obstetric and immediate newborn care prevents mortality among mothers and newborns with complications. However, there is lack of empirical evidence on the quality of obstetric and immediate postpartum care in Ethiopia. Our study aimed to evaluate the quality of obstetric and the immediate new born care by observing labor and deliveries.

Methods: We conducted observation of a total of 722 laboring mothers and deliveries using an observation checklist that has WHO standards for labor and delivery care. We included a total of 30 health facilities (22 health centers and 8 hospitals) from Eastern Tigray, North Gondar and Guraghe zones. Quality of care scores were computed for the first stage of labor, second and third stage of labor, and immediate newborn care. Multilevel linear regression was used to identify correlates of quality obstetric and immediate newborn care at individual and health facility level.

Result: We observed that the quality of care scores for the initial assessment of clients, first, and second and third stages of labor and delivery were sub-optimal. Performance of selected quality standards were poor: for example, allowing support person (38% during first stage of labor and 15% during second and third stage of labor), washing hands before examination of clients (9 during initial assessment of clients, 13% during first stage of labor and 17% during second and third stage of labor), administration of oxytocin within first minute after birth (53%), and use of partograph to monitor labor and delivery (47%).

Similarly, the quality of immediate newborn care falls short of several standards and was not properly practiced by providers. For example, placing the baby skin-to-skin with the mother immediately after birth, keeping him/her skin-to-skin for one hour after birth, and discarding the wet towel after drying the baby were only practiced by 26.1%, 25.7% and 66.7%, respectively. Only 53.2% of the babies received vitamin K injection and the cord cutting was delayed for 2-3 minutes after birth for 40.6% of the babies.

The multilevel linear logistic regression analysis models found that functionality of equipment, years of experiences of providers, standard precautions, and women friendliness of the health facilities were statistically associated with quality of care at different stages of labor and delivery.

Conclusions: Evaluation of quality of obstetric and immediate newborn care in public health facilities in Ethiopia using WHO standards showed that quality of care falls short of most of the standards. Care providers' interaction with laboring mothers and how they address mothers' concerns and needs (such as allowing birth companion) is way below the evidence-based recommendations. Basic standards of practices such as hand washing/rubbing and life saving interventions such as immediate administration of oxytocin, proper use of partograph, thermal care for the newborn, and delaying cutting of the cord are unacceptably below the standards.

Recommendations: There is an urgent need to implement functional continuous quality improvement interventions focusing on improving quality of obstetric and immediate newborn care in public health facilities in Ethiopia. The recent initiative of the Federal Ministry of Health to provide respectful and compassionate care in the health facilities needs to take into account the gaps observed in provision of respectful maternity care by this study. We recommend that further implementation studies that look into the impact of quality of care on the survival and health of mothers and newborns should be conducted.

Abs 52

Level of Partograph Utilization and its Associated Factors among Obstetric Caregivers at Public Health Facilities in East Gojam Zone, Northwest Ethiopia.

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Introduction: The discrepancy regarding maternal mortality continues between developing and developed countries. Majority of the global maternal deaths are accounted by developing countries where sub-Sahara African region alone accounting for more than half of these death. The majority of these deaths and complications were due to obstructed and prolonged labor conditions, which could be prevented by cost-effective and affordable health interventions like the use of partograph and that is why the World Health Organization recommends the universal use of the partograph during labor. Therefore, this study has assessed the level of partograph use and its associated factors among obstetric caregivers in East Gojam Zone, Northwest Ethiopia.

Methods: A health facility based cross-sectional study was conducted in Northwest Ethiopia. The study was conducted among 273 randomly selected obstetric caregivers. The data were entered into Epi-data version 3.1 and analyzed using SPSS version 20.0 software. Descriptive statistics was used to describe the study population in relation to relevant variables. Bivariate and multivariable logistic regression at a 95% confidence interval with p-value of less than 0.05 was done to identify the possible factors associated with partograph utilization.

Result: About three fourth, 198 (72.53%) of the obstetric caregivers had attained diploma level of education. The obstetric care providers knowledge of partograph and its utilization was almost comparable as more than half, 153 (56.04%) and 147 (53.85%) of them had good knowledge and used the partograph respectively. Utilization of partograph was significantly higher among obstetric care providers of Public Health profession (AOR (95% C.I) 2.52 (1.12 – 5.68)) and those who were regularly working at delivery ward (AOR (95% C.I): 2.12 (1.07 - 4.57)). Moreover, caregivers who had learnt about partograph during their College and/ or University level of education and who had received on job training on Obstetric care were also more likely to use partograph during labor and delivery (AOR (95% C.I): 1.90 (1.04 – 3.45) and 3.50 (1.89 – 6.48)) respectively.

Conclusion: Level of partograph knowledge and its utilization in labor monitoring was found to be comparable. Being a public health by profession, on job training, university and /or college level education on partograph and regularly working in delivery ward were factors affecting partograph utilization. Providing pre-service and on job training about partograph and regular supportive supervision for providers would improve partograph utilization.

Proportion of Maternal Near Misses and Associated Factors in Referral Hospitals of Amhara Regional State, Northwest Ethiopia: A Hospital Based Cross Sectional Study. *Mulugeta Dile, MSc in clinical Midwifery, Debre Tabor University; Tatek Abate, MPHRH, Tewodros Seyum; MSc in Clinical Midwifery.*

Background: "Maternal near miss" is unitary of the promising indicators of quality obstetric care, which can supply relevant data for policy makers while selecting maternal health care priorities. This study aimed to assess the proportion of "maternal near misses" and its associated factors in Amhara Regional State Referral Hospitals, Northwest Ethiopia.

Methods: A Hospital based cross sectional study was conducted at 3 referral hospitals in Amhara region from March 1 to August 30, 2013. 806 mothers who visited maternal health care services in Amhara Regional State referral Hospitals were systematically selected and included in the study. Data were collected using pre tested and structured questionnaires through face to face interviews, abstracted pertinent information from respondents' medical records, and concealed observation. Descriptive and summary statistics were employed. Bivariate and multiple logistic regressions were computed to identify the presence and strength of association. Odds ratios with 95% confidence interval were computed to determine the level of significance.

Results: Out of 6,448 total deliveries, 806 mothers were included in the study yielding a response rate of 100%. The study revealed that the overall proportion of maternal near miss was 23.3 % (95% CI = 20%, 26%). Lack of conventional education(AOR = 2.00, 95%CI: 1.09, 3.69); 7 days or more hospital stays (AOR = 2.49, 95% CI: 1.46, 4.25); lack of antenatal care(AOR = 2.51, 95% CI: 1.50, 4.20); poor administration (AOR = 3.85, 95% CI 2.11, 7.03), clients' refusal to medical help (AOR = 4.02, 95% CI: 2.34, 6.90), primeval community thinking (AOR = 3.28, 95% CI 1.67, 6.46); and negligent medical personnel (AOR = 7.02 95% CI: 3.89, 12.65) were significantly associated with "maternal near misses".

Conclusion: The proportion of "maternal near miss" was found to be very high among the study participants. Provision of women centered health care for women who lack conventional education, investing in health promotion, education and functioning behavioral change communication can reduce the proportion of "maternal near misses". Health care providers should prepare standardized management protocols to detect complications earlier.

Keywords: Maternal near miss, Prevalence, Associated factors, Ethiopia.

Level of Institutional Delivery and Associated Factors among Women of Reproductive Age Group in Wolaiat Zone, Southern Ethiopia, Cross-Sectional Study.

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Background: Maternal death from preventable causes related to pregnancy and child birth is unacceptably high. Institutional delivery plays an important role to avert maternal death from such causes. However, only 16 % of women delivered at health facility by 2014 in Ethiopia. The factors which contribute for this low service utilization vary widely. Hence, this study aimed to determine the level and identify factors affecting delivery service up take among women who gave birth in the last 12 months prior to the survey in Wolaita Zone, Southern Ethiopia.

Methods: A community based cross sectional household survey was conducted from December 2014 to February 2015 in 11 randomly selected kebles. Data were collected using a pretested questionnaire from 444 women. Data were entered using Epi info (3.5.4) and exported to SPSS (16) for cleaning and analysis. Descriptive, bivarte and multivariate logistics regression analysis was conducted. Odds ratios were calculated to identify predictors of delivery service use.

Results: Nearly one in two women delivered at health facility of which, 199 (44.8%) and 12 (2.7%) delivered at government and private facilities respectively. The factors that significantly affected institutional delivery use in this study were residence in which the women lived (AOR : 3.66, 95% CI: 1.18- 11.31), women age at interview (AOR: 2.43, 95% CI: 1.33- 4.43), women's education (AOR: 2.05, 95% CI: 1.16- 3.65), first antenatal care visit at first trimester (AOR: 6.09, 95% CI: 2.14-17.3), time to reach to the nearest health facility (AOR: 2.54, 95% CI: 1.31, 3.51) and perceived health quality (AOR: 4.80, 95% CI: 1.13, 20.49).

Conclusion: The institutional delivery rate in this study was higher than the national and the regional rate reported by 2014 but it's short of target. Women education, place of residence, age at interview, month at first antenatal care, time to reach to the nearest health facility and perceived health quality were important determinants of delivery service uptake. Interventions targeted on women empowerment, early antenatal care initiation, addressing quality and physical accessibility barriers; and encouraging young women to delivery at health facility are expected to increase delivery service uptake in the study area. Behavior change communication (BCC) interventions on obstetrical risk factors related to home delivery and improving the overall service quality there by providing mother friendly services can also increase delivery service use.

Keywords: Institutional Delivery, Factors, Wolayta Zone, Ethiopia

Predictor of Institutional Delivery Intention among Pregnant Women in Yirgacheif Town, Gedio Zone, Ethiopia: A Community Based Cross-Sectional Study Design 2014/15. *Yohannes Addisu, MPH., and Dagachew Kebede, MSc., College of Medicine, Health Science and Referral Hospital, Dilla University.*

Background: Most maternal deaths occur because of delays in obtaining adequate medical care. The use of traditional birth attendants and home delivery were preferable to modern health facilities in developing country like Ethiopia. According to mini Ethiopian demographic health survey 2014 mother who attend institutional delivery was only 16.As a result of this most mother died at house hold level with infection, hemorrhage, obstructed labor, abortion, hypertension in pregnancy and the like in Ethiopia. Thus, before considering any possible intervention it was imperative to assess predictors of institutional delivery intention among the study participant.

Methods: A community based cross-sectional study was conducted among 252 pregnant women in Yirgachief Town, Gedio Zone, Ethiopia from March – April 2013. Households residing in all kebeles of Yirgachief town were surveyed to recruit & establish respondents who were pregnant. After establishing the sampling frames of respondents, we would use random sampling technique. Data were analyzed by SPSS.21.0.Pearson correlation was computed to determine the correlation of direct measures of theory of planned behavior (TPB) with their corresponding indirect measures. Stepwise multiple linear regressions were used to identify variables which were independently contributed to the prediction of institutional delivery intention. First, the effect of direct measures of TPB was examined followed by evaluation of the effect of indirect measures. Secondly, the effects of both direct and indirect measures were examined to determine the predictive power of institutional delivery intention.

Results: Mean score of intention was found to be 10.95 (SD=2.5) (Range of possible score=3 -15). Direct attitude (β=0.27, 95%CI: 0.19-0.35), belief-based attitude (β=0.08, 95%CI: 0.01 -0.16), subjective norm direct (β=0.16, 95%CI: 0.07-0.26), control belief (β=0.18, 95%CI: 0.13 -0.24) and educational status (β=0.32, 95%CI: -0.15 -0.22) were positively predict institutional delivery intention. However, age, occupation and perceived behavioral control were not significantly associated with treatment seeking intention ($p>0.05$).

Conclusion: Attitude, community norms and their perceive ability to have institutional delivery were   significantly and independently predict institutional delivery intention among pregnant women thus, those governmental and non-governmental bodies that are working on institutional delivery should give emphasis on identified variables with special emphasis at grass root level where the community norm has significant influence on mother's behavior.

Magnitude of Adverse Reproductive Health Outcomes and its Correlates with Gender-Based Violence among Married Women in Northwest Ethiopia.

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Background: Adverse reproductive health outcome (unwanted pregnancy, abortion and/or still birth) are a major sexual and reproductive health problems worldwide. This study was done to assess the magnitude of adverse reproductive health outcomes and its correlates with gender-based violence.

Methods: A community-based cross-sectional study was conducted from January to June 2015 using the World Health Organization multi-country and EDHS questionnaire and to measure adverse reproductive health outcome and violence against women. Trained data collectors interviewed 832 married women were selected by systematic random sampling technique in Debre Tabor, Northwest Ethiopia. Epi info version 6.0 for data entry and SPSS version 20 for analysis were used. Data were principally analyzed using logistic regression.

Results: Three hundred eleven (37.4%) of women had experience of at least one type of adverse reproductive health outcomes in their life time, such as unwanted pregnancy (22.2%), abortion (16.8%) and still birth (5.8%). Women who experienced gender-based violence (AOR=1.28; 95%CI:1.08-1.98), Psychological violence (AOR=1.38:95%CI;1.05-2.29), Physical violence (AOR=2.48; 95%CI:1.60-3.85), Sexual violence (AOR=1.31:95%CI:1.01-1.99) were factors associated with an increased risk of adverse reproductive health outcomes. Psychological violence (AOR= 1.94; 95%CI; 1.07-3.50), physical violence (AOR=1.88; 95%CI; 1.13-3.12) and sexual violence (AOR=1.84; 95%CI; 1.17-2.28) were factors associated with an increased risk of unwanted pregnancy. Physical violence (AOR=1.19; 95%CI; 1.12-2.83), sexual violence (AOR=1.80; 95%CI; 1.11-2.93) were factors associated with an increased risk of abortion. Physical violence (AOR= 2.10; 95%CI; 1.86-5.11) was factor associated with an increased risk of still birth.

Conclusions: Adverse reproductive health outcome was a serious problem and gender-based violence led to significantly increased risk of adverse reproductive health outcomes among married women. Multifaceted interventions such as male counseling, increasing awareness on the consequences of GBV will help to reduce adverse reproductive health outcome.

Keywords: Adverse reproductive health outcome, unwanted pregnancy, abortion, still birth Gender-based violence.

Magnitude & Risk Factors of Induced Abortion among Gurage Zone Preparatory Schools Female Students, Southern Region, Ethiopia Cross-Sectional Study, May 2015.

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Induced abortion is one of the greatest human rights dilemmas of our time. Yet, abortion is a very common experience in every culture & society. Approximately 20 million unsafe abortions are performed worldwide every year. From the fragmented studies conducted in Ethiopia, we can see that the prevalence of induced abortion and its negative consequences are increasing from time to time..The purpose of this study was to assess the magnitude and determinants of induced abortion among Gurage zone preparatory schools female students. A descriptive cross sectional study design was employed.

The study population were populations of Gurage zone preparatory school Female students. OF **3960** female students, **404** female **students** were selected by two stage sampling technique of systematic random sampling select schools followed by simple random sampling technique for a girl to be interviewed. The primary data was collected directly from respondents through self administered questionnaires.

The secondary data was collected from the health institutions that are found in each district capitals or town facilities of government and private owned. The result was presented in description, narration, tables & figures. The assessment showed that the zonal preparatory schools girls magnitude of induced abortion was **55(13.6%)**.

The predominant predictors were Parental residence, health education, & alcohol consumption., female students whose parents from family of town residents were protected from induced abortion, accordingly females from rural family sources were more than two times [AOR=2.29, 95%CI (1.10, 4.77)] exposed to abortion. On the other hand, young females with no health information about reproductive health were 6 times [AOR=6.40, 95% CI (3.12, 13.11)] more likely to be exposed to induced abortion than those who had got health education at school. Additionally, students who often consume alcohol were four times [AOR=4.0,95%CI (1.13,14.22)] more exposed to abortion services but those who sometimes consume alcohol were more than three times [AOR: 3.30, 95% CI (1.35,8.06)] more likely to become prone to induced abortion than with no history of alcohol consumption. The health facility data revealed that trends of induced abortion among young age group is increasing in the past two years and the two town administrations named Butajira & Wolkite that covered 67.8% were the most prevalent sites for induced abortion services. Therefore, a remarkable high prevalence of induced abortion was observed among school age female students & youth friendly reproductive health services demand at schools are emerging.

Abs 58

Utilization of Youth Friendly Reproductive Health Services and Associated Factors among Youth in Harar Town, East Ethiopia.

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Background: Youth friendly services are designed to make health services accommodate the unique needs of youths. Nevertheless, knowledge about the level of youth friendly service utilization in developing countries like Ethiopia is limited. This study was aimed to assess the level of utilization of youth friendly reproductive health services and associated factors among youth in Harar Town, Eastern Ethiopia.

Methods: A community based- cross sectional quantitative study design supplemented with qualitative inquiry was used from January 2011 to February 2011. Data were collected using a pretested structured questionnaire from a random sample of 845 youth using a multi-stage cluster random sampling technique. Moreover, qualitative data were collected using in- depth interviews and focus group discussions using an interview guides. Odds ratio along with 95% confidence level was estimated to identify factors associated with utilization of youth friendly reproductive health services using multivariable logistic regression for quantitative data. Level of statistical significance was declared at p-value less than 0.05. In contrast, thematic analysis was used to analyze the qualitative data.

Results: Nearly 64%, of the youth utilized youth friendly reproductive health services at least once at the time of survey. In multivariable logistic regression analysis , using friends[AOR=3.65, 95%CI (1.81,7.32)], health care providers [AOR= 3.27, 95%CI (1.18,9.00)] , and schools [AOR= 1.79 , 95%CI (1.00,3.19) as source of information and having knowledge about the youth friendly services [AOR=2.77,95%CI(1.93,3.96)] were significantly associated with utilization of youth friendly reproductive health services. In contrast, ,being daily laborer and private worker by occupation [AOR= 0.12, 95%CI (0.05, 0.92)] , having negative perception about counseling [AOR= 0.50 , 95%CI (0.31-0.80)] , reproductive health services for youth [AOR= 0 .13, 95% CI (0.04-0.46)] ,and youth friendly service providers [AOR= 0.02, 95%CI (0.08-0.50)] have negatively influenced the utilization of youth friendly reproductive health services.

Conclusion: Utilization of youth friendly reproductive health services is moderate in the study area. Getting youth related services information from different sources and being knowledgeable about the youth friendly services increased the utilization of youth friendly reproductive health services. Efforts should be made by all relevant stakes to create conducive environment through training of youth service providers particularly for those who work in the government institutions and strengthening of awareness creation for youth can increase utilization of youth friendly services.

Abs 59

Risky Sexual Behaviors and Associated Factors among Jiga High School and Preparatory School Students, Amhara Region, Ethiopia.

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Background: Young people constitute a large number of population worldwide, and majority of these population group live in developing countries. They are at high risk of engaging in risky sexual behaviors like early sexual initiation, inconsistence use of condom, multiple sexual partner, and sexual intercourse with commercial sex workers. These risk sexual behaviors predisposes youths to several sexual and reproductive health problems like STIs, HIV, unwanted pregnancy, abortion and its consequences. So, this study was conducted to assess the magnitude of risky sexual behaviors and associated factors among Jiga high school and preparatory school students, North West Ethiopia.

Methodology: Institutional based cross sectional study design was conducted among Jiga town high school and preparatory school students. A total of 311 students were included in the study. Systematic random sampling method was used to select study participants. Data was collected by using self-administered questionnaire. Data was entered using Epi Data version 3.1 and it was exported to SPSS version 22 for further analysis. Descriptive analysis, bivariate and multivariate analysis was also calculated to determine factors associated with risky sexual behavior.

Result: Forty eight (16%) of respondents reported that they had sexual intercourse prior to the data collection period. From those who start sex, 44(14.7%) were involved in risky sexual behavior which could predispose them to sexual and reproductive health problems. More than half, 27(56.3%), of respondents who start sex said that their age at first sexual intercourse was before their eighteenth birthday. The mean age and SD of first sexual initiation was 17.2 years old and 1.35 years respectively. Only 8(16.7%) of respondents who start sex used condom during the first sex, three had sexual intercourse with commercial sex worker (CSW), and 14(29.2%) had multiple sexual. Factors associated with risky sexual behavior among youths include, respondents age of 20 to 23 years old (AOR: 5, 95%CI: 1.59- 15.98); drinking alcohol (AOR: 2.48, 95% CI 1.13-5.41) and having poor knowledge towards HIV/AIDS (AOR: 4.53, 95% CI: 2.06-9.94).

Conclusion: large number of in school youths are involved in risky sexual behaviors like early sexual initiation, having multiple sexual partners, inconsistence use of condom, and having sex with high risk partner (CSWs). Age of respondents, alcohol drinking, and poor knowledge towards HIV/AIDS were factors associated with risky sexual behavior. School and community based programs in reducing substance abuse among youths and increasing their knowledge towards HIV/AIDS is important.

Keywords: Risky sexual behavior; early sexual initiation; condom utilization; multiple sexual partner; youths; high school students; Jiga; Ethiopia

Abs 60

Improving Knowledge on Emergency Contraception among Students of the University of Buea: A Comparison of Health Talk Versus Educational Leaflet.

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Unintended pregnancy is a major public health concern in the world. Emergency Contraception (EC) is one of the modern contraceptive methods which is being used to prevent unintended pregnancy after unprotected sexual intercourse. But it is relatively unknown in our community and knowledge remains the major barrier for its use. The objectives of the study were to assess the knowledge, attitude and practice (KAP) of EC, to assess the effect of health talk versus educational leaflet on EC and to assess the relationship between socio-demographic characteristics with knowledge on EC.

The study was an experimental study that was organized as a cluster randomized control trial. The intervention for the study was health talk versus educational leaflet on EC. Students taking French 102 are participated in the study. The sample size was calculated to be 320. After including all students in a class, 164(50.5%) and 161(49.5%) participated in the health talk and educational leaflet arm respectively before the intervention and 95(48.5%) and 101(51.5%) in the health talk and educational leaflet arm respectively after the intervention.

The data was analyzed using Epi Info version 3.5.4.One hundred and fifty nine (48.9%) of the participants responded they had heard of EC and knowledge about what constitutes EC was low (11.4%). One hundred and sixty three (50.2%) had positive attitude towards EC. However, only 7.7% responded they or their partners had previously used EC. At the end of the study, health talk was found to improve knowledge than educational leaflet.

The difference in increased knowledge was 33.0% ($P<0.001$). Moreover, previous use of EC was associated with knowledge on EC. There was inadequate knowledge, positive attitude and low use of EC and a month after the intervention health talk was found to improve knowledge. Key words: emergency contraception, knowledge, attitude, practice, health talk, educational leaflet, university of Buea.

Maternal Near Miss and Still birth in developing countries: A systematic Review with Meta-analysis.

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Statement of the problem: Maternal near miss during pregnancy and delivery are known to increase the odds of still birth. Although the available few studies suggested the association between maternal near miss and still birth, pooled effect of individual studies is not yet known for developing countries. Hence the aim of the Meta analysis was to quantify the association between maternal near miss and still birth from studies conducted in developing countries.

Methods: Electronic data bases like MEDLINE and Embase were used to search for relevant articles. Observational studies which were published in English language, irrespective of publication status were considered. The methodological quality of the studies included in the current review was done using the Newcastle Ottawa assessment scale and British Sociological Association Medical Sociology Group quality indicators. Pooled estimate along with 95 % CI were calculated using random effect model. I2 statistics were used to test for heterogeneity. Forest plot were used to present findings. Egger's and Begg's test was done to check for presence of publication bias.

Result: Search of electronic data bases identified 265 studies of which five were included for the final analysis. Majority of the studies have a high methodological quality. The result of pooled estimate showed that the odds of still birth was higher in women who developed maternal near miss than those who deliver without complications (Pooled OR =4.67, 95 % CI [2.91-7.47], I2 =85.0 %). Sub group analysis based on the design of the studies indicated that variation in the design was one of the factors responsible for the observed heterogeneity. The presence of publication bias was not observed from Begg's and Egger's test. (Begg's Test p= 0.462 and Egger's test p = 0.637)

Conclusion: The study revealed that the odds of still birth is higher in women who developed maternal near miss complications as compared to women without any complications .Hence this evidence will help policy makers in developing countries to design appropriate interventions that will enhance quality of obstetric care for women during pregnancy, delivery and after delivery so as to save the life of babies born from these women.

Keywords: Still birth, Maternal Near Miss, Developing countries, Systematic review, Meta-analysis

Birth Preparedness and Complication Readiness and Associated factors among women in Wolaita Zone, Southern Ethiopia.

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Background: Maternal health problems are almost impossible to predict and difficult to prevent. Birth preparedness and complication readiness can help to reduce the delays that occur when women experience obstetric complications.

Objectives: This study aimed to assess birth preparedness and complication readiness and associated factors among women who gave birth before 12 months during a survey in Wolaita zone, Southern Ethiopia.

Methodology: The community based cross-sectional study design was conducted in Wolaita zone, Southern Ethiopia, April 2014. All women who gave birth in the last 12 months in randomly selected kebele was the study participant (n=456).Multistage cluster sampling technique was used. Hence, three woredas and one urban administrative town were randomly selected from Wolaita zone. Samples were allocated to each kebeles based on the probability proportion to their population size. Finally, all participants in randomly selected cluster were interviewed until the required sample size was reached. The data was entered in EPI Info version 3.5.3 and then then exported SPSS version 20 for analysis. Then descriptive statistics, binary and multivariate logistic regression model along with 95% confidence interval was used to identify factors associated with birth preparedness. Informed verbal consent was obtained from individual participants. Moreover, privacy of clients was maintained.

Results: Overall, 77(17.3%) of women was prepared for birth and complication readiness. To measure this prevalence, basic elements of birth preparedness like women who identified place of delivery 256(57.7%), saved money for birth 284 (64%), identified skilled provider 49 (11%) and identified mode of transportation 103 (23.2%) were used. Moreover, 220 (49.5%) of women utilized four and more antenatal care services. In regard to factors associated with BPCR, women who visited ANC for four and above (AOR=2.14;95%CI:1.16-3.97), husband educated Secondary & above secondary (AOR=3.89;95%CI:1.44-10.46) and (AOR=14.44;95%CI:3.74-55.77)respectively, women knew at least one danger sign immediately after birth(AOR=10.93; 95%CI :1.24-96.57),health worker advised the women to save money (AOR=5.17; 95%CI:2.58-10.37), health professional advised women about arrangements to get delivery service by health

professional(AOR=4.05; 95%CI:1.93-8.49) were statistically significant with birth preparedness and complication readiness.

Conclusion: This study revealed birth preparedness and complication readiness in Wolaita zone was very low. Therefore, governmental and stake holders in the area should aggressively strengthen antenatal service utilization and create awareness on BPCR. Moreover, health professionals should advise women critically about birth prepare dines and complication readiness.

Keywords: Birth preparedness and complication readiness, Wolaita, Ethiopia

Sero-prevalence and Risk factors of Herpes Simplex Virus-2 among Pregnant Women Attending Antenatal Care at Health Facilities in Wolaita Zone, Ethiopia.

Antehun Alemayehu, MSc in Medical Microbiology, Wolaita Sodo University; Tamrat Abebe, PhD; Adane Mihret, PhD; Feleke Hailemichael, MPH in 2014.

Background: Herpes simplex virus type-2 is the common cause of genital ulcer disease worldwide. Genital herpes infection is a major concern in pregnancy due to the risk of neonatal transmission. The first time infection of the mother at third trimester may lead foetus to severe illness because of lacking of preexisting antibody. The highest risk of intrauterine infection has been observed in pregnant (about 50%) that develop disseminated Herpes simplex virus infections and 90% of those were related to Herpes simplex virus type-2 and the remaining 10% were associated with Herpes simplex virus type-1. Both primary and recurrent maternal infection is the character of Herpes simplex virus type-2 infection and result in congenital disease, even if the risk after recurrent infection is small. Moreover periodic reactivation is also the common character of Herpes simplex virus type-2 infection; it favors HIV transmission by disrupting the mucosal barrier and inflammatory changes, which increases recruitment of HIV target cells to the ulcer.

Objective: To assess the sero-prevalence and risk factors of herpes simplex virus type-2 infection in pregnant women attending antenatal care in Wolaita zone, Southern Ethiopia.

Method: Cross-sectional survey was conducted from December 2013 to September 2014 in randomly selected 28 health centers in Wolaita zone, Southern Ethiopia. Blood was collected from 252 pregnant women after taking written consent. Sera were tested using HerpeSelect-2 ELISA IgG. Data entry and analysis was done using Epi info 3.5.4 and SPSS 21.00 respectively. Binary logistic regression was performed to identify the risk factors associated with HSV-2 sero-positivity. P-values less than 0.05 were considered statistically significant.

Results: The overall sero-prevalence of HSV-2 infection was 32.1% (81/252) among pregnant women in Wolaita zone. Independent predictors of HSV-2 infection includes daily laborer and commercial sex worker (AOR 1.293, 95% CI: 1.033-1.739; p=0.022), having one sexual partners (AOR 0.476, 95% CI: 0 .250 -0.904; p=0.023), history of STDs (AOR 2.822, 95% CI: 1.50-5.289; p=0.001) and use of contraceptive (AOR2.602, 95% CI: 1.407-4.812; p=0.002).

Conclusion: Overall sero-prevalence of HSV-2 infection among pregnant women of Wolaita Zone is high. The generation of awareness among high risk groups like women who have history of STD should be tested and treated early. Strengthening the quality of health service delivery and expansion of health service coverage is mandatory.

Keywords: Herpes simplex virus type-2, pregnant women, genital herpes.

Cause-Specific Mortality Trends in Gilgel Gibe Field Research Center, South-West Ethiopia: Using Verbal Autopsy.

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Background: Despite the need of reliable information on causes of death for health planning and evidence based practices, majority of the developing countries do not have vital events registration systems. For countries currently without adequate mortality reporting systems, the practical alternative of capturing data on causes of death is relying on verbal autopsy (VA) methods of data collection and assigning causes of deaths by reviewer physicians. The objective of this study was to describe cause-specific mortality trends based on verbal autopsies conducted on all deaths in Gilgel-Gibe Field Research Center (GGFRC), South-west Ethiopia.

Materials and Methods: The study used population-based mortality data collected by a demographic surveillance system in 8 rural and 3 small urban areas in four districts of Jimma zone, south-west Ethiopia. Deaths and person years of observation were aggregated for individuals between 11 September 2007 and 10 September 2012. In order to gather detailed information about signs and symptoms of the deceased, trained interviewers administer verbal autopsy questionnaire to family members after the event by visiting households; Cause of death was assigned by physicians review and coded using ICD-10. Two physicians independently reviewing the case in case of disagreement the third physician is used as a tight breaker and if all disagree on the case it will be coded as undetermined. Descriptive analysis was done using STATA version 10 for windows to compute the results by person, place and time.

Results: During the five years period a total of 2171 deaths were observed and cause of death assigned for all deaths. According to the cause-specific mortality fractions (CSMF) the top three cause of deaths were parasitic and infectious diseases (42.3%), perinatal cause of death accounted 23% and malnutrition (8%) . Over the course of the five years of observation, the highest overall mortality rate was observed in 2008/09 (10.9 deaths per 1000 pyrs) and the lowest was in 2011/12 (7 deaths per 1000 pyrs).

Conclusion & recommendation: Communicable diseases particularly malaria and tuberculosis (TB) continued to be the most killers among children and adults in the study community. Most

of the neonates died of birth asphyxia and prematurity. Most of these deaths can be prevented by raising the awareness of the community pertaining prevention and control of diseases, heath seeking behaviour, ensuring health service utilization of the community including institutional delivery.

Measuring trends in cause specific mortality using verbal autopsy methods is a good strategy in order to provide timely information for policy makers in resource allocation for appropriate health interventions.

Keywords: Verbal autopsy, Mortality trends, Southwest Ethiopia.

Annual Program Trend Analysis and Outcome Monitoring Using Random Follow-up Visits: The Experience of Integrated Family Health Program (IFHP) in Ethiopia.

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Background: Monitoring of outcome indicators usually requires extensive population based surveys which are time taking and expensive to administer. The Integrated Family Health Program (IFHP) institutionalized an annual household level survey using random follow up visit as an integral part of its routine activities without major resource and time implications. IFHP is a USAID funded program that has been managed by Pathfinder International and John Snow, Inc since 2008. IFHP has been providing capacity building support to the health sector in 300 woredas of six regions (Amhara, Oromia, SNNP, Tigray, Benishangul Gumuz and Somali). IFHP focus on Family planning/ maternal, Newborn and child health with the objective of improved family health. The aim of this program documentation is to share IFHP's experience in generating unbiased and representative household level strategic information using random sampling for monitoring program outcome level indicator on annual bases.

Methods. Every year a fresh list of target Woredas, Health Centers (HCs) and Health Posts (HPs) in program areas prepared for sampling frame. From the list 128 Woredas selected every year using systematic sampling techniques followed by two HCs from each selected woreda and two HPs from each selected HC using simple random sampling. The Keble in which the selected HP found was automatically selected for the study. Every year 2,560 households selected using a random walk technique in which one woman of 15-45 years and one under five children were selected using random numbers. The same instruments and period (Jan-Mar) were used for every year. Access database for data entry and SPSS software for data analysis were used.

Results. Five rounds of household level surveys were conducted from 2011 to 2015 for most of the program indicators which helped the program to assess changes in four years period. Most of the outcome level indicators showed an increasing trend. Modern contraceptive acceptance rate was 41.5%, 51.6%, 51.8, 53.4% and 53.8% in 2011, 2012, 2013, 2014 and 2015, respectively, which showed an average annual increase of 3.1% point in the four years period. Fully immunization coverage, exclusive breast feeding and Vit A uptake were 77.0%, 57.7% and 86.5%, respectively, in 2011 and showed an average annual increase of 2.1%, 5.8% and 1.5% points, respectively. Health seeking behavior for sick children was 56.6% in 2011 and increased to 67.6% in 2015 with an average annual increase of 2.8% point. Health facility delivery was measured since 2012, and it was 17.9%, 31.6%, 58.5% and 69.0% in 2012, 2013, 2014 and 2015, respectively, which showed an

average annual increase of 12.8% point. The annual trend showed variations among the outcome indicators and target regions; hence actions have been taken to insure equity by re-planning. The findings were used for further operations research agenda to generate additional data for action. Program staffs showed interest in producing such data for decision making.

Conclusion. Conducting annual household survey using random sampling as an integral part of routine activities helped to produce unbiased estimates for outcome level indicator that can be used for adjusting program directions without waiting for mid or end term project evaluation. Embedding outcome monitoring and evaluation with routine activities will have a great cost saving advantage which increased value for money compared to doing separate periodical surveys by external bodies.

Keywords: Outcome indicator, random follow up, random walk, unbiased estimate, value for money.

Does ISO 14001 Accreditation Reduces Environmental Impact of Industries: A Case Study in Addis Ababa, Ethiopia.

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Industrial effluents are one of the leading causes of pollution worldwide. This problem is worse in developing countries like Ethiopia. It is estimated that, 90% of the industries in the capital are discharging their effluents without any treatment. To control the impacts of industrial effluents, it is mandatory to have treatment plants with optimum capacity and efficiency.

Hence, this study was designed to assess the performance of effluent treatment plants of ISO 14001 accredited industries in Addis Ababa, Ethiopia. Parameters analysed from the effluent sample include, PH, temperature, DO, turbidity, BOD_5, COD, TSS, Soluble reactive phosphorus, Dissolved inorganic Nitrogen, Chromate, Chloride, and sulphide.

Effluent samples were collected from 2 tanneries and 2 breweries and random sampling technique was used after forming strata to select these industries. Sampling was done twice to rule out variations on the quality of effluent through time. In total 224 tests were conducted in Jimma University and Geological Survey laboratory units in Addis Ababa, Ethiopia. All tests were conducted by following scientific procedures from standard methods.

The result of the study showed that the BOD_5 removal efficiency for the accredited tannery (29.6%) was found within the recommended limit (25-35%) but the quality of effluent released in to the river couldn't comply the national discharge limit.

This value was found below the standard for non-accredited tanneries (16.6%). There was also a difference in the removal efficiency of BOD_5 for accredited and non-accredited breweries. Regarding Chromium treatment, both tanneries were able to remove relatively in a better efficiency (81.5% and 77% for accredited and non-accredited tanneries respectively) due to the installation of chromium recovery plant.

Regarding the overall efficiency of the treatment plants there was no any significant difference in the performance of effluent treatment for accredited and non-accredited industries (Mann-Whitney U Test, p-vale, > 0.05). Therefore, accreditation should consider regular follow up and monitoring to know whether accredited industries are still comply with principle of environmental management system. Moreover, accredited Industries are also required to upgrade their primary treatment system in to advanced treatment level to have a better removal efficiency and produce effluent with a quality that can't pose severe environmental consequences.

Assessment of Occupational Injuries among Addis Ababa City Municipal Solid Waste Collectors.

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Background: Collection of household waste is a job which requires repeated heavy physical activities such as lifting, carrying, pulling, and pushing. Like many developing countries, in Ethiopia municipal solid waste is collected manually. Therefore, this study is aimed to assess the extent of occupational injuries and associated factors among solid waste collectors in Addis Ababa City.

Methods: A cross-sectional study was conducted among 876 respondents sampled from 92 unions. A pre-tested structured questionnaire and observation check list were used to collect data. Crude odds ratio with 95% CI was computed to see the presence of association between selected independent variables and occupational injury. Multivariate logistic regression analysis was made to see the relative effect of independent variable on the dependent variable by controlling the effect of other variables. To maintain stability, only variables that have a p-value less than 0.30 in the binary logistic regression analysis were kept in the subsequent model. Enter method was used hierarchically.

Results: The response rate of this study was 97.9%. Female respondents accounted 71.2%. The median age of the study subjects was 33 year (with 52 inter quartile range). The overall occupational injury prevalence rate in the last 12 months was 383 (43.7%). Utilization of personal protective devices and family size in the household were statistically associated with injury. As compared to workers who used personal protective equipment while being on duty, odds of injury among workers not used personal protective equipment were 2.62 higher (AOR = 2.62, 95% CI: 1.48-4.63). As compared to those who had five and more children, odds of injuries among those who had 3-4 children was reduced by half (AOR = 0.52, 95% CI: 0.30-0.93).

Conclusion: The extent of occupational injuries among Addis Ababa city solid waste collectors is present in a level that needs immediate public health action. Implementation of basic occupational health and safety services including training on occupational health and safety, ensuring the provision and use of personal protective devices are highly advisable.

Environmental and Host Related Determinants of Tuberculosis at Metema Hospital, North west Ethiopia Environmental and Host Related Determinants of Tuberculosis: Ethiopia a Case Control Study Design.

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Background: Each year, one third of the world's population is estimated to be infected with tuberculosis (TB). Globally in 2011, there were an estimated 8.7 million TB cases that resulted in 1.4 million deaths. In Ethiopia, TB is the leading cause of morbidity and the third most common cause of hospital admission. The aim of this study is to assess environmental and host-related determinants of TB in Metema district, north-west Ethiopia.

Methods: A community-based unmatched case-control study was conducted from March 12 to April 5, 2013. The study population included 655 subjects (218 cases and 437 controls in a ratio of 1:2). Cases were TB patients selected from a total of 475 cases registered and treated from March 2012 to February 2013 at the Metema District Hospital DOTS (direct observation therapy, short-course) clinic and selected randomly using a lottery method. Controls were people who had had no productive cough for at least 2 weeks previously and were selected from the community.

Results: A total of 655 respondents (218 cases and 437 controls) participated in the study. In multivariate analysis, being illiterate (adjusted odds ratio [AOR] 3.65, 95% confidence interval [CI] 2.31–5.76), households containing more than four family members (AOR 3.09, 95% CI 2.07–4.61), living space ,4 m^2 per person (AOR 3.11, 95% CI 2.09–4.63), a no separated kitchen (AOR 3.27, 95% CI 1.99–5.35), history of contact with a TB patient (AOR 2.05, 95% CI 1.35–3.12), a house with no ceiling (AOR 1.46, 95% CI 1.07–2.21), and absence of windows (AOR 4.42, 95% CI 2.46–7.95) were independently associated with the development of TB.

Conclusion: This study identified that the number of family members in the household, educational status, room space per person, history of contact with a TB patient, availability and number of windows, location of kitchen facilities within the house, and whether or not the house had a ceiling were independently associated with contracting TB. Every community should construct houses with the kitchen separated from the main living room, and include a ceiling and more than one window. Cigarette smoking should be avoided since this also contributed to the risk of transmission of TB. Further research focusing on confection with human immunodeficiency virus, helminthes burden, and malnutrition is important for the control and prevention of TB.

Keywords: determinants, tuberculosis, Metema district, north-west Ethiopia

The Exposure Rate to Hepatitis B and C Viruses among Medical Waste Handlers in Three Government Hospitals, Southern Ethiopia.

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Introduction: Exposure to hepatitis B virus (HBV) and hepatitis C virus (HCV) is among the major occupational hazards to health care workers (HCW) and medical waste handlers (MWHs) in most developing nations where there is lack of policies for pre-employment screening and interventions against these infections. The aim of this study was to assess the exposure rate to HBV and HCV infections and potential risk factors among medical waste handlers at three government hospitals in southern Ethiopia.

Method: A cross-sectional study was conducted from December, 2014 to January, 2015. A total of 152 MWHs and 82 non-medical waste handlers' (NMWHs) were studied. Data on socio-demography and possible risk factors were collected using pretested questionnaire. Serum samples were collected from the study participants and screened for HBsAg, anti-HBc and anti-HCV markers using rapid immune-chromatography assay. While, MWHs were also screened for anti-HBs marker.

Result: The respective prevalence of HBsAg, anti-HBc and anti-HCV were 1.3, 39.5 and 0.7% in MWHs compared to a respective rate 2.4, 17.1, and 1.2% in NMWHs. Of all MWHs, 58.6% were still susceptible to HBV infection. There was significant difference in rate of lifetime exposure to HBV infection in MWHs compared with NMWHs [OR =3.168; 95%CI =1.636-6.134]. However, no significant rate difference was observed with respect to current HBV infection [OR = 0.533; 95%CI = 0.074-3.858] or anti-HCV status [OR = 0.536; 95%CI = 0.033-8.689]. Incident of sharp injury and mucosal exposure in the last 12 months were reported in a respective 47.4 and 11.2% of MWHs. Age older than 40 years and MWHs working in a hospital laundry were independent predictors of lifetime exposure to HBV infection. Eleven (7.2%) respondents were vaccinated against HBV; 3(27.3%) of which developed protective immunity.

Conclusion: Lifetime exposure to HBV infection was significantly higher in MWHs as compared to NMWHs. As most of the MWHs were not vaccinated against HBV infection they are still susceptible and at higher risk of contracting the infection. Screening upon hire followed by vaccination of MWHs is recommended to reduce the transmission of HBV.

Keywords: Hepatitis B virus; hepatitis C virus; Medical waste handlers; Vaccination

Latrine Ownership, Use and Socio-demographic Correlates: A cross sectional study conducted in Rural Becho District of Ethiopia.

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Background: In developing countries lack of sanitation is a major public health problem mainly linked with open defecation that leads to health hazards. Ethiopia carries a high burden of disease due to poor sanitation.

Objective: To determine levels of ownership and use of private latrine, and to explore the characteristics of latrine owners and non owners in rural communities of Becho district of Ethiopia.

Methods: Cross-sectional community based baseline survey of latrine ownership and its use was conducted in the rural Becho district of Ethiopia from May 1 to 30, 2015. Randomly selected 1047 household heads were interviewed using a structured and pre-tested questionnaire. Data collectors verified latrine ownership by observation. Manually cleaned data was computerized using Epinfo software version 3.5.4 and SPSS version 20 was used for data analysis. Logistic regression analysis was used to assess association between binary outcome variables and potential correlates. Results are reported as being statistically significant whenever p-value is less than 5%

Results: Among the total respondents 73% own some kind of private latrine, 4.4% use improved latrine, 25.7% practice open defecation and 8% have facility for hand washing. Among those who own latrine and have under-five children, 66% reported disposing child feces inside latrine. Latrine ownership is positively associated with having a larger family size (AOR = 1.6; 95%CI: 1.2- 2.3), having children in school (AOR=1.8; 95% CI: 1.3-2.6)), having high school or college level of education (AOR=2.5; 95% CI 1.06-6.06) or having primary school level of education (AOR = 1.7; 95%CI: 1.10-2.75) compared to being illiterate and with having a family member that participated in a community led total sanitation mobilization(CLTSH) event (AOR 3.20, 95%CI 1.81- 5.67).

Conclusions: The observed low level of improved sanitation and hand washing facility, and large number of respondents practicing open defecation need immediate intervention. Persuasive intervention like CLTSH could be more effective behavior change approach on sanitation and hygiene

Determinant of Timely Initiation of Complementary Feeding among Mothers of Children Aged 6 to 23 Months in Robe Town, Ethiopia.

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Background: Early introduction of complementary feeds before the age of six months can lead to displacement of breast milk and increased risk of infections such as diarrhea, which further contributes to weight loss and malnutrition. However, little is known about determinants of timely initiation of complementary feeding in Ethiopia. Therefore, the aim of this study was to assess determinants of timely initiation of complementary feeding among mothers of children aged 6 to 23 months in Robe town, Ethiopia

Methods: A community based cross sectional study was employed in Robe town, Oromia region, Ethiopia from May 18-27, 2015. Single population proportion formula was used to determine the sample size. After proportionally allocating the sample size for each kebele, systematic sampling was employed to select the study subjects. A pretest was done on 5% of the calculated sample in Goba town which is located 14 km away from Robe town. The data were analyzed using Statistical Package for Social Science (SPSS) version 21.0. Descriptive statistics as well as binary and multivariable logistic regression analysis was computed to identify determinant of timely initiation of complementary feeding.

Results: The prevalence of timely initiation of complementary feeding in the study area was 60% (95% CI: 55.3, 64.7). Variables that have statistically significant association were antenatal Care follow up (AOR=3.24, 95% CI= 1.38, 7.62), postnatal care follow up (AOR=1.80, 95 CI= 1.14, 2.83), having 4-6 number of family size (AOR=2.02, 95 CI= 1.01, 4.05) and hearing about complementary feeding (AOR=1.93, 95% CI=1.10, 3.39)

Conclusions: Nearly two-third of mothers initiated complementary feeding timely. Antenatal care, postnatal care, family size and hearing about complementary feeding were determinants of timely initiation of complementary feeding among children aged 6 to 23 months in Robe town. Further effort should be made to help all mothers start complementary feeding on time. Since antenatal care and postnatal care were determinant of timely initiation of complementary feeding, its utilization should be promoted.

Keywords: Timely initiation, complimentary feeding, Oromia region, Ethiopia.

Predictors of Nutritional Status in Adolescent School Girls in South West Ethiopia.

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Background: Adolescence is the period of transition between childhood and adulthood which is characterized by the growth spurt. Because of physical and psychosocial development, the total nutrient needs are higher during adolescence than any other time in the Lifecycle. Any nutritional deficiency experienced during this critical period of life can have long lasting effect on the future health of the individual and also her offspring.

Objectives: To assess the predictors of nutritional status in school girls in south west Ethiopia.

Methods: A cross sectional study was conducted using a multistage sampling technique and eight hundred and twenty school going adolescent girls were selected from southwest zones of South west Ethiopia. Twelve schools were randomly selected and allocation of study participant was made proportional to number of student in the classes. The selected subjects were classified into three groups based on their grades such as primary junior and high school according to educational system of Ethiopia. By using sampling frame based on e schools roster, girls were selected according to the definitions of adolescent by World Health Organization (WHO). Interviewer administered pre-tested structured questionnaire was used to collect the data on anthropometric measurements. An UNICEF Seca Electronic weight Scale and portable plastic height measuring instrument was used for obtaining anthropometric data immediately after face-to-face interview). The data were cleaned and analyzed using SPSS version 20. An anthropometric measure was converted to the indices of nutritional status, Z-scores of height for age and BMI for age using WHO AnthroPlus version 1.0.3 software. Stepwise multivariable linear regression analysis was used to identify potential predictors of nutritional status (BMI-for- age Z score and height for age Z score). All statistical significances were declared at p-value less than 0.05.

Result: The mean (±SD) of height-for-age z scores (HAZ) and body mass index for age z-score (BAZ) of the participants were -0.62(±0.88) z-score, and -0.41(±0.99) respectively. Residence, regularity of breakfast, No episode of illness in the preceding one month to interview, fuels used for cooking in the household, hand-washing habit after toilet use, time spent on sedentary activities, consumption of sweet food items, consumption of cereal, mothers' occupation were significant predictors (p<0.05).

Conclusions: Over nutrition is not the major problem of female adolescents in the study area. More attention needs to be given to the regular consumption of breakfast, washing hand after toilet use and preparing separate kitchen for cooking. In this community it is necessary to maintain healthy eating practices to achieve desired nutritional status of the adolescents.

Keywords: Adolescent school girls, Nutritional status.

Modeling the Predictor Factors of Household Food Insecurity Using Ordinal Logistic Regression Approach.

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Background: Food insecurity is term used to describe households have not available and access to sufficient quality and quantity of food. Of the four dimensions of food insecurity both food availability and accessibility are the bases and are equally important since, food is physically available but households lack adequate access to the food, similarly, if households have adequate potential access to food but food is not physically available, then food consumption will be inadequate, precipitating food insecurity. Accessibility has addressed by different researchers but limited on availability.

Objective: This study has been an attempt to model the predictor factors of household food insecurity in terms of food availability dimension using ordinal logistic regression with the hope that the results would contribute to existing knowledge.

Method: The target group for the study was households' who are farmers. Multistage sampling was used to sample those respondents from the population of households in South Wollo Zone. Three Woredas were selected and from each Woredas two Kebeles were selected using cluster sampling. A sample of 671 was determined and allocated for each Woredas and then Kebeles based on proportional allocation. These respondents were selected using simple random sampling. Data were obtained through questionnaire method that covers various parts related to food insecurity from May to June, 2014. Quartile score were used to determine household food security status into four statuses namely chronically food insecure, mildly food in-secured, moderately food in-secured or food secured. Ordinal logistic regression model with cumulative logits were used to select the potential determinant factors of food insecurity.

Result: The quartile score revealed that, of the total respondents, 6% of the households were chronically food insecure, 34% were mildly food in-secured, 40% were moderately food in-secured, and 20% were food secured. Among the proposed determinant factors, household head education level, study sites, small farm size, less fertility farm lands, small cultivation time, shortage of rain fall, disease of the harvest, price increase of the crops, and hot weathering condition were found significantly determinant factors for households food insecurity for being chronically food insecure, mildly food in-secured, or moderately food in-secured.

Conclusion and Recommendation: In this study the proportion of food insecurity was found to be better than the previous study. On the other hand the problem among our respondents was comparable to that reported from other low-income countries. The study findings also suggest that in selecting priority intervention areas, the food security strategy should consider statistically significant variables as the most important areas. Similar studies in the future need to consider predictors in addition to those considered in this study and assess stability of food availability over time using longitudinal data.

Key words: Food Availability, Chronically food insecure, quartile score, cumulative logit

Dietary Diversity and Associated Factors among Rural Households, South Gondar Zone, Northwest Ethiopia.

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Statement of problem: Dietary diversity refers increasing variety of foods across and within the food groups. It is sever problem among poor populations in developing world. It is true that dietary diversity is extremely low in Ethiopian children, but there are some/or little available data among rural households.

Objective: The aim of this study was to assess dietary diversity and determinant factors among rural households.

Methods: Community based cross-sectional study was conducted. Eight hundred sixteen rural households were involved in the Study. Pre-test was given for 5% household members responsible for family food preparation. Data was entered and cleaned in Epi info soft-ware then transferred, and analyzed using SPSS version 20 soft-ware. Descriptive statistics; frequency, proportions and charts were used to explore the data. Logistic regression was used at 95% CI and odds ratio were presented to identify associated factors and to assess the strength of the association. For all statistical significance tests, the cut- off value set was $p \leq 0.05$.

Result: From total study participants only 16.2% had high dietary diversity which include 7and more food groups in their diets during the preceding24 hours. About 83.8%of participants had inadequate household dietary diversity. Food exchange from the market was found to have positively associated with dietary diversity. Respondents who exchanged foods were 2.2 times (95%CI: 1.074, 3.84, 4.561) more likely to have good dietary diversity practice than those had not food exchange. There was also significant association between variables such as' radio, mobile, owner of bank account and smaller animals like hen.

Conclusion: House hold dietary diversity was low in the study area, Mobile, radio, bank account/ saving, small animal ownership and exchange foods at market were found to be major determinants of household dietary diversity.

Recommendation: Nutrition education through local media, saving, food exchange and rearing small animals should be major interventions to improve household dietary diversity.

Abs 75

Dietary Diversity Feeding Practice and Determinants among Children Aged 6-23 Months in Kemba Woreda, Southern Ethiopia Implication for Public Health Intervention.

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Background: Dietary diversity has been recognized early by nutritionists as a key element of high quality diets. Increasing the variety of foods across and within food groups is recommended in most dietary guidelines internationally and it is associated with overall quality and nutrient adequacy of the diet in low-income countries including Ethiopia.

Objective: To assess dietary diversity feeding practice and associated factors among 6-23 months young child in Kamba Woreda 2014/15.

Methods: Community-based cross-sectional study was conducted on mothers who had young child from 6 to 23 months in Kamba Woreda. Frequency and cross tabulation was conducted to describe relevant variables in relation to the outcome variables; multivariate logistic regression analysis was conducted by SPSS version 20 to identify significant predictors based on p-value less than 0.05 with 95% confidence level.

Results: Of the interviewed mothers who had a child aged 6–23 months 131 (23.3%) fed their child four or more varieties of foods from seven food groups and the rest 431(76.7%) fed <3 food items within 24 hours. The dominant food groups they fed their child were grain and legumes but they had low practice of animal source food and vitamin source. After conducting multivariate logistic regressions analysis place of delivery, those who gave birth at Health facility Adjusted odd ratio 4.45(2.08-9.54),Growth monitoring practice in health facility 2.28 (1.33-3.89), those who has access to cow milk 2.01(1.19-3.37), and those who work in home as housewives 2.50(1.23-4.93) were significant identified factors for minimum dietary diversity feeding practice.

Conclusion and Recommendation: Global infant and young child feeding practice guide line is being implemented in Ethiopia for more than a decade; however, dietary diversity feeding practice of mothers has been poor in the present study site. Focusing on appropriate Behavioral Change Communication (BCC) and Attitude Change Communication (ACC) platforms should be developed and messages disseminated to the target audience via different media to enhance dietary diversity feeding practice for young child in this critical window period. Appropriate public health messages should emphasize to improve dietary diversity in selective food items by mass media spots. Integrating agricultural sectors with health sectors is important to support the family to grow vegetables, fruits and rare animals to improve dietary diversity.

Keywords: Dietary diversity, feeding practice, Southern Ethiopia

Abs 76

Association of Fasting Animal Source Foods with Metabolic Syndrome and Body Composition among Employees of Jimma University.

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Background: Metabolic syndrome is a multifaceted clinical entity resulting from the interaction of genetic, hormonal, and lifestyle factors. Over the past two decades, the number of people diagnosed with the syndrome has steadily increased and is associated with the global epidemic of obesity and diabetes. It is defined by a combination of raised blood pressure, dyslipidemia, raised fasting glucose and central obesity are the main features of the syndrome's, as defined by the International Diabetes Federation (IDF). The majors' cause of this syndrome is incriminated to be consumption of saturated fat from animal source foods. Many studies all over the world have shown that avoiding animal source foods and relying on vegetarian diets is associated with lower risk of metabolic syndrome. In Ethiopia Orthodox Christians avoid animal source food strictly during the lent as religious requirement. But, there is no study that evaluated the effect it on metabolic syndrome and body composition.

Objective: The main objective of this study is to assess the association of fasting animal source foods with metabolic syndrome and body composition of Jimma university workers
.

Methods: A comparative cross-sectional study was carried out among 609 employees of Jimma University (JU) from March to April 2015using the Stepwise approach of the World Health Organization (WHO). The data were entered into EPI data version 3.1 and analyzed using SPSS for Windows, version 20.0; SPSS (Illinoise, Chicago,). Both descriptive and multivariable logistic and linear regression models was used to compare markers of metabolic syndrome and body fat percent by fasting status after adjusting for various variables.

Results: Out of the total of 609 participate in the study 569 underwent all the study components giving a response rate of 93.4%. There was significant difference (P<0.001) in metabolic syndrome between fasters of ASF 46(24.6%) and non-fasters 112 (29.3%). Study participants who consume ASF were nearly 2 times more likely have metabolic syndromes than those individuals who don't consume animal source (P= 0.020). On a multivariable logistic regression analyses, after adjusting for other variables, ASF fasting, age, sex and wealth index were significantly associated with metabolic syndrome. On multivariable logistic regression, being male (AOR=2.188[95% CI: 1.333, 3.589]), Age group 31-40 years (AOR=3.991 [95% CI: 2.190, 7.273]), age group >40 years (AOR=8.566 [95% CI: 4.557, 16.105]). Not fasting animal source foods (AOR=1.984 [95% CI: 1.113, 3.537]), Consumption of solidified vegetable oil (AOR=2.121 [95% CI:

1.157, 3.889]) and drinking alcohol during the last 12 months (AOR=2.319 [95% CI: 1.356, 3.964]) were significant independent predictors of metabolic syndrome.On a multivariable linear regression, fasting animal source foods was negatively associated with fat mass percent (β= -2.226, P=0.005). Similarly, being male decreased fat mass percent by 13.320 (β=- 13.320, P<0.001). On the contrary, an increase in age (β=0.376, P<0.0001) and wealth index (β=2.044, P<0.0001) were positively associated with increase in fat mass percent. For an increase of age by one year fat mass percent increased by 0.376. Similarly, for an increase in wealth index fat mass percent increased by 2.044

Conclusion and Recommendations: The prevalence of metabolic syndrome was high among non-faster ASF as compared to fasters. Behavior change communications on life style modifications including reduction of ASF consumption and alcohol consumption is very critical to curb the consequences of metabolic syndrome and consequent chronic degenerative diseases.

Keywords: Fasting, lipid profile, metabolic syndrome, Lipoproteins, body composition

Prevalence of Zinc Deficiency and its Association with Dietary, Serum Albumin and Intestinal Parasitic Infection among Pregnant Women Attending Antenatal Care at the University of Gondar Hospital, Gondar, Northwest Ethiopia.

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Background: zinc deficiency during pregnancy has far-reaching consequences on both mother and fetus and subsequent child survival. However, data on the prevalence and determinants of zinc deficiency among pregnant women are scanty and inconclusive. The aim of this study was to assess the prevalence of zinc deficiency and associated factors among pregnant women attending antenatal care at the University of Gondar Hospital, Northwest Ethiopia.

Methods: Institution based cross-sectional study was conducted at the University of Gondar Hospital from March to May, 2014. A total of 377 pregnant women were selected by systematic sampling technique. Data on socio-demographic factors, reproductive history and nutrition related factors were collected using a structured questionnaire. Blood sample were collected to analyze biochemical indicators. Statistical analysis was done using logistic regression analysis method. P-value < 0.05 at 95% confidence interval was considered as statistically significance.

Results: The prevalence of zinc deficiency among pregnant women was 57.4% (95% CI: 52.2%–62.9%). Living in rural area [AOR = 1.92; 95% CI (1.04, 3.56)], too close birth [AOR=3.97;95% (1.30, 12.13)], low intakes of diet of animal origin [AOR = 2.29; 95% CI (1.35, 3.89)], inadequate dietary diversity [AOR = 2.09; 95% CI (1.24,3.51)], lack of nutrition education [AOR =1.78; 95% CI (1.10,2.86)], low serum albumin [AOR = 2.55; 95% CI (1.40,4.63)] and intestinal parasitic infection [AOR = 2.60; 95% CI (1.49,4.54)] were significantly associated with zinc deficiency.

Conclusion and Recommendation: Zinc deficiency is of public health concern in the study area. To combat the problems, nutrition education to increase knowledge as well as practices concerning the consumption of zinc rich foods and optimal dietary diversity, use of home based phytate reduction techniques and agricultural based approaches should be considered.

Keywords: Zinc deficiency, pregnant women, Gondar.

Household Food Insecurity and Associated Factors among Household Heads in Areka Town, Southern Ethiopia.

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Background: Food insecurity exists when all people, at all times, do not have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. However, there is limited evidence on urban food security status unlike rural settings in low-income countries like Ethiopia.

Objective: To assess the Prevalence of household food insecurity and associated factors among households in Areka Town from March /2015 to April /2015.

Methods: A community based cross-sectional study design was used among randomly selected 309 urban household heads. A Pretested structured questionnaire was used to interview household heads. Data were entered onto Epi-Info version 3.5.3 and exported to SPSS version 20.0 for cleaning and further analysis. Binary logistic regression analyses were used to assess the association between each independent variable and the outcome variable. A Multivariable logistic regression analysis was used to control for all possible confounders. Odds ratio along with 95% CI was estimated to identify factors associated with household food insecurity. Level of statistical significance was declared at p- value less than 0.05.

Results: The prevalence of household food insecurity was [69.6 %, (95% CI = 64.1, 75.2)]. Household food insecurity was categorized as mild , moderate , and severe among 34.3% , (95% CI = 29.4,39.8), 31.7% , (95% CI = 26.1,37.0) , and 3.6% , (95% CI = 1.9,5.8) of the households respectively. Being poor household [(AOR = 3.13, 95% CI = (1.42, 6.91), lack of formal education among household heads [(AOR = 4.70, 95% CI = (1.82, 12.12)] , households whose monthly food expense was ≤ 4900 ETB [(AOR =6.9 , 95% CI =1.45, 32.9)] and between 500- 1499 ETB [(AOR = 2.70, 95% CI =1.48, 4.91)] , and household head 's age ≥ 50 years [(AOR = 2.11, 95% CI = (1.12, 3.95)} were significantly associated with household food insecurity.

Conclusion: Household food insecurity was high in the study area. Household head's illiteracy and being in, the higher age, low household's socio-economic position and few monthly expense on food items have positively influenced household food insecurity in the study area. Thus, special attention is needed to improve food security status of the urban poor through feasible strategies by relevant actors working in the area of ensuring household food security.

Keywords: Areka, Associated factors, Ethiopia, household food insecurity.

Factors Associated with Overweight and Obesity among First Cycle Primary School Children in Diredawa Town, Eastern Ethiopia.

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Introduction: Childhood over-nutrition (overweight and obesity) has become a major public health concern in many industrialized countries and is emerging as a threat to the public health in low- income – countries. However, there is limited evidence on the extent of over-nutrition among first cycle primary school children in developing countries like Ethiopia.

Objective: The main objective of this study was to assess the magnitude of over-nutrition and associated factors among first cycle primary school children in DireDawa Town, East Ethiopia from February 25 to March 14/2014.

Methods: A cross-sectional study was conducted on a total of 484 randomly selected first cycle primary school children. A structured questionnaire, portable electronic weight scale and commercial standiometer were used to collect the data. Over-nutrition was determined using Body Mass Index (BMI) - for-age Z-scores (BAZ) based on World Health Organization (WHO) cut offs for children aged 5-19 years , in which BAZ > +1 Standard Deviation (SD) to $\leq$+2SD was considered as overweight and >+2SD as obese. Descriptive, bivariate, and multivariable analyses were used to analyze the data. Odds ratios along with 95% CI was estimated to identify factors associated with over-nutrition using multivariable logistic regression. The level of statistical significance was declared at p- value less than 0.05.

Results: The overall magnitude of over-nutrition was 20% ; 95%CI (16.4 , 23.8] of which overweight was 15.5% ; 95% CI (11.9 , 19.3) and obesity was 4.5% , 95% CI (2.7 , 6.5) . Children who learned at private schools were 2 times more likely to be over-nourished compared with those who learned at public schools [(AOR=2.5, 95%CI= (1.21-5.09)]. Children who often ate sweets were 3 times more likely to be over-nurished compared with those who seldom ate sweets [(AOR=3.56, 95% CI= (1.78 - 7.10)]. Moreover, children who did not participate in sport or physical activity were 3 times more likely to be overnourished compared with their counterparts [(AOR=3.47, 95%CI= (1.6-7.53)]. children who used to watch Television / play video games > 2 hours per day were 2 times more likely be overonurished compared with their

counterparts who used to watch Television / play video games <2 hours per day [(AOR= 2.28, 95%CI= (1.22-4.27)].

Conclusion: The magnitude of overweight/obesity is increasing among the study population. Learning at private schools, consumption of sweet food items, frequent television / video games watching, and sedentary activity were significantly associated with over-nutrition. Awareness must be created on the rising magnitude of overweight/obesity and associated factors among the study participants, school teachers, parents, and other relevant actors to overcome the problem

Keywords: DireDawa, Ethiopia, First cycle primary school, overweight, obesity, school children

Abs 80

The Effect of Nutritional Supplementation on Quality of Life in People Living with HIV: A Randomized Controlled Trial.

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Background: There is little research into the effects of nutritional supplementation on quality of life of people living with HIV (PLHIV) in low-income countries.

Objective: To determine the effects of lipid-based nutrient supplements (LNS) on the quality of life of PLHIV during the first three months of antiretroviral treatment (ART), and investigate the effects of timing of supplementation by comparing with supplementation during the subsequent three months.

Design: Randomized controlled trial.
Setting: Three ART clinics within public health facilities in Jimma, Ethiopia.
Participants: PLHIV eligible to start ART with body mass index >17kg/m².
Intervention: Daily supplementation with 200 grams of LNS containing whey or soy given either during the first three months or the subsequent months of commencing ART.

Outcome measure: Total quality of life scores on the short WHOQOL-HIV assessed at baseline, three and six months.

Results: Of the 282 participants, 186 (66.0%) were women. The mean age (standard deviation SD) was 32.8 (±9.0) years, and the mean (SD) total quality of life score was 82.0 (±14.8) at baseline assessment. At the three month assessment, participants who received LNS showed better quality of life than those who only received ART without LNS [β=6.2, 95% confidence interval: 2.9: 9.6]. At the six month assessment, there was no difference in total quality of life score between the early and delayed supplementation groups [β=3.0, 95% confidence interval: -0.4: 6.4]. However, the early supplementation group showed higher scores on the social and spirituality domains than the delayed group.
Conclusions: LNS given during the first three months of ART improves the quality of life of PLHIV.

Prevalence of Malnutrition and Associated Factors among Children 6-59 Months in Rural Community of Jabie Tehinan Woreda, West Gojjam Zone, Northwest, Ethiopia, 2014.

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Introduction: Malnutrition remains a leading cause of preventable death, especially among children under five in developing countries including Ethiopia. Reports and documents showed that, despite some improvement in community based nutrition, malnutrition continue to be one of the most important causes of child morbidity and mortality.

Objective: To assess the prevalence of malnutrition and associated factors among children 6-59 months in rural community of Jabie Tehinan Woreda, West Gojjam zone.

Methods: Community based cross-sectional study was conducted on 822 children whose age is 6-59 months using face to face interview &anthropometry measurement.Multistage sampling method was used to select study participants. Data were entered, cleaned, compiled and analyzed using SPSS version 20. Binary logistic regression was used to identify the associated factors for malnutrition.

Result: A total of 822 children 6-59 months of age were included in this study. The prevalence of stunting, wasting & underweight in this study were 56.6%, 10.9% and 33.2 % respectively. Hand washing in the latrine, latrine availability, Diarrhea, ARI, information how the child porridge prepared & sex of child were associated with stunting. Number of under five children number of births, Diarrhea, Vitamin A supplementation and early initiation of breast milk after delivery were associated wasting. Age of mothers Vitamin A supplementation and early initiation of breast milk immediately after giving birth were significantly associated with underweight.

Conclusion and recommendations: In this study, it is concluded that malnutrition in the form of stunting, wasting & underweight is still an important health problem among children aged 6-59 months. Therefore, especial attention should be given on the interference of the problem.

Keywords: Children, malnutrition and Jabie Tehinan

Assessment of the Magnitude of Double Burden of Malnutrition and its Associated Factors among Selected in-School Adolescents in Arba Minch Town, Southern Ethiopia: Cross Sectional Study. _Dessalegn Ajema, MPH., Public Health Department, Arba Minch University; Jemal Haidar, MD, MSc, CRM, CME, School of Public Health, Addis Ababa University._

Background: The Double Burden of Malnutrition is a recent emerging nutritional problem of the coexistence of both under nutrition and over nutrition. Although several studies have been conducted on under 5years children malnutrition in Ethiopia, there is a research gap on double burden of malnutrition among adolescents.

Objective: To assess the magnitude of double burden of malnutrition and its associated factors among in-school adolescents in Arba Minch town, Southern Ethiopia.

Methods: School based, Cross-sectional study was conducted among 634 adolescents in Arba Minch town from March to April, 2015. Stratified multi-stage sampling method was used. A self-administered questionnaire was used to collect socio-demographic, food insecurity and physical activity data. Anthropometric measurements [weight, height, waist circumference and hip circumference] were performed by using calibrated equipment and standardized techniques. Finally bivariate and multivariate analysis was done using multinomial regression model using SPSS, version21 and WHO Anthro-Plus software, version 1.0.4 for classifying nutritional status of adolescents.

Results: The magnitude of underweight, normal and overweight and/or obesity were 19.7% (95%CI: 16.5%, 23.2%), 69.2% (95%CI: 66.2%, 72.2%) and 11.2% (95%CI: 8.7%, 13.7%), respectively. Respondents whose family size of five or less were 80% times less likely to be underweight [AOR=0.2; 95% CI= 0.12 to 0.4] compared to those whose family size of more than 5, whereas, the odds of being overweight and/or obesity was 79% times lower in participants who spent 9 hours and less in sitting than those who spent in sitting above 9 hours per day [AOR=0.21; 95% CI=0.1 to 0.4)].

Conclusion and Recommendation: This study revealed the coexistence of double burden of malnutrition among in-school adolescents. Parents' education, family size and wealth index were some significantly associated factors. Intersectoral collaboration among health sectors and education sectors to intervene nutrition problem and nutrition related education is recommended.
Keywords: Double burden, Malnutrition, Factors, Adolescents

Abs 83

Dietary Diversity During Pregnancy Reduced the Risk of Maternal Anemia, Low Birth Weight, Pre-Term Delivery and Still Birth in A Prospective Cohort Study in Rural Ethiopia.

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Background: Anemia during pregnancy is a leading nutritional disorder with serious short and long term consequences to both the mother and fetus.

Objective: The objective was to investigate the association between dietary diversity during pregnancy with maternal anemia, low-birth weight (LBW), preterm delivery and still birth (SB) in rural Ethiopia.

Design: We conducted a prospective cohort study that enrolled 432 pregnant women in their second antenatal care visit (24 - 28 gestational weeks) of which 374 finished the follow up. Using individual dietary diversity scores (IDDS), subjects were categorized into "inadequate" (IDDS <4) and "adequate" (IDDS ≥4) groups and followed until delivery. Primary outcomes were maternal anemia, birth weight, still birth and term delivery. Attrition rate was balanced across the groups.

Results: The incidence of maternal anemia increased from 28.6% to 32.4% during the follow-up period. The overall incidence of LBW, preterm, and still birth were also 9.1%, 13.6% and 4.5%, respectively. Relative to mothers in the adequate group, those in the inadequate group had 1.83 times, *(RR 1.81; 95% CI: 1.35, 2.69)* higher risk of anemia that increased to 2.19 times, (RR 2.19; 95% CI :1.59, 3.06) added risk at term. In the same way, pregnant women in the inadequate group had a 1.79 times (RR 1.79; 95% CI: 1.06, 4.21) LBW, 3.07 times (RR 3.07; 95% CI: 2.36; 9.41) preterm and 3.45 times (RR 3.45; 95% CI: 1.09, 9.89) still birth increased risk than those mothers in the adequate group (P < 0.05).

Conclusion: Adequate IDDS during pregnancy is associated with reduced risk of anemia, LBW, still birth and preterm deliveries, and thus should be promoted in such setting.

Keywords: Anemia, low birth weight, dietary diversity, pregnancy outcome, pre-term, still-birth**.**

Abs 84

Household Food Insecurity and its Associated Factors among Coffee Farming Households in Jimma Zone, South West Ethiopia.

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Background: Household food insecurity is a major challenge for Ethiopia and for many African countries. Globally at least 805 million people or one in nine do not have enough to eat, Sub-Saharan Africa and South Asia are the region's most affected by food insecurity. Household level food shortage is one of the most important effects of population growth and population dynamics affecting multidimensional social and economic life of household members. Despite continued efforts to promote cash crop agriculture as a means of reducing rural food insecurity, the relationship between cash cropping and food security still remains unclear.

Objective: The study was aimed at assessment of household food security status, its associated factors and coping strategy among coffee farming households in jimma zone, south western Ethiopia.

Methods: A community based cross sectional study design was carried out among 749 households selected using multi-stage stratified sampling technique. Data were collected using an interviewer administered semi structured questionnaire and analyzed using SPSS for window version 20. Descriptive statistics and multivariable logistic regression were done to isolate independent predictors of household food insecurity and finding of the study were discussed.

Result: It was found that 68.8% of households were food insecure. On multivariable logistic regression model after adjusting for other variables family size [AOR=1.211 (1.080-1.357)], household head educational status [AOR=3.75(1.781-7.933)], land ownership [AOR= 3.73(1.745-8.01)], usage of agricultural input [AOR 2.58(1.771-3.769)], usage of financial services [AOR=1.45(1.00-2.110)], responsible person for purchasing food [AOR=2.29(1.537-3.427)] and total monthly expenditure for food [AOR=5.01(3.022-8.332)] were significant variables . Rely on less preferred food, borrow food, minimizing the number of meals and amount of food consumption were among the common coping strategies used by food insecure households.

Conclusion and Recommendation: There exists high level of food insecurity, Household food insecurity was particularly high among those households headed by uneducated household head, in which females took food purchasing responsibility, large family size, households that didn't own land, spend less on food, households who didn't use agricultural input and financial institution. Households use different coping strategies, beside its psychological effect, these coping mechanisms could lead to under nutrition. Finally limiting family size, making women autonomous, strengthening adult learning and expansion of financial services were recommended.

Key words: food security, food insecurity, coping strategies

Effect of Outpatient Treatment Program Integrated on Nutritional Status of Outpatient Treatment Program Enrolled Young (6-24 Month) Children in Dilla Zuria Wereda, Gedeo Zone, Southern Ethiopia.

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Background: Adequate nutrition during infancy and early childhood is fundamental to the development of each child's full human potential. Severe acute malnutrition affects approximately 20 million children under five years of age and contributes to more than 1 million child deaths in the world each year.

The aim of this infant and young child feeding educational intervention was to determine the effect of its integration into the community management of acute malnutrition on the nutritional status of young children who are enrolled in outpatient treatment program of the community management of acute malnutrition.

Method: A quasi experimental study design was employed. A quantitative baseline survey was conducted in 100 mother-child pairs on socio-demographics, food security status, food group intakes of children, diet diversity score and anthropometric data of children. An in depth interview with the help of health extension workers concerning complementary feeding practices and a barrier to prepare complementary foods was conducted. This helped in the development of intervention strategies and understanding the local context of young child feeding.

Result: An education intervention comprising 8 specific messages for the intervention group, held twice a month for 6 months, was conducted. Within and between groups nutritional status (WHZ, WAZ and HAZ) difference was tested using t-test. Dietary diversity was improved in the intervention group as compared to the control group even though it was not statistically significant. Proportion of wasting and underweight decreased from 12.5 % to 4.76 % and from 31.25 % to 14.28%, respectively in the intervention group, while in control group wasting and underweight decreased from 13.46% to 8.69% and from 34.6% to 10.86%, respectively. Within group nutritional status (WHZ, WAZ and HAZ was significantly (p-value<0.001) different both for intervention and control group. The between group comparison showed significant difference for WHZ (p-value$=0.002$) and WAZ (p-value<0.001) but not for HAZ (p-value$=0.57$).

Conclusion: IYCF focused nutrition education positively affected nutritional status of acutely malnourished children. Checking for sustained change waiting for similar effect on HAZ is in need of further study with better sample size and longer duration. Community based nutrition program is one of the packages of health extension program, if the intervention is implemented using it, it could make sure greater sustainability of the intervention over the long term.

Keyword: Integrated nutrition education, Quasi experimental study, infant and young child, community management of acute malnutrition

Willingness to Join and Pay for Community Based Health Insurance among Households in The Rural Community of Wachale District, Oromia, Central Ethiopia; Community Based Cross Sectional Study.

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Introduction: Worldwide, every year 100 million are pushed into poverty because of direct out-of-pocket payments. Community-based health insurance schemes allow many people's resources to be pooled to cover the costs of unpredictable health-related complications. Presently government of Ethiopia is piloting community based health insurance scheme supposed to improve health care financing in the country, and has the potential to increase utilization, better protect people against catastrophic health expenses and address issues of equity of access for the citizens. However, there has been limited evidence on willingness to join and pay for the newly proposed and piloting community based health insurance schemes.

Objective: the objective of this study was to assess the willingness of the rural communities in the study area to enroll the newly proposed Community-Based Health Insurance scheme and to estimate the amount they will pay for the scheme as premium.

Methods: A cross-sectional study was conducted from March15-25, 2015, on 572 heads of households. Multistage simple random sampling technique was used and data were collected using structured interviewer administered questionnaire. Binary and multiple logistic regressions were used to estimate the crude and adjusted odds ratios for willingness to join while seemingly un-related bivariate probit regression was used to identify factors affecting willingness to pay. Wtpcikr command was used to estimate mean willingness to pay.

Result: Nearly eighty three percent of the households expressed their willingness to join the schemes, out of which 87.23% had willingness to pay some amount of premium in the schemes.
The mean willingness to pay initial bid and second bid in community based health insurance was 178.89 and 166.71birr respectively. Willingness to pay initial bid was influenced by amount of bid itself, occupational status, number of iddirs being a member, health status of the family and wealth status, while willingness to pay second bid was influenced by second bid, marital status, occupational status, health status of the family and availability of health facility.

Conclusion: the willingness to join and pay for the community-based health insurance scheme in the study area was high, so that CBHI should be initiated in the district.

Abs 87

Willingness to Join and Pay for the Newly Proposed Community Based Health Insurance And Associated Factors In East Gojjam Zone Northwest Ethiopia.

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Introduction: Community based health insurance schemes are promising alternatives for a cost sharing health care system which hopefully also leads to better utilization of health care services, reduce illness related income shocks and eventually lead to a sustainable and fully functioning universal health care system. In Ethiopia, out-of-pocket spending accounted for 37.5% of the total spending in health in 2007/08.

Objective: the main aim of this study was to assess the willingness to join and pay for the newly proposed community based health insurance scheme in east Gojjam zone, Northwest Ethiopia 2015.

Methods: cross sectional study design was implemented. Stratified multistage sampling method was used. Contingent valuation method was used to assess the willingness to pay for self or other members of the household using the bidding game technique. Three iterations was used in the bidding game depending on the answer to the starting-bid. The final response was a continuous quantitative amount that indicates the respondents' maximum willingness to pay. Logit and tobit models were used for analysis of factors associated with willingness to join and pay respectively. Data were fed to Epi Data version 3.1 and analysis was done by using STATA 13 statistical software.

Results: A total of 835 study participants responded for the interviews; making the response rate 98.8%. Of the study participants who were not members at a time of data collection, 500(85.03) were willing to join the CBHI. The mean amount of willingness to pay for community based health insurance was 156.48 Birr (SD±93.6) per annum. The mean amount of money that the households with family size of five and more was 163.44 (SD±97.2) Birr per annum and this figure among households with family size of less than five was 151.32(SD±90.48) Birr per annum.

Conclusion: Educational status of household head, experience of borrowing for medical expenses, sex of household head, household animal asset as measured by tropical livestock unit were factors found to be associated with willingness to take up community based health insurance scheme. In the other hand, variables which had association with level of willingness to pay for community based health insurance include; experience of borrowing for medical expenses, trust on the sustainability of the scheme, residence, experience of illness in the family within past 4 weeks, prior information about community based health insurance, household animal asset, monthly income of households and current membership to the scheme. Therefore, woreda health insurance agency in collaboration with the district administration has to work strong in awareness creation regarding the concepts and principles of the scheme so as to develop the trust of the community towards it

Keywords: CBHI, willingness, Ethiopia

Why Women in Urban Settings Fail to Use Available Maternal Health Services: A Qualitative Study in Selected Towns/Cities of Ethiopia.

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Background: Ethiopia is one of the countries with high maternal death across the world. Despite call by MDG Goal 5 to reduce maternal mortality and Ethiopian government's endeavor to reduce maternal mortality ratio by three quarter over the period of 1999-2005, Ethiopia sustained high maternal mortality estimated at 420 /100,000 live births. Among others such high maternal morbidity is attributed to limited turn out to use ANC, delivery and postnatal care services. Even in urban centers, where health service coverage is expected to be relatively better, still women are not using ANC, institutional delivery is postpartum care attendance is low. This study aims to identify reasons why urban women fail to use such services.

Methods: An exploratory qualitative study was conducted in six purposively selected towns (Adama, Dire Dawa, Hawassa, Debre Birhan, Gondar and Mekelle) were involved in the study. Eleven Focus Group Discussions (FGDs) with selected community members, 40 in-depth-interviews with stakeholders and 15 case studies were completed with residents of selected urban quarters that are characterized as slums. Interviews were transcribed, read and themes were developed following the study objectives. Findings from the different groups were triangulated and interpreted.

Result: Participants anonymously argued that there are positive changes in maternal health service utilization since Urban Health Extension Program started operating in urban settings. Yet, students, daily laborers, widows, divorced, separated, commercial sex workers, house maids, migrants and those who are worried about their HIV sero-status were usually reluctant to use ANC services, deliver at health facilities and attend PNC. Reasons were categorized under individual characteristics, perceived institutional capacities and friendliness of service providers and socio-cultural factors including socially sanctioned expectations.

Conclusion: Although service utilization in urban setting is relatively better, coverage of maternal health service is far from reality. This study shows that blanket programmatic approach should give way to intervention targeting specific section of population. Furthermore, programs are expected to address individual, institutional and socio-cultural factors in tandem to improve maternal health service utilization in urban setting.

Availability and Affordability of Essential Medicines for Children in the Eastern Part of Wollega Zone: Implication for Access to Essential Medicines in Children.

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Background: Essential medicines (EMs) are those medicines which satisfy the priority health care needs of the population. Although it is a fundamental human right, access to essential medicines has been a big challenge in developing countries particularly for children that influenced by many interlinked factors such as the availability in recommended dosage, sustainable financing, rational selection, and affordable price. The WHO recommends assessing the current situations on availability and affordability of EMs as the first step towards enhancing access to them.

Objective: This study assessed access to EMs for children based on availability, affordability, and price.

Methods: We adopted the World Health Organization and Health Action International standard tools to measure availability, affordability, and prices. We collected data on 22 essential medicines for children from 15 public and 40 private sectors' drug outlets in the east Wollega zone. We visited each drug outlet only one time. Availability was expressed as percentage of drug outlets per sector that stocked surveyed essential medicines on the day of data collection and prices were expressed as median price ratio. Affordability was measured as the number of daily wages required for the lowest-paid unskilled government worker (1.04 US $per day) to purchase one standard treatment of an acute condition or treatment for a chronic condition for a month.

Results: The average availability of essential medicines was 43% at public and 42.8% at private sectors. Lowest priced essential medicines were sold at median of 1.18 and 1.54 times their international reference prices (IRP) in the public and private sector, respectively. Half of these medicines were priced at 0.90 to 1.3 in the public sector and 1.23 to 2.07 in the private sector times their respective IRP. Patient prices were 36% times higher in the private sector than in the public sector. Medicines were unaffordable for treatment of common conditions prevalent in the zone at both public and private sectors as they cost a day or more days wage for the lowest paid government unskilled worker.

Conclusions: Access to EMs to children is hampered by availability (less than 50%), high price, and unaffordability (people with low income). Thus disaggregated access study, on larger scale to identify acute areas for policy interventions such as price and or supply, is critical to enhance access to EMs at district levels.

Keywords: Access to medicine, Children, Availability, Affordability, Prices of medicine, East Wollega Zone, Nekemte town, Ethiopia

Abs 90

Burnout Status at Work among Health Professionals in Tertiary Teaching Hospital, South West Ethiopia.

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Background: Burnout is a physical, physiological and psychological stress reaction syndrome as a result of a long-term exposure to intense work- related emotional and interpersonal pressures. Even though, health care is a demanding profession physically and mentally, there is limited information regarding burn-out in Ethiopian health care setting.

Objective: To show prevalence and predictors of burnout

Methods: An institution based cross-sectional study design implemented among 403 health professionals. Burnout was detected using Copenhagen's burnout inventory tool. Other structured questionnaire related to work related condition, and substance use habits were used to collect data. Binary logistic regression was used to identify predictors of burnout at work.

Result: Among all study participants, 36.7% scored above the mean level of burnout. Highest prevalence (82.8%) of burnout status was found among nurses. The least prevalence was observed among laboratory technicians which was 2.8% (n=4). Job insecurity, history of physical illness, low interest of the profession, poor relationship status with managers, worry of contracting infection or illness, and physical/verbal abuse were found to be predictors of burnout.

Conclusion: Prevalence of burnout among health professionals working in tertiary teaching hospital was found to be high. In the effort to achieve the national Health Sector Development Program (HSDP) of Ethiopia, the need of mentally and physically competent health professionals is mandatory. Therefore, prevention strategies to combat burnout seem very crucial.

Keywords: Burnout, Health professionals, occupational health, Work related factors

Achieving Alignment in Academic Health Science Centers in Ethiopia: The Case of Four Teaching Hospitals.

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Background: Academic health science centers (AHSCs), today represent a unique fusion of traditional academia, hospital functions, several levels of education, and, above all, patients. They are complex organizations trying to discharge an often conflicting mélange of responsibilities. This complexity has grown in recent years with the increasingly rapid rate of change, stressing both faculty and leadership. There is a paucity of information on how this complex relationships works in Academic Health Science Centers in Ethiopia.

Objective: To explore the governance status and alignment across governance, strategy, economics and management of academic health science centers in Ethiopia.

Method and materials: Case study was conducted on four selected teaching hospitals in Ethiopia from April 20/2015 to May 10/2015. Interviewer administered structured questionnaires; focus group discussion and in-depth interview guides were used for data collection. Descriptive statistics like frequency tables, graphs descriptive summaries and narrative texts were used to describe the results.

Result: Out of the 17 respondents, more than three fourth were male. Only less than half of the respondents perceived that there is fully integrated strategy across all mission and entities. All of the selected teaching hospitals have governing board with defined term of reference. But, only one among the AHSCs under study was governed by a single unified board, while the three remaining AHSCs have two separate governing boards, hospital governing board and university board. Regarding economic alignment, more than half of the respondent reported that their centers use structured methodologies plus explicit funding for strategic priorities across their centers. Concerning the extent to which management structures for clinical activities are integrated, nearly one third of participants responded that there is separate management structure for physicians. The overall alignment is 3.4 and 2.25 for AHSCs with high alignment and AHSCs with low alignment respectively on 1 to 5 scales. Overall AHSCs alignment corresponds with higher levels of alignment in all of the four key dimensions.

Conclusion: Though the need for alignment is high among the AHSCs, the overall alignment is low. Therefore, the AHSCs should have to assess the current state of alignment in their institution and develop a definition of success in alignment that is consistent with its unique mission and strategic vision, and then routinely monitor performance against these metrics.

Keywords: Alignment, academic health science center, Teaching hospital, Governance.

Length of Stay of Psychiatric Admissions in a General Hospital in Ethiopia: A Retrospective Study.

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Background: In sub-Saharan Africa, the number of psychiatric beds per population is disproportionately low. Moreover, there is a lack of data regarding the patterns of psychiatric admissions and the factors leading to long psychiatric hospitalization in this region. This study aimed to investigate the average length of stay (LOS) and the factors associated with prolonged hospitalizations.

Methods: A ten-year retrospective chart review of patients admitted to the psychiatric facility of Jimma University Specialized Hospital in southwest Ethiopia was conducted. The medical charts of 846 admissions spanning the period from January 2001 to December 2010 were reviewed. LOS greater than 21 days was considered as a cut-off point for lengthier stay. Bivariate and multivariable logistic regression analyses were conducted to identify factors independently associated with LOS.

Results: The most common discharge diagnoses were schizophrenia and other psychotic disorders (27.6%), and bipolar disorder (23.4%). A global clinical rating taken on discharge showed 90.3% improved outcome. The median (25th, 75th percentiles) LOS was 22 (15, 36) days. Patients with major depressive disorder [aOR = 0.51 (0.32 – 0.81)] and brief psychotic disorder [aOR = 0.52 (0.33 – 0.84)] were less likely than patients with schizophrenia and other psychotic disorders to have long hospital stays. Presence of extrapyramidal side-effects and out of pocket expenditures predicted LOS.

Conclusions: Patients with psychoses and bipolar disorder have lengthier hospital stays burdening the cost of care of psychiatric treatment in a general hospital setting. Our findings call for identifying those cases quickly, attending to their needs with evidence-based efficient treatment and for improving and developing an aftercare system such that the utilization of acute inpatient beds, already a scarce resource, could achieve higher efficiency.

Abs 93

Public Stigma against People with Mental Illness in Jimma Town, South West Ethiopia.

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Background: In low income countries where misconceptions are rampant and awareness about mental illness is limited; stigma towards people with mental illness (PWMI) can lead to poor self-esteem, threat to job opportunities and isolation of persons with mental illness. Therefore, this study aimed at assessing the magnitude of public stigma against PWMI and factors associated with it among Jimma town residents.

Methods: A community based, cross-sectional descriptive study was conducted on adult residents of Jimma town from October to November 2012.The data was collected using interviewer administered Community Attitude towards Mentally Ill (CAMI) scale, from 820 residents randomly selected from the town. Data was entered to EPI-DATA and exported to SPSS, then simple descriptive and linear regression analyses were performed.

Result: Our data revealed that out of the total 820 residents of Jimma town 444(54%) were females and the mean (± SD) age was 35(±8.5). The residents held a high level of stigmatizing attitude towards persons with mental illness along all the subscales with relative variation among subscales; the community was less authoritarian, mean (±SD) 27.17 (±4. 96) and held less socially restrictive views, mean (±SD) 32.41 (±4. 20). However, they held relatively less benevolence view, mean (±SD) 35.34(±4.42) and more intolerant attitudes towards community based mental health ideology, mean (±SD) 33.95(±5.82). Major source of mental health information was reported to be television (40.1%) and only 20 (4.3%) respondents got information from health institutions. Occupation was the most important variable in which house wives were less stigmatizing than others and more educated are found to be more stigmatizing ($P<0.05$).

Conclusion: The study revealed that negative attitude against PWMI is widespread, alarming a need to develop strategies to fight stigma attached to mental illness at both institutional and community levels.

Abs 94

Treatment Gap and Help-seeking for Postpartum Depression in a Rural African Setting. *Telake Azale, Abebaw Fekadu and Charlotte Hanlon.*

Background: Postpartum depression (PPD) affects more than one in ten women and is associated with adverse consequences for mother, child and family. Integrating mental health care into maternal health care platforms is proposed as a means of improving access to effective care and reducing the 'treatment gap' in low- and middle-income countries.

Objective: To investigate the treatment gap and help-seeking in women with PPD symptoms in rural Ethiopia to inform development of socio-culturally appropriate services.

Methods: a community based, cross-sectional survey was conducted in southern Ethiopia. A total of 3147 women who were between one and 12 months postpartum were screened for depressive symptoms in their home using a culturally validated version of the Patient Health Questionnaire (PHQ-9). Women scoring five or more (indicating potential depressive disorder) (n=385) were interviewed regarding help-seeking behaviour. . Multiple logistic regression was used to identify factors associated independently with help-seeking from health services.

Results: Only 4.2% of women (n=16) with high PPD symptoms had obtained mental health care and only 12.7% of women (n=49) had been in contact with any health service since the onset of their symptoms. In the multivariable analysis, urban residence, adjusted odds ratio (aOR): 4.39 (95% confidence interval (CI) 1.23, 15.68); strong social support, aOR: 2.44 (95%CI 1.30, 4.56); perceived physical cause, aOR: 6.61 (95%CI 1.76, 24.80); perceived higher severity aOR: 2.28 (95%CI 1.41, 5.47); perceived need for treatment aOR: 1.46 (95%CI 1.57, 18.99); PHQ score, aOR: 1.14 (95%CI 1.04, 1.25); and disability, aOR: 1.06 (95%CI 1.01, 1.15) were associated significantly with help-seeking from health services.

More than half of the women with high levels of PPD symptoms (n=231; 60.0%) attributed their symptoms to a psychosocial cause and 269 (69.9%) perceived a need for treatment. Equal proportions endorsed biomedical treatment and traditional or religious healing as the appropriate intervention.

Conclusion: In the absence of an accessible maternal mental health service the treatment gap was very high. However, symptom attributions and help-seeking preferences indicate potential acceptability of interventions located in maternal health care services within primary care.

A Systematic Review and Meta-Analysis of the Association between Unintended Pregnancy and Perinatal Depression.

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Background: There is a growing interest in exploring maternal mental health effects of unintended pregnancies carried to term. However, the evidence base from a small number of available studies is characterised by considerable variability, inconsistency and inconclusive findings. We present a systematic review and meta-analysis of all available studies on unintended pregnancy as these are related to maternal depression.

Methods: Using PRISMA guideline, we systematically reviewed and meta-analysed studies reporting an association between unintended pregnancy and maternal depression from PubMed, EMBASE, PsychINFO and Google Scholar. We used *a priori* set criteria and included details of quality and magnitude of effect sizes. Sample sizes, adjusted odds ratios and standard errors were extracted. Random effects were used to calculate pooled estimates in Stata 13. Cochran's Q, I^2 and meta-bias statistics assessed heterogeneity and publication bias of included studies.

Results: Meta-bias and funnel plot of inverse variance detected no publication bias. Overall prevalence of maternal depression in unintended pregnancy was 21%. Unintended pregnancy was significantly associated with maternal depression. Despite statistically significant heterogeneities of included studies, sub-group analyses revealed significant associations by types of unintended pregnancies, timing of measurements with respect to pregnancy and childbirth, study designs and settings.

Conclusions: The prevalence of perinatal depression is two-fold in women with unintended pregnancy. Perinatal care settings may screen pregnancy intention and depression of women backed by integrating family planning and mental health services.

Survival and Morbidity of Breastfeeding Versus Formula Feeding Infants and Young Children of HIV-Infected Women Who Were on Prevention of Mother to Child Transmission Follow up on Selected Health Facilities in Addis Ababa, Ethiopia, 2013. A Retrospective Cohort Study.

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Background: Infant feeding in the context of HIV is complex because of the major influence that feeding practices and nutrition have on child survival. HIV-infected mothers face a dilemma regarding how to feed their newborn infants due to the competing risk of HIV transmission through breast-feeding and the risk of increased morbidity and mortality associated with formula feeding. This study was comparing HIV free survival and morbidity of breast and formula feeding infants and young children of HIV infected women who were on PMTCT program.

Methods: Study was conducted on six selected public hospitals in Addis Ababa and retrospective cohort study design was employed to compare the HIV free survival of exposed infants and young children who were on breast fed and formula fed and the cumulative risk of HIV infection throughout the duration of breast feeding. Data were retrieved from randomly selected 857 Mother-infant pair cards (566 breast fed and 291 formula fed infants and young children) which were determined by the two population proportion formula; by taking 80% power and 5% type I error. Kaplan- Meier time-to-event methods and long rank test was used to compare HIV free survival and morbidity between the two groups. Cox regression analysis was used to assess the determinant factors.

Result: Overall probability of HIV free survival in formula fed infants and young children was significantly higher than breast fed infants and young children (log rank test statistics =6.13, p=0.013). Breast fed infants and young children had four (adjusted HR =3.8, 95%CI 1.3-11.1) times higher risks to acquire HIV infection than formula fed infants and young children. There was a statistically significant difference in transmission of HIV between the two cohorts with incident rate ratio of 2.54 (95%CI 1.2-6.3, p=0.009). Infants and young children from mothers who didn't take any types of PMTCT intervention were 4.8 (95%CI 1.1-22.5) times higher risk for the transmission of HIV to their infants and young children as compared to infants and young children from mothers on HAART intervention. There was no statistical significant different risk of developing any types of morbidity between the two groups.

Conclusion: The 18 month cumulative probability of HIV free survival was significantly lower in the breast feeding infants and young children than formula fed groups.

Recommendation:

✓ Programs for the prevention of mother to child transmission (PMTCT) should re-enforce ARV intervention for HIV positive mothers which can drastically reduce the risk of HIV transmissions through breast fed and Formula feeding or Breastfeeding with ARVs prophylaxis is likely to give infants the greatest chance of HIV-free survival.

✓ Future prospective and /or community based study is recommended to address the limitation of this study and to determine the effects of patterns of breast feeding for the transmission of HIV.

Prevalence of Diarrheal Disease and Associated Factors among Under-Five Children Dehana District North West Ethiopia.

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Introduction: Diarrhea is the leading cause of child mortality and morbidity causing very large number of cases in all ages. In Ethiopia under-five mortality rate was 77 per 1,000 live births with 18% morbidity.

Objective: To assess the prevalence of diarrheal diseases and associated factors among under-five children, in Dehana district, Wag-Himra zone, Amhara region, North West Ethiopia.

Methods: A community based cross-sectional study design with multistage sampling method was conducted in Dehana district from March 15 to 25, 2013.696 households were included in the study and data were collected using pre tested structured questionnaire. Bivariate and multivariate logistic regression was used to analyze the data.

Result: - The overall two week childhood diarrhea prevalence was 14.9%. Family size of the household (AOR: 1.9, 95% CI ((1.2, 3.4)], maternal educational status [AOR: 5.1, 95% CI (1.2, 21)], source of drinking water [AOR: 2.4, 95% CI (1.5, 3.5)], time spent to take the water [AOR: 3.4, 95% CI (1.6, 7.2)], unimproved sanitation [AOR: 2.2, 95% CI (1.2, 3.8)], and maternal diarrhea [AOR: 5.8, 95% CI (3.0, 11)] were significantly associated with under five child diarrhea.

Conclusion:-Diarrhea morbidity was a major problem among under-five children. The significant variable for the level of diarrheal morbidity are family size in the household, maternal education, type of water source , Distance (to-and-from) of drinking water source, unimproved sanitation and maternal history of diarrhea were significant .

Keyword: Diarrhea, Under Five Children, Dehana and Ethiopia

Causes of Death among Children Aged 5 to 14 Year Olds from 2008 to 2013 in Kersa Health and Demographic Surveillance System (Kersa HDSS), Ethiopia.

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Background: The global burden of mortality among children is still very huge though its trend has started declining following the improvements in the living standard. It presents serious challenges to the well-being of children in many African countries. Today, Sub-Saharan Africa alone accounts for about 50 percent of global child mortality. The overall objective of this study was to determine the magnitude and distribution of underlying causes of death among children aged 5 to 14 year olds in the population of Kersa HDSS using verbal autopsy method for the period 2008 to 2013.

Methods: Kersa Demographic Surveillance and Health Research Center Field site was established in September 2007. The center consists of 10 rural and 2 urban kebeles which were selected randomly from 38 kebeles in the district. Thus this study was conducted in Kersa HDSS and data was taken from Kersa HDSS database. The study population included all children aged 5 to 14 years registered during the six years period in Kersa HDSS site using age specific VA questionnaires. Data were extracted from SPSS database and analyzed using STATA.

Results: A total of 229 deaths were recorded over the period of six years with a crude death rate of 219.6 per 100,000 population of this age group. This death rate was 217.5 and 221.5 per 100,000 populations for females and males, respectively. Seventy five percent of deaths took place at home. The study identified severe malnutrition, intestinal infectious diseases and acute lower respiratory infections to be the three most leading causes of death. In broad causes of death classification, injuries have been found to be the second most cause of death next to communicable diseases attributing to 13.1 % of the total deaths.

Conclusion and Recommendation: In specific causes of death classification severe malnutrition, intestinal infectious diseases and acute lower respiratory infections were the three leading causes of death where as in broad causes of death communicable diseases and injuries were the leading causes of death. Hence, concerned bodies should take measures to avert the situation of mortality from these causes of death and further inferential analysis into the etiology, prevention and management of infectious diseases should also be taken.

Abs 99

Assessment of Child Vaccination and Knowledge of Mothers on Polio Vaccination and Other Childhood Vaccines in Core Group Polio Project Implementation Districts in Ethiopia. _Legesse Kidanne_, MSc; CORE Group Polio Project, Ethiopia; Filimona Bisrat, MD, MPH, CORE Group Polio Project, Ethiopia; Lee Losey, MSC CORE Group Polio Project USA; Fasil Tessema, MSC, Jima University, Ethiopia

Background: Past few years the immunization coverage in Ethiopia is encouraging with an upward trend in most of the regions in the country even though the coverage in the emerging "pastoralist and semi-pastoralist" regions was and still is unsatisfactory. The CORE Group Polio Project (CGPP) is one of the USAID funded project working with the Government of Ethiopia focusing on community-based activities to improve the immunization coverage in high risk, hard-to-reach and pastoralists areas.

Objective: The objectives the survey were to determine immunization coverage among children aged 12-23 months old to establish baseline estimates of the project indicators and to determine knowledge and attitude of mothers or caretakers on polio and Acute flaccid Paralysis (AFP).

Methods: The survey was conducted in 29 newly selected CGPP project woredas using a cross-sectional descriptive survey with a 30 by 10 modified WHO EPI cluster sampling technique. The study population was all children between 12-23 months of age and their mothers/caretakers. In each selected kebele, a sample of 10 eligible children was selected and mothers/caretakers were interviewed. A standardized structured questionnaire with fixed response categories was used for data collection. .

Results: Vaccination status of children was assessed based on history and card. According to mothers'/caretakers' report, BCG, Polio 3, Pentavalent 3 and measles vaccination rates were 85.5%, 85.5%, 82.6% and 78.0% respectively. Whereas based on vaccination card, the corresponding rates for BCG, Polio 3, Pentavalent 3 and Measles were 39.5%, 35.2%, 37.2% and 30.3% respectively. Considering BCG, third doses of polio and Pentavalent and measles, only 24.7% was found to be fully immunized. On the other hand, dropout rate for Penta 1 – Penta 3 was 6.6%, Penta 1 – Measles 24.0% and Penta 3 – Measles 18.6%.

On mothers' or caretakers' knowledge on age at first polio vaccination, 39.1% said during the first two weeks of birth and 34.5% didn't know age at first polio vaccination. On the other hand, among vaccine preventable childhood diseases, the two most reported diseases were measles (58.6%) and polio (50.7%).

Conclusion: Though higher than EDHS 2011 report, the vaccination coverage was still low in the project communities. In addition, though lower than the EDHS 2011, antigen specific dropout rate was significantly higher than other country report. There is a need to increase engagement of all concerned bodies to increase mothers'/caretakers' knowledge on vaccination timing. These all call the need for collaborative efforts to increase immunization coverage, reduction in dropouts and increase mothers'/caretakers' knowledge.

Assessment of the Prevalence and Associated Factors with Diarrhea among Under Five Children in Farta *Woreda*, North West Ethiopia.

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Background: Diarrheal diseases are still the leading causes of under five morbidity and mortality in sub Saharan African countries including Ethiopia. The discrepancy in the effects of different factors on the prevalence of diarrhea indicates the variance of the implementation of diarrhea prevention strategies with the context of the population from place to place and needs locality based studies.

Objective: To assess the prevalence and associated factors with diarrhea among under five children in Farta *Woreda*, North west Ethiopia.

Methods: Community-based cross-sectional study was conducted in Farta woreda, in March, 2014 with a total of 998 mothers/caretakers of under five children living in the randomly selected 11 kebeles. Data was collected using structured questionnaires. Descriptive statistics to describe the study variables and Bivariate logistic regression analysis to see the association between outcome and explanatory variables was performed .Finally multivariate logistic regression analysis was performed for those variables that appeared with $P \leq 0.3$ in the bivarate analysis to determine the independent determinant factors of childhood diarrhea.

Results: The findings of this study showed that the prevalence of diarrhoea in under-five children was 16.7% (95%CI: 15.52, 17.78). It was associated with place of residence [AOR: 2.58, 95%CI :(1.08, 6.18)], walking time to fetch drinking water [AOR: 1.65, 95%CI :(1.01, 2.68)], availability of latrine facility [AOR: 0.62, 95%CI: (0.43, 0.89)], hand washing materials [AOR: 1.6, 95% CI: (1.08, 2.28)], age of child [AOR : 3.1, 95% CI= (1.16, 8.15)] and vaccination status of child for Rota virus [AOR: 1.75, 95% CI= (1.11, 2.77)].

Conclusions and Recommendations: The prevalence of diarrhea was high in the study area among under five children .Thus efforts to reduce childhood diarrhea should focus strengthening of expanding of access to drinking water sources, education of women on hygiene promotion and child feeding practice as well as expanding access to Rota virus vaccination for all age groups of under five children.

Spatial Variation and Determinants of Childhood Diarrhea in Ethiopia: Spatial and Multilevel Study.

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Background: childhood diarrhea is one the major public health problems in Ethiopia.

Objective: To investigate the geographical variation of childhood diarrhea and to identify factors associated with childhood diarrhea.

Methods: This is a secondary data analysis using 2011 Ethiopian Demographic and Health Survey. Getis and Orids spatial statistical tool were used to identify high and low hotspots of childhood diarrhea. A total of 11654 mothers who had children under years of age were included in the analysis from 11 administrative states of Ethiopia. A multilevel multivariable logistic regression model was used to identify factors associated with childhood diarrhea.

Result: The prevalence of childhood diarrhea was 13.5% (95% CI: 12.6-14.5). The Getis-Ord G-statistical analysis showed that statistically significant hotspots of childhood diarrhea were found in Western (Gambella), northwestern (Benshangul-Gumz,) southern (SNNP) and southeastern (Somali) parts of the country. The odds of childhood diarrhea were 3.7 times higher (AOR= 3.70; 95%CI: 2.65 - 5.15) among children with age group 12-23 months as compared to children with age group 48-59 months. Those children with mothers who were not working had 13% higher odds of childhood diarrhea as compared to children with mothers who were working(AOR=1.13; 95%CI: 1.01-1.28). The odds of childhood diarrhea were decreased by 13% (AOR=0.86; 95%CI: 0.75-0.98) in male children as compared to female. Those children who were from households with unimproved drinking water source had 59 % (AOR=1.59; 95% CI: 1.06-2.39) more likely to experience childhood diarrhea as compared to children who were from piped water.

Conclusion: Childhood diarrhea is not random in Ethiopia. Statistically significant hotspot clusters were concentrated in Western (Gambella), Northwestern (Benshangul-Gumz,), Southern (SNNP) and Southeastern (Somali) parts of the country. The intervention aimed to prevent childhood diarrhea should focus on these hotspot areas. Improving the type of drinking water source might be one of the areas of focus to reduce the prevalence of childhood diarrhea in Ethiopia.

Keywords: childhood diarrhea, spatial analysis, multilevel analysis

Determinants of Hypertension among Adults in Tigray, North Ethiopia: A Matched Case Control Study.

Determinants of Hypertension among Adults in Tigray, North Ethiopia: A Matched Case Control Study. *Alemayehu Bekele Mengesha*, *PhD, EPHA; Susan Benedict, PhD; Peter Sandy, PhD; Eva kantelhardt, MD.*

Background: Hypertension has become an epidemic and a global public health issue. It has been evidenced that it contributes to the burden of cardiovascular disease including heart disease and stroke and kidney failure and premature mortality and disability. It disproportionately affects populations in low- and middle-income countries where health systems are weak. Its magnitude has also increased in Ethiopia; however, there is a research gap on the underlying risk factors.

Objective: The purpose of this study was to assess the determinants of hypertension among adults in Kilte Awlaelo Health and Demographic Surveillance Survey site and Mekelle city.

Methods: A matched case-control study design was employed to identify the determinants of hypertension. Hypertensive cases and controls (non-hypertensives) were identified and randomly included in the study. The data was collected using a structured questionnaire for the interview, physical measurements including weight and height scales, non-elastic measuring tape for waist and hip circumferences, Omron digital BP apparatus for blood pressure and heart rate. A total of 117 cases and 235 controls participated in the study. Bivariate and multivariate (conditional logistic regression) analyses were conducted to identify the determinants of hypertension. Odds ratio with 95% confidence interval was used to declare the presence and strength of association between the explanatory and outcome variables.

Results: The median age of both cases and controls was 40 years (ranged 25-64 years). Income of <= quintile 1 had 90% reduced risk of being a case of hypertension compared to those whose income was greater than quintile 4, AOR and 95% CI, 0.1(0.004-0.84). there was 50% reduced risk of being hypertensive among participants who were engaged in moderate work related physical activity compared to those who did not engage in such activities, OR and 95% CI, 0.50(0.25-0.99). Drinking alcohol for less than 10 years duration had 70% reduced risk of being hypertensive compared to those who drank alcohol for >= 10 years duration, OR and 95%, CI, 0.30(0.15-0.59). Having normal waist circumference had 42% reduced risk of being hypertensive compared to those whose WC was raised, OR and 95% CI, 0.58(0.34-0.98). Study participants reported to maintain their weight if perceived or told to be overweight or obese were 6.72 times more likely to be hypertensive compared to those did not want to maintain their weight, OR and 95% CI, 6.72 (3.14-14.4). Participants who responded that being overweight or obese has an adverse health consequence were 6.63 times more likely to be hypertensive compared to those

who did not know anything, OR and 95% CI, 6.63(1.1-40.80). Study participants felt to have poor digestion had 61% reduced risk of being hypertensive compared to those who did not feel so, OR and 95% CI, 0.39(0.20-0.75). Participants who felt nervous, tense or worried were 1.63 times more likely be hypertensive compared to those who did not feel nervous, OR and 95% CI, 1.63(1.0-2.75). Participants who lost interest in things were 5.46 times more likely to be hypertensive than those who did not have similar feelings, OR and 95% CI, 5.46(1.47-20.2).

Conclusion: The determinants of hypertension were physical inactivity, long duration of alcohol intake, misconception on preventive factors, central obesity and mental stress. Awareness raising interventions have to be sustainably implemented to help the community avoid the risky behaviours. Multifaceted management and prevention of the behavioural and biological risk factors have to be implemented by all concerned bodies.

Keywords: Behavioural, biological, hypertension, mental stress, perception, physical inactivity, risk factors

Abs 103

"Addis Tesfa" (New Hope) Project's Lesson on the Prevention of Cervical Cancer in Ethiopia.

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Background: Cervical cancer is a public health challenge in developing countries, where it is the leading cause of cancer deaths among Ethiopian women. The burden is largely attributed to availability of screening and precancerous lesion treatment. *"Addis Tesfa"* project is the first cervical cancer prevention (CCP) program in Ethiopia that uses the Single Visit Approaches (SVA).The SVA applies Visual Inspection of the cervix with Acetic acid wash (VIA) and immediate treatment of the pre-cancerous lesion with cryotherapy. The purpose of this paper is to describe the *Addis Tesfa* project result which serves as an entry point for the national scale-up.

Methods: The project was launched in 2009 for HIV-infected women and Pathfinder has established the SVA services in five major regions, built the system and technical foundation in the country; trained providers on VIA, cryotherapy and loop electrosurgical excision procedure (LEEP); and advocacy and awareness raising campaigns promoted. A cross sectional study was employed using aggregate client data of the project from October 2010 to September 2014. A descriptive analysis was conducted in order to obtain the number of women counseled, screened, treated and annual follow-ups visits made. A Health Facility Assessment was also implemented to examine the effects of the SVA on client flow, staff workload, and facility infrastructure three years after SVA service initiation.

Results: A total of 18,193 HIV-infected women were screened with VIA and1,879 (10.3%) of them tested VIA positive (VIA+) for pre-cancerous lesions. Among 1746 tested VIA+ and eligible for cryotherapy, 96.3% received cryotherapy treatment. Only 63.9% of 133 women eligible for LEEP received the treatment. Of 1,433 women expected to return for the one-year follow-up, 56.2% showed up and screened; the re-screening yields cure rate of 92 %.All HIV-infected women's VIA result that returned for the follow-up visit after second round treatment were VIA negative. The Health Facility Assessment results showed frequent staff turnover, some shortage of essential supplies, as well as rooms that were judged by providers to be too small for CCP service delivery.

Conclusion: The high proportions of VIA screening and cryotherapy treatment in the *Addis Tesfa* project suggests high acceptance by women. The low follow up visit rate, however, calls for an exerted effort to strengthening follow up care. Success of CCP programming must also address the wider health system challenges to ensure sustainability and appropriate scale-up of SVA services to the general population of Ethiopia and other resource-constrained settings.

Abs 104

Double Burden of Diseases as Causes of Adult Mortality: Evidence from Verbal Autopsy Analysis in Kersa Health and Demographic Surveillance System, Eastern Ethiopia.

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Background: The health problems of adults have been neglected in many developing countries yet many studies in these countries show high rates of premature mortality in adults. These countries are undergoing epidemiologic transition with a shift from high mortality caused by communicable diseases (CD) to lower mortality rates caused by non-communicable diseases (NCD). At some points in the process of transition, however, there may be a "double burden" of disease in which non-communicable diseases (NCD) increase while pre-existing infectious diseases still remain.

Objective: To describe the levels and patterns of CDs and NCDs as causes of adult mortality over time (2008-2013)using verbal autopsy(VA) method in Kersa Health and Demographic Surveillance System(Kersa HDSS).

Methods: This study is community based longitudinal study where VA methods were used to assign probable cause of death by trained physicians. It used population-based data of Kersa HDSS to investigate the changes in CDs and NCDs as causes of death among adults of age 15 years and older in six years period (2008-2013). Kersa HDSS is a demographic and health surveillance and research center established in 2007 in the Eastern part of Ethiopia. Analysis was performed using STATA version 11 and graphs were performed in Microsoft Excel 2007.

Results: VA was done for the total of 1535 adult deaths and physician review for cause of death assignment was completed for all. A specific cause of death was able to assign for 1107 (72%) of the deaths. The adult mortality rate over the six years period was 8.5 per 1000 population. Out of the total deaths, about one third (32.4%) occurred due to infectious and parasitic causes , diseases of circulatory system being the second leading causes of death (11.4%) followed by gastrointestinal disorders (9.2%). Of the deaths attributed to infectious and parasitic causes, intestinal infectious disease including diarrhea was the top leading cause of death (11.9%), followed by tuberculosis (8.3%). Death due to tuberculosis showed a consistent increase over the years and was even the leading in the last two years of surveillance (2012 and 2013). However,

there is a general tendency of decline in mortality due to infectious and parasitic causes since the year 2012.Next to the infectious and parasitic causes , non –communicable diseases were the second leading causes of mortality over the years(26.4%) ,with considerably higher proportion of deaths over the last surveillance period(2012 and 2013). Chronic liver disease (CLD) was prominent NCDs as cause of death among young age adults (15 -49 years age adults) throughout the surveillance years.

Conclusion: The increasing tuberculosis(TB) related mortality as well as the relatively high mortality due to CLD among the young age adults in all the study years should be further investigated and triangulated with health service data to understand the root cause of deaths. Even though such presumed association needs further investigation, a considerable high proportion of young adult deaths from CLD throughout the six surveillance years might be due to the high consumption of Khat chewing and other related local substance abuse prevalent in the district.

Keywords: Adult, verbal autopsy, cause of death, mortality, communicable and non-communicable diseases, kersa district, surveillance

Prevalence and Associated Factors of Hypertension among Adult Population in Jigjiga Town, Eastern Ethiopian, Somali Regional State, 2015.

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Background: The people of low and middle income countries bear about 80% of the global burden of diseases that are attributable to high blood pressure. Hypertension is responsible for at least 45% of deaths due to heart diseases. Hypertension is a growing public health problem in many developing countries including Ethiopia. However, its prevention and control has not yet received due attention.

Objective: To assess the prevalence and associated risk factors of hypertension among adults in jigjig town, Somali region state, Eastern Ethiopia, from May up to June, 2015

Methods: A community based cross sectional study was conducted from May to June 2015 among 330 adults 20 years old and above residing in Jigjiga town using multistage sampling technique. An interview-administrated questionnaire and physical measurements such as blood pressure, weight, height, and waist and hip circumferences were employed to collect the data as per the WHO STEP wise standard procedures. Odds ratio with 95% confidence interval was estimated using multivariable logistic regression to identify independent predictors of hypertension.

Result: The overall prevalence of hypertension was 13.3% (95% CI: 10.90-15.70) which is slightly lower in men (10.9%) than women (15.7%) though the difference was not statistically significant (X^2=1.57, P= 0.211). Among all hypertensive people identified, 12(28.57%) did not know they had hypertension (newly screened). Family history of hypertension [AOR: 25.0 (11.65 - 98.12)], and individual who did not engaged in any kind physical activity [AOR: 16.24 (2.12 - 99.12)] were independent predictors of hypertension.

Conclusion: There was a high prevalence of hypertension probably indicating a hidden epidemic in this community. Family history of hypertension and physical inactivity were predictors of hypertension in this study. Hence, community based screening programs are paramount to identify new cases as well health information dissemination on the importance of regular physical activity and regular check up.

Keywords: Hypertension, Prevalence, associated factors, Jigjiga

Cervical Cancer: Assessment of Diagnosis and Treatment Facilities in Public Health Institutions in Addis Ababa, Ethiopia. *Yehualashet Tadesse*, MD, MSc.

Background: Cervical cancer is the second most common cancer in women globally and the leading cause of cancer deaths in women in low income countries. The majority of cervical cancer related deaths occur in the developing world. It is also an important public health problem in Ethiopia, a country without a well-established control program for the disease. This study assessed the diagnostic and therapeutic facility for cervical cancer (including health providers' awareness of the disease) in Addis Ababa public health institutions which can be used to develop control strategies and to visualize the amount of resources required.

Methods: A cross-sectional study was conducted including all public health institutions in Addis Ababa in August 2010. Health providers' awareness of cervical cancer was assessed using a self-administered questionnaire. Checklist was used to register diagnostic and therapeutic infrastructure in each health facility. Data was analyzed using STATA.

Results: All health providers responded they had heard about cervical cancer. Half of the participants were able to identify common symptoms of the disease. Only 23% of the participants mentioned human papilloma virus (HPV) as the primary cause of cervical cancer. A significant association between awareness and profession was seen. Absence of skilled manpower, equipment and proper documentation was reported in the majority of the institutions.

Conclusion: This study assessed the existing skilled man power and infrastructure to diagnose and treat cervical cancer in public institutions in Addis Ababa which is important to develop an effective cervical cancer control program. In addition, the study showed the more work that should be done to improve health providers' awareness on cervical cancer through education and training.

Case Control Study of Factors Contributing to Late Diagnosis of Cervical Cancer in Public Hospitals of Addis Ababa, Ethiopia, 2015.

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Background: In Sub-Saharan Africa, including Ethiopia cervical cancer is the second commonest cancer and first leading cause of mortality. Study finding from developing setting indicated that 80-90% of cervical cancer cases diagnosis at late stage. Nerveless, a little known about factors associated to late diagnosis of patient with cervical cancer in Ethiopia. Hence, this study conducted to assess factors contributing to late diagnosis of patients with cervical cancer in selected facilities of Addis Ababa city administration, Ethiopia 2015.

Methods: Facility based unmatched case-control study design supported by qualitative study were conducted from January to February 2015 on randomly selected 198 (99 case and 99 control) cervical cancer patients in Black Lion, Zewiditu and St. Paulos hospitals in Addis Ababa and were interviewed and medical records reviewed. Descriptive statistics were used to summarize socio-demographic and clinical characteristic of study population. Binary logistic regression was used to assess association between outcome variable and predictors. The results were reported by odd ratio (OR) and statistical significance were declared at p-value less 0.05.

Result: The odds of late stage diagnosis were lesser among those women who had income between 650 to 1000 EB per month (AOR0.26; 95%CI (0.091-0.74). And higher among women who were unemployed (AOR3.2; 95% CI (1.38, 7.41)), among women who travel more than 48 hours to oncology center (AOR7.15; 95% CI (1.54, 33.22)), women who had long total diagnostic delay (AOR 4.17; 95% CI (1.197, 14.52)). On IDI, symptom misrecognition and interpretation, long waiting time to see a doctor, waiting time for test, being far away and waiting time in treatment center are the main reasons for late diagnosis.

Conclusion and Recommendation: early diagnosis and treatment is very crucial for cervical cancer, Family monthly income, occupational status, distance from oncology center and total diagnostic delay were predictor factors of late stage diagnosis.   It needs a better attention on prevention, control and early treatment mechanisms in every level.

Prevalence of Hypertension and Associate Risk Factors among Workers at Hawassa University, Ethiopia.

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Background: Hypertension is a serious public health concern which alone is estimated to cause 7.5 million (12.8% of all causes of death) deaths per year and it doubles the risk of many cardiovascular diseases. Nearly 80% of NCD deaths occur in low- and middle-income countries and in Ethiopia, hypertension accounted for 1.4 percent of all deaths in 2000/01. This study aimed to determine prevalence of hypertension and associate risk factors among workers at Hawassa University, Ethiopia.

Objectives: To assess the prevalence of hypertension, the associated risk factors and knowledge plus practice related to hypertension.

Materials and Methods: The study was conducted in January 2014 to March 2014. Using simple random sampling technique 620 participants were selected. Data was collected by structured questionnaire consisting of closed ended questions. It covered demographic variables as well as physical examinations that included weight, height, WC and BP. Pilot study and data collector training were conducted to ensure data quality. Data were analyzed using SPSS version 16 computer software.

Result: The response rate of the study was 99.6%. Majority, 61.7% (376), of the respondents were male, 47.8% (272) were aged 25 – 34 years and 33.1% (203) were diploma holders. Among respondents 122 (19.7%) were found to be hypertensive either by systolic or diastolic blood pressure out of which 54 (44%) were found hypertensive both by systolic and diastolic blood pressure. Of the 122 hypertensive persons, 45 (36.9%) did not know their hypertension status. Some 192 (31%) of the respondents had a BMI score of 25 and above out of which 41 (21.4%) were obese (had a BMI exceeding or equal to 30.0). Respondents whose BMI measures ranged from 25-29.99 and those who were 30 years old and above were at increased risk of hypertension AOR=3.8 (95%CI 1.22-12) and AOR=3.90 (95%CI 1.10-14.01), respectively.

Conclusion: Prevalence of hypertension among the study subjects was significantly high and most of them didn't know their hypertension status. The level of knowledge related to hypertension and practice of protective healthy life style were very low calling for urgent intervention.

Keywords: Body Mass index, Waist circumference, Hypertension, Obesity, Ethiopia

Prevalence of Hypertension in Ethiopia: A systematic Meta-analysis.

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Introduction: Hypertension has been rising in developing countries like Ethiopia. There is no population based national prevalence study on hypertension except pocket studies done here and there. These pocket studies reported the prevalence of hypertension from 9 % to 31 %. So this study is intended to estimate/pool the prevalence of hypertension at national level by using these pocket studies.

Methods: Relevant studies were identified through computer based and manual searches using MEDLINE/ PubMed, Google scholar, EMBASE, HINARI and reference lists of prevalence studies. The description of original studies were made using frequency and forest plot. Heterogeneity across studies was checked using Cochrane Q test and I^2 teststatistic. Pooled estimate and Subgroup analysis of prevalence of hypertension was computed by random effect model.

Results: The electronic search using keywords identified 108 titles for prevalence of hypertension in Ethiopia, of which 99 were excluded. Nine studies were analyzed to determine the prevalence of hypertension in the Ethiopian population. Random effects meta-analysis of all the 9 studies showed that the prevalence of hypertension in Ethiopia population was estimated to be 19.6% (95%CI: 13.7%, 25.5 %). In Subgroup analyses, the prevalence of hypertension in the urban population was 23.5 % and that of rural/urban population was 14 .7%. It shows that the prevalence of hypertension is higher in the urban population of Ethiopia compared to the rural. But the prevalence of hypertension among male (20.6 %) and female (19.2%) was same.

Conclusion: this study found that the prevalence of hypertension in Ethiopian population has been increasing. This evidence suggests that attention has to be given to primary prevention of hypertension in the Ethiopian adult population, especially the urban population.

Keywords: prevalence of hypertension, Ethiopia, prevalence, blood pressure, systolic, diastolic

Assessment of Prevalence and Associated Factors of Hypertension among Adults in Jigjiga City, Somali Region, Eastern Ethiopia. *Frew Tadesse, MSc., School of Public Health, College of Health Sciences and Medicine, Jigjiga University, Jigjiga; Henok Asresahegn, MSc., School of Public Health, College of Health Sciences and Medicine, Jigjiga University, Jigjiga; Ermias Beyene, MD, School of Public Health, College of Health Sciences and Medicine, Jigjiga University, Jigjiga.*

Background: Hypertension is a growing public health problem in many developing countries including Ethiopia. It is a silent killer and most patients are detected to have it incidentally when they are admitted to hospital for unrelated disease or subjected to pre-employment or preoperative medical checkups. Information on the prevalence of hypertension and its associated factors is to be considered vital to focus and improve prevention and control of cardiovascular diseases.

Objective: To assess the prevalence and associated factors of hypertension among adults in Jigjiga city, Eastern Ethiopia

Methods: The study design was a cross-sectional survey. The study population consisted of adults aged 25-65 years who lived in Jigjiga city of eastern Ethiopia for at least 6 months. The study included 492 participants using a multistage random sampling technique. Data were collected using structured interview questions and physical measurements. Data entry was performed using the Epi info version 3.5.1 Software, and exported to SPSS version 16 for analysis. Initial analysis was done by Chi-squared testing and subsequent analysis by binary logistic regression.

Results: Some 487 individuals provided data. Of these, 138 (28.3%) were hypertensive. Among all hypertensive people identified, 88 (63.8%) did not know they have had hypertension (newly screened). Of the 50 (36.2%) hypertensive people who reported using anti-hypertensive medications during data collection period, 34.0% had normal BP on measurement. Family history of Hypertension[Adjusted OR=5.7; 95%CI (2.9, 10.9)], having high level income [Adjusted OR=3.1; 95%CI (1.5, 6.3)], being male[Adjusted OR=2.4; 95%CI (1.3, 4.3)], being above grade 12[Adjusted OR=2.2; 95%CI (1.2, 3.9)], and having BMI≥ 25 [Adjusted OR=2.0; 95%CI (1.1, 3.5)] were significantly associated with hypertension.

Conclusion: In adults living in eastern Ethiopia, the prevalence of hypertension was high and may show a hidden epidemic in this population. Accordingly, health promotion regarding hypertension should be provided in the population as means of primary prevention.

National Burden of Diseases and Injuries, Ethiopia: Findings from Global Burden of Diseases 2013 Study. *Awoke Misganaw, PhD., Institute of Health Metrics and Evaluation, University of Washington, USA; Mohsen Nagavi, PhD, MD, Institute of Health Metrics and Evaluation, University of Washington, USA.*

Objectives: Using Global Burden of Disease (GBD) data to examine the double burden of communicable, maternal, neonatal and nutritional deficiency (CMNN) disorders and non-communicable diseases (NCDs) and to measure the healthcare system performance in terms of mortality, Years Lived with Disabilities (YLDs), Disability Adjusted Life Years (DALYs) due to diseases and injuries between 1990 and 2013 for Ethiopia.

Methods: The GBD study used consistent definitions, data sources, and methods to examine health loss for diseases and injuries for 188 countries. Rates have been estimated in accordance with some general principles: identification of all available data sources, evaluation of the quality and correction for known bias in each data source, consistent statistical estimation including uncertainty analysis, and cross-validation analysis to assess model performance. Various statistical estimation methods were used, the most common approach being the application of a Bayesian metaregression model, DisMod-MR 2.0 and cause of death ensemble modelling (CODEm). The drivers of change in the numbers of deaths were identified using decomposition analysis. In brief these trends were decomposed into the contribution of total increase in population size, aging of the population, and changes in age-specific and sex specific rates. We presented results with 95% Uncertainty Intervals (UI).

Results: Non-communicable diseases were leading cause of age-standardized death and YLD rates in 2013. Age-standardized death rate due to NCDs, CMNN and injuries respectively were, 720.5 (659.5-784.7), 610 (568.6-653.4) and 91.5 (79.7-104.2) per 100,000 people. Years lived with disabilities due to NCDs, CMNN and injuries respectively were, 9261.2 (6959.9-11879.7), 2005.5(1399.2-2807.4) and1055 (684-1709) per 100,000 people. In 2013, age-standardized DALYs rate caused by NCDs, CMNN and injury were 23,710.4 (20803.5-26659), 26,370.6(24025.9-29082.1) and 4291 (3597-5115) per 100,000 people respectively.

Between 1990 and 2013, Ethiopia has progressed in reducing CMNN disease caused deaths by 52%, YLDs by 22% and DALYs by 57%. However, the progress with NCDs was less; 18% death decline and 20% decline for DALYs and no change with YLDs in the last 2 decades. In 2013, lower respiratory infection, diarrheal diseases, tuberculosis, HIV/AIDS respectively were among the ten national leading causes of age-standardized death rate ranging from 70.9 to 137.8 per 100,000 people. Between 1990 and 2013, age-standardized death rate for lower respiratory infection,

diarrheal diseases, and tuberculosis declined by 43% to 66%, HIV/AIDS increased by 162% showing reduction by 63% between 2005 and 2013. In the NCDs category; ischemic heart diseases, hemorrhagic stroke, ischemic stroke, hypertensive heart diseases, other cardiovascular diseases and diabetes were among the ten leading causes of age-standardized death rate in Ethiopia ranging from 34.4 to 100.7 per 100,000 people in 2013. Between 1990 and 2013, age-standardized death rate for the above leading NCDs reduced by 2% to 23%.

Measured in DALYs, ischemic heart disease, hemorrhagic stroke, ischemic stroke and major depression of the NCDs category were among the ten leading causes of age-standardized rates ranging from 1102.9 to 1764.1 per 100,000 in 2013. Except major depression (increased by 6%), the three declined with 18% to 20% between 1990 and 2013. Lower respiratory infection, HIV/AIDS, diarrheal diseases, tuberculosis, neonatal preterm birth and malaria were among the leading ten causes of age-standardized DALYs rates ranging from 1035.9 to 4109.7 per 100000. Between 1990 and 2013, except HIV/AIDS (increased by 150%) age-standardized DALYs rates for others declined by 49% to 75% and HIV/AIDS declined by 64% between 2005 and 2013.

Conclusion: NCDs were leading causes of age-standardized death and YLD rates and caused equivalent rates of DALYs with CMNN disorders in 2013 in Ethiopia. The double burden of CMNN disorders and NCDs require policy attention and proven strategies. In the last 2 decades, the health system has performed well to reduce more than 50% of death and DALY rates from CMNN disorders and poorly performed for NCDs that needs particular consideration.

Knowledge and Perception towards Cervical Cancer among Female Debre Berhan University Students.

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Background: cervical cancer is a global public health problem with an over 500,000 new cases annually and in excess of 270,000 deaths. Risky behavior, lack of knowledge and lack of preventative measures in young age group, increase the risks of STI and possibly cervical cancer later in life. Up to date, there is scarcity of study on level of knowledge and perception towards cervical cancer among female university students in Ethiopia. So, this study was aimed to determine the level of knowledge on sign and symptoms, risk factors and the preventive measures of cervical cancer and its associated factors among female undergraduate students.

Methods: A facility based cross-sectional study was conducted using self-administered questionnaire among 578 regular female Debre Berhan University students from May to June, 2015. Data was entered and cleaned in Epi info and imported to SPSS for analysis. Data was presented in frequency, percent and graphs. Bivariate and multivariate logistic regression was used in analyzing the data.

Result: the mean age of the participants were 20.45 ± 1.79 and 84(14.5%) were sexually active. Of the participants, 142(40.5%) had heard of cervical cancer and 195 (35.6%) had good knowledge towards cervical cancer. Using radio and TV as source of information [AOR= 1.914(95% CI: 1.220-3.002)], awareness about STI [AOR =3.017 (95% CI: 1.658 -5.492)] were significantly and independently associated with good knowledge of cervical cancer.

Conclusion. The level of knowledge towards cervical cancer was poor. Health education interventions are needed to improve the awareness and health seeking behavior in youth women thereby preventing cervical cancer related morbidity and mortality.

Prevalence and Determinants of Chronic Non Communicable Diseases in Hosanna Town: A Population Based Cross Sectional Study.

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Background: Chronic non communicable diseases are one of the most leading public health burdens globally. At a moment its spread is emerging markedly among low income countries like Ethiopia. However, little is known about the magnitude and determinants of chronic non communicable diseases in Ethiopia particularly in a community set up.

Objective: This study was aimed to assess the prevalence and determinants of chronic non communicable diseases in Hosanna town.

Methods: A community based cross sectional study was conducted from May 01 to May 30, 2015 in the three K/ketemas (sub cities) of Hosanna town. A multistage cluster random sampling technique was employed to select the study subjects (n = 634) from six randomly selected kebeles (lowest administrative unit in Ethiopia) of the town. Data was collected by face to face interview using the WHO STEP wise approach. Anthropometric measurements, random blood sugar level, and blood pressure were determined by using standard procedures. Prevalence was computed with a 95% confidence interval and selected risk factors were assessed using multiple logistic regression.

Result: The overall prevalence of chronic NCDs was found to be 19.5% (95% CI 16.6 – 22.8), which is 21.8% among men and 16.2% among women. Specifically; 5.7% were diabetic, 17.2% were hypertensive, 2.1% were asthmatic, and 1.5% were with mental illnesses. High proportion (more than 38%) of the undiagnosed hypertensive and diabetic cases were identified among the population. Older age (AOR = 5.15, 95% CI 1.56 – 16.93), spending much time on sitting (AOR = 1.27, 95% CI 1.039 – 2.883), not doing work involving vigorous physical activity (AOR = 8.05, 95% CI 3.02 – 23.06) and being heavy alcoholics (AOR = 3.95, 95% CI 1.615 – 7.214) were significantly associated with the presence of either chronic NCDs.

Conclusion and Recommendation: The magnitude of CNCDs and the risk factors are considerably high among the population. Furthermore large number of undiagnosed cases was identified. Therefore due emphasis should be given for the prevention, wellness promotion and control of non communicable diseases.

Keywords: Chronic non communicable diseases, prevalence, population based

Prevalence of Hypertension and Diabetics and Associated Factors in Ethiopia, Implication for Public Health Intervention: Implication for Priority Policy Attention for Intervention: Systematic Review From 2000-2015.

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Background: Hypertension and diabetics is a growing public health problem in many developing countries including Ethiopia. It augments quantitatively the major risk factor for premature cardiovascular disease and systemic complication. This comprehensive systematic review was therefore undertaken to critically appraise existing studies on the prevalence of adult hypertension and diabetics and major factors to provide essential information to stimulate priority attention to none communicable diseases.

Methods: Potentially relevant papers on hypertension and diabetics were reviewed among adult in Ethiopia from 2000 until December 2015 published in English from databases: PubMed, Google Scholar, Science Direct, Cochrane Library. The search criteria used as key word were Hypertension, Diabetic, complication of Hypertension and Diabetic, Cardio vascular disease, High Blood Pressure and Ethiopia and High Glucose Level. Thirteen communities based published articles on Hypertension and Diabetes was eligible for review.

Result: The prevalence of hypertension (BP $\geq$ 140/90 mm Hg) as cut of point ranges from 7.7% to 30% in Ethiopia. Relatively higher prevalence is observed in male Sex and urban populations. The prevalence Diabetics range from 3.7% to 9 % in pregnant mothers as gestational diabetics, where as 6.5% was reported in adult and 15.6% in old age population. Almost all study identified male sex, older age, lack of vegetable eating habit, alcohol consumption, salt use, family history of hypertension and diabetics, overweight (obesity) and physical inactivity as significant contributing factors for hypertension and diabetics.

Conclusion and Recondition: The results of this review indicate that there is increase prevalence of hypertension and diabetics. Priority attention should be given to reduce modifiable risk factors for this major None communication disease by improving access to physical exercises, promoting dietary modification to vegetable and fruit diet, life style modification by reducing alcohol and salt consumption through Health Extension program at grass root level. Further more blood pressure and glucose level screening should start at community level.

Keyword: Hypertension, Diabetics, Systematic review, Ethiopia, Non communicable disease

Abs 115

Prevalence of Undiagnosed Diabetes Mellitus and Its Risk Factors in Selected Public Institutions at Bishoftu Town, East Shoa, Ethiopia.

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Background: Diabetes mellitus (DM) has significant public h ealth importance and its prevalence is rising. Globally half of DM patients are undiagnosed. Undiagnosed DM impose substantial implications because subjects remain untreated and at risk for complications. Therefore, the aim of this study is to determine the prevalence of undiagnosed DM and its risk factors in selected public institutions at Bishoftu town, East Shoa, Ethiopia.

Materials and Methods: Cross-sectional study in selected public institutions at Bishoftu town was conducted from December 2012 to February 2013. 422 volunteers with age ranged from 20 to 70 years were selected proportionally from five institutions. World Health Organization stepwise approach was employed to collect data on demographic, behavioral and physical characteristics. Blood sample after fasting for ≥ 8 hours was collected and serum was assayed for glucose, total cholesterol and triglycerides. Statistical analysis was performed by using STATA (Version 11 USA).

Results: Among the study subjects 62.3% (n=263) were males and 37.7% (n=159) females. The overall prevalence of undiagnosed DM in the study was 5% [95% CI: 3-7%]. Though not statistically significant undiagnosed DM was higher in males (5.7% vs. 3.7%, P>0.05). Increased occurrence of undiagnosed DM was observed with increasing age but again not statistically significant (P>0.05). Univariate analysis showed undiagnosed DM to be significantly associated (P<0.05) with body mass index, waist circumference, alcohol consumption, history of hypertension and high triglyceride level. Predictors for undiagnosed DM in the study were high waist circumference (P=0.001, OR: 7.70 95% CI: 2.31-25.67) and history of hypertension (P=0.009 OR: 3.7495% CI: 1.39-10.03) after adjusting age, family history of DM, and body mass index.

Conclusion: Higher prevalence of undiagnosed DM than the International Diabetes Federation Atlas projected estimate of DM for Ethiopia was observed in the current study. This calls for the necessity of conducting such studies in wider scale and bring more oblivious patients for medical attention.

Keywords: Prevalence, Undiagnosed diabetes, Risk factors, Public Institutions, Bishoftu

Measles Outbreak Investigation in Nedjo District, West Wellega Zone, Oromia Region, Ethiopia.

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Introduction: Measles is a leading vaccine preventable contagious infectious disease caused by a paramyxovirus of the genus *Morbillivirus*. On Feb 15, 2015, a suspected measles outbreak was reported from West Wellega Zone, Nedjo District. We conducted investigation to confirm the outbreak, identify risk factors and implement control measures.

Methods and Materials: we defined a case and controls as per WHO case definition, any person in Nedjo District, with fever and macula-papular, cough, Coryza, or conjunctivitis or any person that a clinician had suspected as measles and controls defined as any person without sign and symptoms of the disease. A 1:1 ratio unmatched case control study was conducted in Feb, 2015 and structured questionnaire used to collect data from 60 cases and 60 controls. We analyzed data using Epi-Info-7

Results: A total of 251 measles cases were identified from six Kebeles. There were no deaths reported. The median age was 10-years [ranging: 6 month and 70-year]. Of total cases 154(61%) female and 97 (39%) were male. The overall attack rate (AR %) was 1.6%. In multivariate analysis the factors that remained statistically significantly associated with measles illness were being unvaccinated for measles [Adjusted Odds Ratio (AOR) =7.37; 95% CI (1.74, 31.17)], P=0.006], Travel history 2-3 weeks prior to onset of illness [AOR=10.34; 95% CI (1.87, 57.1)], presence of measles case/s at home [AOR=3.29; 95% CI (1.15, 9.47)].

Conclusion: A confirmed measles outbreak occurred in Nedjo District, West Wellega Zone of Oromia Region. It primarily affected under 15 years. Being unvaccinated was the major risk factor identified. We recommend enhancing supplementary immunization activities, strong ongoing active case surveillance of febrile rash illness; health education on treatment and prevention of Measles to be enhanced and continued in the community by health workers.

Keywords: Measles, Outbreak, Nedjo District, Ethiopia.

Strengthening the Public Health Emergency Management (PHEM) System: The Amhara Region Experience, 2011-2015, Ethiopia.

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Background: In Ethiopia, emergencies of various origins including natural and manmade conditions are major public health emergencies resulting in high morbidity and mortality due to increased risk and occurrences of communicable disease outbreak, acute malnutrition and climate related diseases. Hence, strengthening the public health emergency management (PHEM) system has indispensable significance in keeping the public health security. The overall aim of this study was to review the PHEM activities in Amhara region, May 2015.

Methods: We reviewed available documents such as the Amhara regional health bureau (RHB) surveillance data, log books, human resource, outputs of residents of the Ethiopian Field Epidemiology Training program (EFETP), weekly bulletins and feedbacks, individual & organizational certificates. Then, data analysis was made using Epi Info version 3.5.3 and Microsoft Excel softwares.

Results: The PHEM system implemented in 2009 in Amhara RHB and FETP graduates deployed in 2011 for the first time. Between 2011 and 2015, the overall average regional weekly surveillance report completeness and timeliness increased from 27% to 97.5% and from 17% to 97.5% respectively. In the above similar reporting periods, the RHB has conducted 32 outbreak investigations, 13 surveillance data analysis, 11 surveillance system evaluations, confirmed 112/126 registered rumors, preparedness and response plans had been done, which were not practiced before 2011. Ten oral and seven poster articles accepted and presented at scientific conferences, seven manuscripts also published in peer reviewed journals, which never done before. A PHEM bulletin has been published every week without interruption for the last three years. During the same period of time the Amhara RHB's PHEM staff increased from six to twelve and the number of FETP graduates increased from

zero to 11. Unlike the previous years, the bureau has been receiving weekly surveillance data by district uninterrupted for the past three years (This enables to make risk mapping of districts).The Regional PHEM ranked second in 2013 and first in 2014 and awarded certificate of recognition at the annual national review meetings. It also ranked first from 11 core processes (departments) of the Amhara RHB and *a star worker of the year of RHB staffs of 2014* came out from the PHEM core process; i.e., FETP graduate. *A PHEM pocket guide book for health workers* had been also published/printed and distributed to all health facilities, districts, zones and town administrations in the region.

Conclusion and Recommendation: The synergetic effect of the PHEM and the Field Epidemiology Training Program have resulted in dramatic improvement of public health surveillance, preparedness and response activities of the Amhara RHB. PHEM staff's utilization of data and ability to use the tools of epidemiology supported in evidence based decision making for leaders. Therefore, The RHBs, The Federal Minister of Health and relevant stakeholders should continue their support to PHEM core process/unit and also encourage EFETP graduates to be positioned in PHEM for further strengthening and expanding this approach to districts level.

Keywords: Public health emergencies, FETP, Amhara RHB, Ethiopia

Predictors of Treatment Failure among Adult Antiretroviral Treatment (ART) Clients in Bale Zone Hospitals, South Eastern Ethiopia.

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Background: One of the major concerns over the rapid scaling up of Antiretroviral Treatment (ART) is the emergence and transmission of HIV drug resistant strains at the population level. This could lead to the failure of basic ART programs. This study aimed to investigate the predictors of treatment failure among adult ART clients in Bale Zone Hospitals, South east Ethiopia.

Methods: Retrospective cohort study was employed in four hospitals of Bale zone named Goba, Robe, Ginir and Delomena. The Federal Ministry of Health (FMOH) ART follow up form was used as a data extraction format. The data were collected from the ART database of the hospitals by the data clerk working at each hospital. The Kaplan Meier (KM) curve was used to describe the survival time of ART patients without treatment failure. Bivariate and multivariable Cox proportional hazards regression models were used for identifying associated factors of treatment failure. Adjusted hazard ratios (AHR) with 95% confidence intervals were done. In multivariable Cox-regression model variables at p-values <0.05 were concluded as associated factors of treatment failure.

Result: The overall treatment failure incidence rate was 9.38 (95% CI: 95% CI: 7.79-11.30) per 1000 person years. In multivariable Cox proportional hazards regression analysis: Male ART clients were 4.49 times more likely to experience treatment failure as compared to females [AHR=4.49; 95 % CI :(2.61-7.73)]. Similarly, lower CD4 count at initiation of ART was found significantly associated with higher odds of treatment failure [AHR= 3.79; 95% CI: (2.46- 5.84). Bedridden [AHR=5.02; 95% CI: (1.98-12.73)] and ambulatory [AHR=2.12; 95% CI: (1.08-4.07)] patients were more likely to experience treatment failure as compared to patients with working functional status. TB co-infected clients had higher odds to experience treatment failure [AHR=3.06; 95% CI: (1.72-5.44)]. ART clients who had developed TB after ART initiation had higher odds to experience treatment failure as compared to their counter parts [AHR=4.35; 95% CI: (1.99-9.54]. Having other opportunistic infection during ART initiation was also associated with higher odds of experiencing treatment failure [AHR=7.0, 95% CI: (3.19-15.37)]. Similarly having fair [AHR= 4.99 95% CI: (1.90- 13.13)] and poor drug adherence [AHR=2.56; 95% CI: (1.12-5.86)] were significantly associated with higher odds of treatment failure as compared to clients with good adherence.

Conclusion: The rate of treatment failure in Bale zone hospitals needs attention. Promotion of ART initiation at higher CD4 level, and better baseline functional status, improving drug adherence, prevention and control of TB and other opportunistic infections were the recalled recommendations to decrease treatment failure among ART clients in Southeastern Ethiopia.

Abs 119

Investigation on Antidiarrhoeal and Antimicrobial Activities of 80% Methanolic Leaf Extract of Descopodium Penninervum (Hochst).

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Background: Diarrhoea is a major health problem worldwide especially in developing countries of the world. In Ethiopia Descopodium Penninervum is used for the treatment of tapeworm infestation and diarrhea.

Objective: The aim of this study was to evaluate the antidiarrheal and anti-microbial effect of Descopodium Penninervum.

Method: In-vivo experimental method for antidiarrheal test and in-vitro experimental method for anti-microbial test was used in this study. The antidiarrheal effect of the plant was tested on castor oil-induced diarrhea, castor oil induced enteropooling and small intestinal transit in mice. The effect of the extract was assessed and compared to the negative control and then the extent of effect was analyzed using one way analysis of variance (ANOVA). For the antimicrobial activity test four standard bacteria were used and disc diffusion method was used.

Results: Inhibition of castor oil induced diarrhea was observed at all tested dose 100mg/kg, 200mg/kg and 400mg/kg. The inhibition of intestinal fluid accumulation was significant at 200mg/kg and 400mg/kg non-significant at 100mg/kg. In intestinal motility test the percent traversed by charcoal meal was 78.77 ± 10.64, 65.74 ± 8.92 and 48.34 ± 6.70 at the dose of 100, 200 and 400mg/kg respectively. The percent of length traversed by the charcoal meal in the negative control mice was inhibited by 8.48%, 23.62% and 43.48% at the doses 100 mg/kg, 200 mg/kg and 400 mg/kg, respectively.

Conclusion: Generally, the leaf extract of Descopodium Penninervum was found to be effective in preventing castor oil induced diarrhea and intestinal motility significantly, especially at the maximum dose, so the plant extract can be a potential source for antidiarrheal medicine.

Keywords: Descopodium Penninervum leaf extract, Antidiarrhoeal, Antimicrobial.

Evaluation on Use of Ceftriaxone Injection at Dessie Referral Hospital.

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Background and objective: Irrational use of medicines reduces quality of care, wastes resources, causes antimicrobial resistance, may harm patients and undermine public health. One of the approaches to improving drug use is to understand existence of problems and the extent to which they occur. This study is therefore, conducted to identify problems related to utilization of Ceftriaxone.

Method: Cross sectional study was conducted by reviewing records of patients who were admitted at Dessie Referral Hospital, from February 8 - September 10, 2013. 102 in-patient charts fulfilling the inclusion criteria were reviewed. Six process and four outcome milestones were analyzed against a threshold of 95-100% using Ethiopian standard treatment guidelines as benchmark.

Results: Medical ward accounted for highest utilization (40.2%) of ceftriaxone. Laboratory test performed before treatment 71(69.61%) and appropriate indication 59(57.84%) were amongst process milestones with highest score. Ceftriaxone was appropriately prescribed as the first/second line agent only to 56(54.91%) patients. Ceftriaxone was found administered to 27(26.47%) patients on the basis of inappropriate diagnosis. 19 (18.62%) patients received Ceftriaxone with no diagnosis recorded in their charts. Clinical improvement was recorded only in 18(17.65%) of charts. GPs 68(66.67%) represent the Lion's share in prescribing Ceftriaxone.

Conclusion and Recommendation: In this drug use evaluation study, results for both the process and outcome indicators were found to be below the threshold. The practices on prescribing and use of antimicrobials and documentation of medical records should be improved. The hospital DTC should take actions on prescribing and use of ceftriaxone and conduct similar evaluations on other medicines.

Keywords: Ceftriaxone, DUE, Dessie referral hospital, DTC, Threshold

Chemo Preventive Effect of *Coffee Arabica* on Precancerous Colorectal Lesions Initiated and Promoted by DMH: In Experimental Rat Model.

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Colorectal cancer is a malignant tumor recognized as a major cause of morbidity and mortality throughout the world. The aim of the present study was to evaluate chemopreventive potential of *Coffee arabica* in DMH-induced colorectal carcinogenesis in the rat model. 35 female wistar rats were randomly divided into 7 equal groups. Rats in group I-VII except group VI (received normal saline) were given freshly prepared DMH (20 mg/kg, intraperitonial) in normal saline and pH adjusted (7.0) in 1mM NaOH, once a week for 5 weeks.

Groups II and III were received additional oral dose of *Coffee arabica* (20 mg/kg and 40 mg/kg, respectively) in the initiation phase. Group IV and V were received the same dose of *Coffee arabica* given for group II and III, respectively in the post-initiation phase. Group VII was received low dose aspirin orally.

After 10 weeks of treatment period, blood was withdrawn, and then animals were scarified for experimental studies. Taken together, the result of this study showed that well characterized preneoplastic features such as multiple plaque lesions, aberrant crypt foci and histological differences were significantly found in the DMH alone treated group. The effects were significantly reduced in DMH followed by *Coffee arabica* or Aspirin treated groups.

Our result also showed that appreciable counteracts effect of *Coffee arabica* on serum biomarkers observed in DMH alone treated. The inhibitory effects of *Coffee arabica* on the progressions and invasion of colorectal preneoplastic lesions is thus of great importance and will provide promising targets for preventive and therapeutic interventions of CRC.

In Vivo Antidiarrheal Activity of Indigofera Spicata, Fabaceae.

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Background: Till now many of medicinal plants having claimed therapeutic value traditionally are waiting scientific verification of their efficacy and safety. Accordingly, this study is conducted to evaluate the antidiarrheal activity of hydromethanolic root extract of *Indigofera spicata* Forssk.in castor oil induced diarrhea model, misoprostol induced secretion model and antimotility activity using charcoal as a marker.

Methods: In all the three models the animals were randomly allocated into five groups of six animals each and then group I mice were received 1ml/100gm normal saline, group II were treated with standard drug as a positive control whereas group III, IV and V were treated with 100mg/kg, 200mg/kg and 400mg/kg extract doses, respectively. Statistical significance of differences in the mean of number of defecations, fluid content of faces, intestinal fluid accumulation ratio, intestinal fluid weight and distance travelled by charcoal between groups was analyzed by SPSS version-21 using one way ANOVA followed by Tukey's post hoc multiple comparison.

Result: The hydromethanolic crude extract of *Indigofera spicata* at 200 and 400mg/kg mg/kg doses showed statistically significant ($p < 0.05$) inhibition of both the frequency of defecation and weight of the fluid content of the faces compared to the negative controls and the percentage inhibition was 43.62% and 53.51%, respectively. The anti-secretary activity of the extract in terms of fluid accumulation ratio was not found significant but in terms of intestinal fluid weight, all the extract doses revealed significant ($p < 0.05$) inhibition. Unlike the standard drug, the antimotility activity of the extract was not found statistically significant compared to the negative control.

Conclusion: Root of *Indigofera spicata* Forssk. Has promising antidiarrheal activity which validates its traditional use. And possibly the plant may serve as a potential source of new agent in the therapeutic armamentarium of diarrhea.

Keywords: Antidiarrheal, Indigofera spicata, castor oil, ethnopharmacology

Abs 123

Adjunctive Dexamethasone Therapy in Unconfirmed Bacterial Meningitis in Resource Limited Setting: is it a Risk worth Taking?

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Background: Bacterial meningitis is associated with significant morbidity and mortality despite advances in medical care. The main objective of this study was to assess effect of adjunctive dexamethasone treatment on the outcome of unconfirmed bacterial meningitis in low income settings.

Methods: A retrospective study was conducted at four teaching hospitals across Ethiopia. Patients of age 14 years and older treated as cases of bacterial meningitis between January 1, 2011 and April 30, 2015 were included in this study. Information regarding socio-demographic data, presenting clinical symptoms, available laboratory data, treatments given and status at leaving the hospital were retrieved from medical records of patients using structured questionnaire. Predefined outcome variables at leaving hospital were analyzed using descriptive statistics. Multivariable logistic regression was used to identify factors independently associated with poor outcome.

Results: A total of 425 patients treated with the presumptive diagnosis of bacterial meningitis were included in this study. The overall in hospital mortality rate was 20.2%. Impaired consciousness, aspiration pneumonia, and cranial nerve palsy at admission were independently associated with increased mortality. Adjuvant dexamethasone, which was used in 50.4% of patients, was associated with increased in-hospital mortality (AOR = 3.38; 95% CI 1.87-6.12, p<0.001) and low Glasgow Outcome Scale at discharge (AOR = 4.46 (95%CI 1.98-10.08). The negative association of dexamethasone with unfavorable outcome persisted despite thorough subgroup analysis based on patients' clinical characteristics.

Conclusion: Adjunctive dexamethasone treatment was associated with poor outcome at discharge. This finding reaffirms potential deleterious effect of corticosteroid in unconfirmed cases of bacterial meningitis in resource limited settings. Practitioners in such settings should thus abide with the current evidence-based recommendations and defer use of dexamethasone in bacterial meningitis.

Effect of Crude Leaf Extract of Osyris Quadripartitaon Plasmodium Bergheiin Swiss Albino Mice.

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Continuous emergence of multi-drug-resistant malaria parasites and their rapid spread across the globe warrant urgent search for new anti-malarial chemotherapeutics. Traditional medicinal plants have been the main sources for screening active phytochemicals against malaria. Accordingly, this study was aimed at evaluating the anti-malarial activity of *Osyrisquadripartita*Salzm. Ex Decne, a plant which is used for traditional malaria treatment by local people in different parts of Ethiopia. Aqueous, chloroform and methanol crude leaf extracts of the plant have been prepared and tested for acute toxicity and anti-malarial efficacy in *Plasmodium berghei* (ANKA strain)-infected Swiss albino mice. At three oral doses of 200, 400 and 600 mg/kg the plant material was safe, chemosuppressive and thus prevented body weight loss, hematological abnormalities and increased mice mean survival time compared to the negative control.

The most efficacious extract was that of chloroform which prolonged mean mouse survival past day 11 of infection with all the mice in this group having the highest parasitemia suppression rate (41.3 %, at 600 mg/kg) although parasite clearance was not achieved compared to the standard drug (chloroquine) against the parasite.

The finding supports the traditional use of the plant for the treatment of malaria. However, further confirmatory studies followed by isolation and characterization of the active anti-malarial compound(s) of the plant that is/are responsible for the observed parasite suppression is needed.

Keywords: Antimalarial activity, *Osyrisquadripartita*, *in vivo*, *Plasmodium berghei*, Swiss albino mice, Ethiopia

Poster Presentations

Behavioural and Communication

Abs 01

Knowledge and Awareness of Cervical Cancer among HIV Infected Women in Ethiopia. _Netsanet Shiferaw_, MPH; _Konjit Kassahun, MPH; Mengistu Asnake, MD, MPH_

Introduction: Cervical cancer, a largely preventable disease, is the leading cause of cancer death among Ethiopian women. Low awareness of cervical cancer, in combination with overall low health care seeking behavior of women, is a key challenge for cervical cancer prevention in Ethiopia. The aim of the study was to assess the knowledge of cervical cancer and associated factors among HIV-infected women in Ethiopia.

Methods: A facility based cross-sectional survey was conducted from August to September 2012 to measure the knowledge and awareness of cervical cancer among HIV-infected women between the ages of 21 and 49. Basic descriptive statistics, bivariate and multivariable analysis were performed on survey data using SPSS (version 20).

Results: A total of 432 HIV-infected women participated in this study; the median age was 33 years (mean=34.1; SD=4.8). About 71% of participants had heard of cervical cancer. Among women that had ever heard of cervical cancer, 49% did not know the cause of cervical cancer while 74% of women were able to identify at least one risk factor for cervical cancer. Furthermore, only 33% of women were able to correctly address when the women should seek care for cervical cancer and 33% identified at least one treatment option for cervical cancer. Education and geographic location were predictors of women having above average knowledge of cervical cancer.

Conclusion: The results of this study revealed that even though most HIV-infected women have heard of cervical cancer, knowledge about cervical cancer was generally low. In particular, the knowledge gaps were observed on care seeking behavior and treatment of cervical cancer. Awareness raising programs on cervical cancer prevention and control should be strengthened. Special emphasis must be placed on the causes, risk factors, care seeking behavior, and treatment options for cervical cancer.

Keywords: Cervical Cancer, Knowledge, Awareness, HIV, Ethiopia

Assessment of Knowledge, Attitude and Practice of TB Infection Control Among Medical Laboratory Professionals in Selected DOTS Providing Health Facilities under Addis Ababa City Administration Health Bureau, Addis Ababa, Ethiopia.

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Background: Tuberculosis is one of the major public health problems and health workers, especially laboratory professionals, are at high risk areas for infection compared to the general population. Infection control measures are not always implemented even when HCWs are well informed. Insufficient studies were found that examine the level of knowledge, attitude and practice about TB infection control mechanisms among medical laboratory professionals in Ethiopia.

Methods: Cross sectional study was conducted in Addis Ababa between September 2014 and May 2015 on 213 Medical Laboratory professionals in selected DOTS providing government health facilities. Pre-tested and self-administered questionnaire were used. Data entry and analysis was performed by using SPSS version 20 software. Descriptive statistics, bivariate and multivariate analysis were made. The level of statistical significance was set at $p<0.05$.

Results: A total of 213 participants filled the questionnaires (response rate were 95.9%) the mean knowledge score was 7.69± (SD 2), mean attitude score were 44.63± (SD 4) and mean practice score were 10.56± (SD 2.75).Statistically significant association were observed between total knowledge and last training (AOR=5.03, 95%CI=2.129, 11.901) and presence of TB manual (AOR=0.108, 95%CI=0.037, 0.315). Total attitude score had significant association with level of health facility (AOR=2.715, 95%CI=1.262, 5.841). Total practice score had significant association with the duration last training obtained (4.77, 95%CI=2.173, 10.472).

Conclusion: About 33.3% of the study participants had poor knowledge, 46.9% of them had negative attitude and 41.8% of them had poor practice. We recommend that there must be continuous refresher training and supply of infection prevention tools, personal protective equipment and guidelines for medical laboratory personnel that could improve their knowledge, attitudes and practice towards tuberculosis infection prevention.

Keywords: Knowledge, Attitude, Practice, Laboratory professionals, Tuberculosis infection control.

Diabetes Self-Care Practice and Its Associated Factors among Diabetic Patients: In Public and Private Primary Level Health Care, Addis Ababa, Ethiopia, 2015.

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Background: Diabetes mellitus as one of the rapidly increasing non communicable diseases in sub-Saharan Africa currently, it requires continuous medical care and mainly patient's life time self-care practice to prevent acute and chronic complications. Various factors influence one's ability to perform diabetes self-care and these factors are not typically stable for all patients. Despite the importance of identifying these factors for health care providers to individualize clinical approaches, as to the current knowledge of the investigator there is no comprehensive assessment and documentation in Ethiopia particularly at primary health care level even though it is the first line of contact to the health care system.

Objective: To assess the magnitude of self-care practice and associated factors among diabetic patients who are on follow up at primary level health care (public and private) in Addis Ababa, Ethiopia

Methods: Facility based, cross-sectional study design was conducted from February to March 2015.A total of 595 diabetic patients were selected by systematic random sampling method from both public health centers and private clinics in Addis Ababa. Data was collected using an interviewer administered pre tested questioner. Descriptive analysis was done. Bivariate and multivariate logistic regression was also done to identify factors that were associated with diabetic self -care practice. The odds ratio with 95% CI was used to determine the association. A statistical significance was declared at p value <0.05.

Result: Among 595 respondents about 311(52.3%) had good diabetic self-care practice. The mean (SD) age of the respondents was 53.5(14) and 343(57.6%) were male. The presence of co-morbidities (AOR=1.68, 95%CI; 1.07-2.65), having glucometer at home (AOR=2.01, 95%CI; 1.19-3.38), diabetic association membership (AOR = 3.02, 95%CI; 1.30-7.04), follow up in private

clinics (AOR=3.05, 95%CI; 1.55-5.97), treatment satisfaction (AOR =1.69, 95%CI; 1.08-2.59) were significantly associated with good self-care practice.

Conclusion: The study demonstrated substantial number respondent had poor self-care. Good self-care was associated with having glucometer at home, diabetic association membership, attending follow-up in private clinics, treatment satisfaction.

Keywords: diabetes self-care, primary level health care, Diabetes

HIV Sero-Prevalence and Sexual Behaviours of Haramaya University's Students: Implication for Intervention.

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Introduction: HIV/AIDS is affecting young members of the societies especially adolescents between the age of 15 to 24 who are vulnerable and at risk of the disease. It is also estimated that most regular undergraduate university students lie within the age group of 18 to 24 years. The college environment offers great opportunity for HIV high-risk behaviors, including unsafe sex. College students are at risk because they tend to be sexually adventurous, often with multiple partners and do not consistently use condoms. Representative studies on HIV sero prevalence with sound methodology is not done in Ethiopian Universities. Therefore, this researchers, aimed to identify HIV-sero prevalence among University students from February to March 2014

Methodology: cross sectional quantitative study design was employed among 3984 Haramaya University regular undergraduate students. They were selected by stratified random sampling proportional to ten college, level of education and gender. Data were obtained by interview and blood sampling.

Result: 3984 University students were participated in this stud of which 71% (2799) of them were male. Forty six percent (1820) were 21 and above years old. Blood was drawn from 3399 students for HIV test. Among over all tested students HIV sero-prevalence was 0.9% and 3.6% of sexually active students were HIV positive; 27.1% of the students were experienced sex and 41.3% had multiple sexual partners about 58% of participants were used condom during recent sex. 13.1% of the students had gotten pregnant. A significant number of students were initiate sex because of peer pressure and their sexual partners were out of fellow students. Those who had STI and stress were more likely to get pregnant (AOR=15(7.08-31.9) and 1.66(1.02-2.69)) respectively. Drinking alcohol (OR=14.9(2.40-91.9) having sex because gift(OR= 8.722.12-35.70),and having sex with teacher(OR= 6.912(1.08-43.9)is associated with HIV infection.

Conclusion: A significant numbers of students has multiple sexual partners, had not use condom consistently and had sexual partners out of the university compound. This study identified student populations who were at risk of HIV, STI, unwanted pregnancy and multiple sexual partners. This hazardous sexual behavior may affect students' current academic performance and future productivity. Therefore prompt intervention is needed to combat such risk behaviors and in-turn improve health and maximize the productivity of future generation of the country.

Level of Knowledge, Attitude, Practice of Integrated Community Case Management and Associated Factors among Mothers of Under Five Children at Awabel Woreda, Northwest Ethiopia 2014.

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Background: Ethiopia has one of the highest child mortality rates in the world, cognizant of this, the government of Ethiopia recently introduced integrated community case management to make health care accessible to the community. However, communities knowledge, attitude, practice have not yet been assessed.

Objective: To assess knowledge, attitude, practices and associated factors of integrated community case management among mothers who have under 5 years of age children in Awabel Woreda, Northwest Ethiopia, 2014.

Method: A community based cross sectional study was conducted on 845 mothers who have under five children selected by simple random sampling. The collected data were entered by Epi data 3.1 and analyzed using SPSS version 16.0 software. Both bi-variant and multivariate logistic regression model were used to identify factors associated with knowledge, attitude and practice of integrated community case management and p –value less than 0.05 was considered to declare statistically significant association.

Result: The study revealed that 72.4%, 63% and 53.5% of the respondents had sufficient knowledge, favorable attitude and good practice on integrated community case management. ANC follow up (AOR=1.49, 95%C.I:1.09, 2.05), Source of information and husband education showed significant association with knowledge. Distance from health institutions (AOR=3, 95% C.I: 2.25, 4.05), knowledge of respondents (AOR= 7.99, 95% (5.53, 11.55), family income, husband education, respondents education and ANC follow up showed significant association with attitude. Respondent's knowledge (AOR=2.73, 95%C.I:1.92, 3.90), distance from health institutions (AOR=3.13, 95% C.I: 2.29, 4.27), knowledge of respondents (AOR=2.73, 95%C.I:1.92, 3.90), family monthly income, source of information and respondents attitude showed significant association with practice.

Conclusion: The study revealed that most respondents had sufficient knowledge on ICCM and also they had favorable attitude towards integrated community case management, but there was not significant change on practice of mothers and measure has to be taken to improve child care practices of rural women is important.

Keywords: *Children, knowledge, attitude, practice and Awabel.*

Keywords: Neonates, Macrosomia, Debre Markos and Birth Weight

The Role of Community Support Groups in Strengthening Cervical Cancer Prevention Service in Ethiopia.

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Background: Though highly preventable, cervical cancer (CC) remains a major cause of cancer related death for women. Besides the limited availability ofeffective preventive services in developing settings like Ethiopia, the low awareness of the community make women disproportionately affected of CC and poses a greater challenge to access the service in the areas even the service is available.

The community awareness gap on cervical cancer prevention (CCP) which calls for action initiated Pathfinder International Ethiopia's CCP *"Addis Tesfa"* project to establish a CCP community support groups(peer educators) parallel to the introduction of the Single Visit Approaches (SVA) for CCP program among HIV-infected women. This abstract will share the experience of *Addis Tesfa* project's CCP community support group's contributions in strengthening the service that will be successfully implemented in similar programs.

Methods: Fourteen project facilities were established in the regions of Tigray, Amhara, Oromia, Southern Nations and Nationality Peoples and Addis Abba city administration in a phase based approach following the completion of the required preparations and launch of the project in 2009.To reach out the community with CC prevention key messages, inform on the availability of effective preventive services, increase the demand for the service and establish referral linkages, recruitment of the trainees with the prior focus to women-based PLHIV associations, HIV/AIDS care adherence supporters and mother support groups was done. A two days training was provided using a customized training material developed by Pathfinder for this purpose. Regular performance monitoring and support was given to the trained members. Documentation of the activities was made on the developed registration format.

Results: A total of 413 CCP support group members were trained of whom 55 were menin ensuring males involvement in the CCP programs. The trained groups were delivering CC preventive key messages and distributed CCP IEC/BCC materials every morning at waiting areas of the hospitals, during their home based care visits and using different public gathering events. Using the referral slip, members were referring clients to the hospitals and were also receiving a feedback for client follow-up from service providing facilities. Following the training and orientation on the service, most of the women in the trained groups were received CCP service and were serving as the advocate and ambassador of the service by sharing their experience in

public and providing one to one counseling for women. In addition, CCP support groups played a major role in the tracing of lost to follow-up care clients. The combination of the efforts which encompassed the strong community awareness generation approach through CCP support groups along with the use of variable media awareness generation approaches enabled the project to reach 18,193 women aged 30-45 years to receive CC screening service which greatly surpassed the original target of 5,000 women. Ninety four percent of the 1,879 VIA positive screened women received treatment for their precancerous lesions. During the project period, 332751 individuals (182909 females and 149842 males) were also reached with daily CCP health information.

Conclusion: Putting a community awareness creation at the heart of cervical cancer prevention programs in developing settings is among the key strategies for the success of the program.

Keywords: CCP support groups (peer educators), CCP awareness

Facilitators and Barriers of Timely Initiation of Breastfeeding among Mothers in South Gondar Zone, Amhara Regional State, Ethiopia.

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Introduction: Worldwide more than 7.6 million children under the age of five die each year. Of the 26 countries worldwide with under-five mortality rates above 100 deaths per 1,000 live births in 2010, 24 are in Africa. Among others, inappropriate breastfeeding practices contribute significantly to child mortality

Objective: To assess barriers and facilitators for timely initiation of breastfeeding among mothers in south Gondar, Amhara region, Ethiopia.

Methods: The study employed a community-based cross sectional study design whereby a multistage stratified sampling technique was used to select participants. 823 mothers were interviewed out of a calculated sample size of 845, producing a response rate of 97.4%. Quantitative data was collected by face-to-face interviews using a structured questionnaire, while the qualitative data was collected during focus group discussions. Quantitative data was entered, cleaned and analyzed using SPSS version 16. The qualitative data was transcribed and translated into English and analyzed manually. The transcribed data was read carefully, color coded, categorized into themes and presented in the narratives and triangulated with findings from the quantitative data.

Results: The prevalence of timely initiation of breastfeeding in the South Gondar Zone was 48.7% (54.7% in urban and 25.1% in rural areas). The qualitative study revealed that timely initiation of breastfeeding was due to information received from healthcare providers and family supports. Whereas early child bathing, prelacteal foods, misconceptions about colostrum, insufficient breast milk secretion and maternal and neonate illness were barriers for timely initiation of breastfeeding. The quantitative data revealed that mothers residing in urban areas (AOR=2.1, 95%CI=1.4-3.3), multiple parity (AOR=2.8, 95 CI%=2.0-3.8), ANC attendance (AOR=3.2, 95% CI%=2.0-5.2), institutional deliveries (AOR=3.1, 95% CI=3.1(2.2-4.6) and vaginal deliveries (AOR=4.1,95%CI=1.7-9.8) increase the odds of initiating breastfeeding within one hour of birth as compared to their respective counterparts.

Conclusion and Recommendations: This study depicts that the prevalence of timely initiation of breastfeeding was low in the South Gondar Zone. Urban residence, multiple parity, ANC attendance, institutional deliveries, vaginal delivery, health information and family support were found to be facilitators of initiating breastfeeding within 1 hour of birth. Barriers for timely initiation of breastfeeding include early child bathing, prelacteal foods or fluids, bad perception of colostrum, insufficient breast milk secretion and maternal and newborn illness. The results suggest that all the facilitators and barriers of timely initiation of breastfeeding practices are within the scope of the health system to either maintain the facilitators or eliminate the barriers to healthcare access

Small Scale Water Treatment Practice and Associated Factors at Burie Zuria Woreda Rural Households, Northwest Ethiopia, 2015.

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Introduction: The fact that water is a basic human necessity, forces humans to use or even drink water from any sources safe or unsafe. Needless to say, consuming unsafe water results in infection with and /or death from water borne diseases. Though there is an increasing effort from government to access safe water still there are households with limited access and their water treatment practice is not known in the study area.

Objective: To assess magnitude of small scale water treatment practices and associated factors at household level in Buriezuria woreda, North West Ethiopia, in 2015

Methods: Community based cross-sectional study design with multi-stage sampling technique was used. A total of 797 households included in the study. Completeness of questionnaires were checked daily and data were coded and entered into Epi-Data and transported to SPSS version 16 software package for analysis. Binary logistic regression was done to identify associated factors at 95% CI and P-value <0.05.

Result: A total of 797 out of 846 participants responded to a questionnaire with a response rate of 94.2%. The mean age of respondents was 44.9±10.7 years. Among the total study participants, 357(44.8%) of them were practicing small scale water treatment at household level. Associated factors were female sex(AOR=1.80, 95%CI=1.24-2.62), educational status (AOR=2.07, 95%CI=1.51-2.83), the way of fetching water (AOR=4.11, 95%CI=2.89-5.85) and frequency of fetching water (AOR=4.90, 95%CI=2.92-8.22) and (AOR=3.76, 95%CI=1.97-7.18) were found to be significantly associated with small scale water treatment practice at household level with P-value <0.05.

Conclusion and Recommendations: Small scale water treatment at household level is still low. Females, educated, dipping way of fetching and those who fetch more than twice a day were significant factors for water treatment. Therefore females' practice should be maintained and scale up for males. Those with no primary education need special emphasis by water and health offices in the woreda to treat water. Though those fetched water in dip were found to be good for water treatment pouring should be practiced since it may reintroduce microorganisms.

Community Health Seeking Behavior for Suspected Human and Animal Anthrax Cases, Gomma District, Southwest Ethiopia.

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Background: Timely presentation of sick animals/humans from anthrax to appropriate health service providers is important for early case/outbreak/ detection and management. However, data on community's health seeking practices for anthrax in Ethiopia is limited. Therefore the objective of this study was to determine community's health seeking behavior for suspected human and animal anthrax cases, Gomma district, Southwest Ethiopia

Methods: Community based cross-sectional survey was conducted from January 16-February 14, 2015 to collect data from 808 respondents using multistage sampling technique. Data about socio-demographic characteristics and community health seeking behavior was collected using interviewer administered structured questionnaire. Edited data were entered to Epi data version 3.1 and analyzed using SPSS version 20 for windows.

Result: Eight hundred three (99.4%) respondents with mean age of 40.1±10.5 years participated in the study.   The majority of them were: male (63.8%), rural residents (94%) and farmers in occupation (49.3%). Three hundred seventy eight (77%) and 191 (67.5%) of the respondents reported that sick family member and domestic animals received treatment from health centers and veterinary clinics in the past 12 months respectively. Two respondents reported that their family members were victims of anthrax for which both of them sought treatment from hospital. More than nine in ten (98.2%) of the respondents perceived that humans suspected of anthrax should seek help; 92.2% of them suggested modern health care facilities as the preferred management option for the sick humans. Twenty four respondents reported that they had sick domestic animals from anthrax in the past 12 months, ten of these respondents reported they either slaughtered for human consumption, sold immediately, visited traditional healer, given home care or done nothing for the sick domestic animals. In addition 57.4% of the respondents believed that animals died of anthrax needs to be reported and 60% of them believed that the report should only be to animal health care providers.

Conclusion: The majority of the respondents had favorable perception of seeking treatment from modern health care facilities for anthrax. However, significant number of them had slaughtered for human consumption, sold immediately, visited traditional healer, given home care for the sick domestic animals. Hence, raising awareness of the community about management of sick domestic animals from anthrax, reporting to both human and animal health service providers and policy formulation on sick animal consumption is required

Treatment Seeking Behavior and Associated Factors among Malaria Suspected Patients in Bale Zone, Southeast Ethiopia: Institution-Based Cross-Sectional Study.

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Introduction: Seeking the treatment within twenty four hours from the first symptom and effective treatment are important for controlling the transmission of malaria. But there is no study done on treatment seeking behavior of malaria patients. Thus, this study aimed to assess treatment seeking behavior and associated factors among malaria suspected patients in Bale Zone, Southeast Ethiopia.

Materials and Methods: An institution-based cross-sectional study design was employed among three hundred eleven malaria suspected patients in malaria endemic public health institutions of Bale Zone, Southeast Ethiopia in March, 2014. Proportionally allocated sample size was collected consecutive lyuntil the required sample size fulfilled from eleven health institutions providing microscopic diagnostic test for malaria patients. The data were analyzed using SPSS. Descriptive statistics, binary and multiple logistic regressions were employed to identify those factors that determined treatment seeking behavior.

Result: From the total respondents (297) fully responded to the survey87.8% (260) of them did not seek treatment within the recommended fist24 hours from onset of illness. 15.2% (45) of the patients sought treatment from non-medical center before coming to the health institution. Perceived susceptibility for malaria and having knowledge of mosquito nets as means of mosquito bite prevention were independently associated with treatment seeking behavior. Those respondents who had low perceived susceptibility of malaria diseases sought 0.24 times less likely when compared with those respondents who perceived malaria as a deadly disease (AOR= 0.24; CI 95%: 0.07-0.85).

Conclusion: Majority of the respondents did not seek treatment for the disease within the right time, which is from the first onset of symptoms. Perceived susceptibility for malaria disease was the best predictor for the respondents to sought treatment early. On the other hand delayed in seeking treatment behavior is alarming to health institution, district health office and health extension workers as this will enhance malaria transmission. Thus, malaria prevention and control program should focus these identified factors.

Keywords: Malaria; Treatment seeking behavior; associated factors

Exclusive Breast Feeding Practice and its Associated Factors among Mothers of Infants Less Than Six Month of Age in Debre Tabor Town, Northwest Ethiopia: A Cross Sectional Study.

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Background: Exclusive breastfeeding for the first six months of life is recommended by the World Health Organization and United Nations Children's Fund. It is one of the of the important public health strategy to avert the child and maternal health problems. However, the prevalence of exclusive breastfeeding is very low in many developing countries including Ethiopia.

Objectives: The study was aimed to assess the Prevalence of Exclusive Breast Feeding practice and its associated factors Among Infants Aged Six Months in Debre Tabor Town, Northwest Ethiopia.

Methods: community based cross sectional study was conducted from April to May, 2014. Data were collected using pretested and structured questionnaire through face-to-face interview. A total of 470 participants were included in the study. All filled questionnaires were entered in to EPI info version 3.5.3 statistical software and then exported to SPSS windows version 16 for further analysis. Data were summarized and presented using descriptive summary statistics. Odds Ratios with their 95% CI were computed and variables having p - value less than 0.05 in the multivariable logistic regression were considered as significantly associated with the dependent variable.

Result: Of 470 mother-infant pair's samples, 453 were included in the final analysis. The overall age appropriate rate of EBF practice was found to be 70.8%. Having an infant aged 2-3 month [AOR= 2.3 (95% CI: 1.12, 6.42)], place of delivery [AOR=3.8(95% CI: 2.18, 7.323)], occupation of the mothers [AOR=2.4(95%CI (1.22, 6.92)], Receiving counseling/advice on infant feeding [AOR=2.1(95%CI:1.61, 5.41)] and colostrums feeding [AOR=1.53(95%CI: 1.28, 7. 98)] were found to be significantly associated with EBF practice.

Conclusion and Recommendation: Prevalence of exclusive breast feeding in the study area was comparable to other studies. Promoting institutional delivery, revising the leave after birth, advice and counseling pregnant mother about EBF, and enabling every mother to encourage colostrom feeding were recommended in order to increase the proportion of women practicing exclusive breast feeding.

Keywords: Exclusive breastfeeding, Associated factors, Ethiopia.

Prelacteal Feeding Practices and Associated Factors among Mothers of Children Aged Less Than 24 Months in Woldia, Kobo and Lalibela, North Eastern Ethiopia: A Community Based Cross-Sectional Study. *Nigus BililignYimer, Woldia University; Henok Kumsa, MSc; Mussie Mulugeta, MSc; Yetnayet Sisay, MSc.*

Background: In spite of the negative impact of prelacteal feeding on the growth and development of children, it is widely practiced in Ethiopia.

Objective: This study aimed to assess prelacteal feeding practices and associated factors among mothers of children aged less than 24 months in North Wello zone.

Methods: A quantitative community based cross-sectional study was employed during March 2015. Eight hundred forty four (844) mother-child pairs were selected by multi stage sampling technique. Data were collected by face to face interview. Descriptive statistics, binary and multiple logistic regression analyses were employed to identify the factors associated with prelacteal feeding practice. Variables with P-value <0.05 were identified as statistically significant factors.

Results: The prevalence of prelacteal feeding was 11.1% (95% CI: 9.0%, 13.0%). Colostrum discarding (AOR: 8.7; 95% CI (3.8, 20.1)) and lack of counseling on breastfeeding (AOR: 2.6; 95% CI (1.27, 5.4)) were the factors associated with prelacteal feeding practice. The major reasons stated for providing prelacteal feeds were "culture" and "do not have enough milk".

Conclusion: Prelacteal feeding is practiced nearly on one child in every tenin North Wello zone. Colostrum removal and lack of counseling on breastfeeding at ANC are important positive predictors of prelacteal feeding practice. Awareness of the risks associated with prelacteal feeding, promotion of counseling on breast feeding and health benefit of colostrum during ANC visits are recommended interventions to reduce prelacteal feeding practices in the study areas.

Keywords: Prelacteal, factors, Ethiopia

Determinants of Neonatal Care Practice among Mothers in Public Health Institutions; a Cross Sectional Study in Addis Ababa, Ethiopia.

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Background: In developing countries, the risk of death in the neonatal period is six times greater than in developed countries .Millions of newborns die every year, though these deaths could be easily preventable and avoided with simple, low-cost and short period of time.

Objective: To assess the determinants neonatal care practice among mothers in public health institutions of Addis Ababa from September 2012 to May 2013.

Methods and Materials: A cross-sectional descriptive study was carried with the total sample size of 592 mothers. All mothers visit maternal and child health unit of public health institution of Addis Ababa was study population. Data was collected using structured, pre-tested questionnaire by trained data collectors. Data entered to Epi Info version 3.5.1 for cleaning and analysis was done by SPSS version 16.0. Logistic regression analysis was used to identify the determinant factors.

Result: of newborns 96% institutional deliveries, 58.3% initiate breastfeeding within an hour, 57.8% of mothers delay bathing after 24 hours; 27 % mothers use applicants on cord of their neonate. Home visit by health extension worker and institutional health education were significantly associated with timely initiation of breastfeeding. Health education improve early initiation of breast feeding [AOR= 2.1(1.4-3.1)]. Cord care practice was associated with educational status, occupation and parity of the mother. Employed mothers more likely to delay bathing after 24 hr than not employed ones. AOR [95%: CI (1.5(1.02 -2.17].

Conclusion: In this setting, level of essential neonatal care practices is generally poor. Health education and women empowerment can make a difference in neonatal health

Magnitude of Self-care and Associated Factors among HIV infected individuals in Selected Health Facilities in Addis Ababa, 2014.

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Introduction: self-care is the ability of individuals, families and communities to promote health, prevent disease, and maintain health and to cope with illness and disability with or without the support of a health-care provider. Despite the fact that 1.2 million people living with HIV, literature search revealed that there is limited information with regard to self-care practice in people living with HIV/AIDS in Ethiopia.

Objective: The main objective of this study was to assess the magnitude of self-care practice and associated factors among people living with HIV in Addis Ababa, Ethiopia, 2014

Methods: A cross sectional study design was conducted. Multi stage sampling methods were used. Sample size was 846. Data were entered and analyzed using SPSS and logistic regression model was fit. P value < 0.05 and CI at 95 %which was considered to declare result as statistically significant. Ethical clearance was ensured from Debre Markos University.

Result: Total of 846 respondents was involved in the study. Mean age of 37 years, 51.3 % were female. Majority 57.92 % of them had good self-care practice. Participants aged > 44 (AOR = 0.177, 95% CI: 0.082-0.368) and who shared their thought with no one (AOR = 0.613, 95% CI: 0.423-0.888) were associated with self-care practice.

Conclusion and Recommendations: Most of the participants had good self-care practice. Older Age, living status and having support were factors associated with self-care practice. Patients and clinicians should improve more self-care more than this study. Older patients and patients with limited social support should get due attention for self-care.

Adherence to Antiretroviral Therapy and its Associated Factors among Children at South Wollo Zone Hospitals, Northeast Ethiopia: A Cross-Sectional Study.

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Background: Poor adherence to antiretroviral therapy negatively affects its ability of suppressing viral replication. It increases risks of drug resistance, treatment failure, AIDS related morbidity and mortality among children.

Objective: The aim of this study was to assess the level of adherence to antiretroviral therapy and its associated factors among children at hospitals in South Wollo Zone, Northeast Ethiopia.

Methods: An institution-based cross-sectional study was conducted among HIV-infected children in April 2013. A total of 464 children who were taking ART in the hospitals were included. Data were collected using pretested and structured questionnaires using a face-to-face interview method. Descriptive and summary statistics were employed. Bivariate and multiple logistic regressions were computed. Odds ratios and their 95% confidence intervals were computed to determine the level of significance.

Results: Of the 464 study samples, 440 children with their caregivers were included in the final analysis (response rate = 94.8%). A total of 78.6% of the caregivers reported that their children were adherent to antiretroviral therapy in the month prior to the interview.
Caregivers' knowledge about antiretroviral treatment [AOR=2.72(95%CI: 1.82, 5.39)], current substance use of the caregivers [AOR=2.21(95%CI: 1.34, 7.13)], distance from the health facility [AOR=2.31(95%CI: 1.94, 4.63)], if the child knows HIV-positive status [AOR=3.47(95%CI: 2.10, 6.81)] and caregiver's educational status [AOR=0.59(95%CI: 0.21, 0.82)] were significantly and independently associated with adherence of children to antiretroviral therapy.

Conclusion: Adherence of antiretroviral therapy in this study was comparable to other studies conducted in developing countries. Caregiver's knowledge about antiretroviral therapy, non-usage of substances, close proximity to health facilities, and disclosure of the child's HIV status improves adherence to antiretroviral therapy. Health care providers should educate caregivers about antiretroviral therapy and encourage HIV positive status disclosure to the child.

Assessment of Knowledge and Practice of Health Workers towards Tuberculosis Infection Control and Associated Factors in Public Health Facilities of Addis Ababa, Ethiopia: A Cross-Sectional Study. *Girma Demise Gizaw, Zewdie Madera Alemu and Kelemu Tilahun Kibret.*

Background: Tuberculosis is the leading causes of mortality among infectious diseases worldwide. The risk of transmission from patients to health workers is doubles that of the general population. The close contact to the infectious case before diagnosis is the major risk for tuberculosis infection. The aim of the study was to assess knowledge and practice of health professionals towards tuberculosis infection control and its associated factors in health facilities of Addis Ababa, Ethiopia.

Methods: A cross-sectional study was conducted from February 29 to April 15/2014 in selected health facilities in Addis Ababa. Five hundred ninety health workers were included in the study. The sample size was assigned to each health facility proportional to their number of health workers. Study subjects were selected from each stratum by simple random sampling technique. Interviewer administered structured questionnaire was used to collect information. Logistic regression was used to identify factors associated with knowledge and practice of health workers towards tuberculosis infection control.

Result: Five hundred eighty two participants with 98.6% response rate were involved in the study. Of these, 36.1% had poor knowledge and 51.7% unsatisfactory practice score towards tuberculosis infection control. Having more than six years working experience in health facility (AOR = 2.51; 95% CI: 1.5-4.1) and tuberculosis related training (AOR = 2.51 95% CI; 1.5, 4.1) were significantly associated with knowledge on tuberculosis infection control. Having experience in tuberculosis clinic (AOR =1.93; 95% CI: 1.12, 3.34) and tuberculosis related training (AOR = 1.48; 95% CI: 1.87, 2.51) were significantly associated with practice on tuberculosis infection control.

Conclusion: One third of health workers had relatively poor knowledge and nearly half of them had unsatisfactory practice on tuberculosis infection control. Tuberculosis training and work experiences in health facility are determinant factor to knowledge. Whereas tuberculosis related training and experience in tuberculosis clinic are predictor to practice. So, training of the health professionals, on job orientations of junior health workers, and farther study including private health workers are recommended.

Keywords: Knowledge, Practices, Health worker, Tuberculosis infection control

Awareness and Practice of Pregnant Women towards Dietary Habit Change during Pregnancy in Arba Minch Town and A/Minch Zuria Woreda, Gamo Gofa Zone, 2015. <u>*Shikur Mohammed,*</u> *BSc, MPH/Epidemiology; Befikadu Tariku, BSc., MSc, College of Medicine and Health Sciences, Arba Minch University; Mesfin Kote, BSc., MPH, College of Medicine and Health Sciences, Arba Minch University.*

Introduction: Maternal health is affected both short and long term by what, how much, and how often they eat. A varied, regular diet increases pregnant mothers' chances to obtain the energy and nutrients they need throughout the day.

Objectives: The aim of this study was to assess awareness and dietary habits of pregnancy mothers in Arba Minch Town and A/Minch Zuria Woreda, Gamo Gofa Zone, 2015

Methods: A cross sectional study was conducted among 392 pregnant women in Arba Minch Town and Arba Minch Zuria woreda, 2015. The study participants were selected using systematic sampling technique. Data were collected using pre-tested and structured questioners by trained data collectors. Data were processed and analyzed using statistical software's. Descriptive statistics like frequencies were used to describe the study population in relation to relevant variables. To identify predictors of dietary habits of pregnant mothers' logistic regression model was fitted to predict and control the effect of confounders.

Results: Findings from this study showed that 59% pregnant mothers had awareness about dietary habit change during pregnancy and 50.3% of pregnant mothers changed their dietary habit during their current pregnancy. Pregnant mothers' dietary habit change practice was significantly associated with mothers'; awareness about dietary habit change during pregnancy (AOR = 7.23, [95%CI: 4.22, 12.75], attended formal education (AOR = 3.08, [95%CI: 1.60, 5.92], being at gestational age of 2nd trimester (AOR = 2.48 [95% CI: 1.05, 5.05]), monthly income >=2000birr (AOR= 1.95 [95%CI: 1.12, 3.40], and current health problem (AOR = 0.37, [95%CI: 0.20, 0.69].

Conclusion: Findings from this study showed that the prevalence of pregnant mother's awareness about dietary habit change and dietary habit change practice during pregnancy is not as such adequate. Therefore, health professionals and community health workers should counsel/advise pregnant mothers, how often/amount to eat, and how to get balanced diet at home level in the study settings.

Keywords: Awareness, dietary habit, dietary change practice, pregnancy

Prevalence of Group B Streptococci Colonization and Susceptibility Pattern among Pregnant Women Attending Antenatal Care Clinics of Health Institutions, Addis Ababa, Ethiopia.

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Background: Group B *Streptococci* (GBS) is the leading cause of septicemia, meningitis and pneumonia in neonates. Maternal colonization with GBS is the principal risk factor for early-onset of invasive GBS disease in infants. GBS is now recognized to be an important cause of maternal and neonatal morbidity and mortality in many parts of the world; however, it has been little studied in Ethiopia.

Objectives: to determine the prevalence of GBS colonization, antibiotic susceptibility pattern and identify risk factors related to GBS among pregnant women attending antenatal care clinics of Health Institutions in Addis Ababa, Ethiopia.

Methods: A cross sectional prospective study was conducted from May-August, 2014.Clinical and socio-demographical data was collected using structured questionnaire after obtaining written informed consent. A total of 281 vaginal swabs were collected by consecutive sampling technique and inoculated into Todd Hewitt Broth and later sub cultured on 5% sheep blood agar for isolation of GBS. Antimicrobial susceptibility testing was performed according to the criteria of the clinical and laboratory standard institute (CLSI) guidelines 2013 by disk diffusion method.Data was entered and analysed using SPSS version 20.0 software. Chi-square test and binary logistic regression analysis were used. P-value < 0.05 were considered statistically significant.

Results: The overall prevalence of GBS colonization among pregnant women was 14.6% (41/281). GBS colonization was significantly associated with health institutions and inversely related with history of contraceptive use (P<0.05). All GBS isolated were susceptible to chloramphenicol. Resistance to tetracycline, cefotaxime, clindamycin, penicillin, vancomycin, ampicillin and erythromycin was 90.2%, 34.1%, 26.8%, 19.5%, 17%, 14.6% and 7.5% respectively.

Conclusion: There was high frequency of GBS colonization (14.6%) and resistance to the commonly used antibiotics which suggests the importance of the screening of GBS colonization in pregnant women at 35-37 weeks of gestation and testing their antimicrobial susceptibilities in order to provide antibiotic prophylaxis.

Keywords: Antimicrobial susceptibility testing, Group B *Streptococci*, Prevalence, Risk factors

Stool Antigen Test for the Detection of *Helicobacter Pylori* and Risk Factors among Dyspepsia and Non-Dyspepsia Adults at Assosa General Hospital, West Ethiopia: A Comparative Study.

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Background: *Helicobacter pylori* is a curved gram-negative bacteria which causes gastritis and peptic ulcer disease. It is also an important risk factor for the development of gastric cancer and mucosal associated lymphoid tissue lymphoma. Many studies revealed that the prevalence of *H. pylori* infection varies with geographical region, socio-demographic characteristics and environmental conditions.

Objective: The main objective of this study was to assess the prevalence of *Helicobacter pylori* infection and related risk factors among dyspeptic and non-dyspeptic adults at Assosa General Hospital

Methods: A comparative cross-sectional study was conducted among 230 (115 dyspeptic and 115 non-dyspeptic) study participants at Assosa General Hospital selected consecutively from March 1, 2015 to October 1, 2015. Stool sample was collected and the presence of stool antigen against anti-*H. pylori* precoated antibody was determined. A structured face to face interview was also taken to assess risk factors for the infection. Logistic regression was used to estimate odds ratios at 95% CI to the different risk factors. P-values less than 0.05 were taken as significant level.

Results: Of a total of 230 stool samples, an overall 112 (47.4%) *H. pylori* were isolated. The prevalence of *H. pylori* infection in dyspeptics and non-dyspeptics was 67(58.3%) and 45(39.1%) respectively. Females 69(61.6%) had a higher isolation rate of *H. pylori* than males 42 (38.4%). The isolation rate of *H. pylori* was significantly associated with gender [AOR=0.36, 95% CI: 0.19-0.68), p = 0.002]. Further, the prevalence of *H. pylori* infection was significantly higher [AOR=0.37, 95% CI: 0.20- 0.70, p= 0.002] in dyspepsia patients than non-dyspepsia individuals. No significant association was observed in the prevalence of *H. pylori* with family number, educational status, marital status, income, source of water and occupation (p > 0.05). Being illiterate has a higher chance of acquiring *H. pylori* infection [COR=0.14, 95% CI: 0.02- 0.79, p=0.026], but it was confounded by different factors as it was manifested by its adjusted ratio [AOR=0.37, 95% CI: 0.10- 1.40, p=0.151]. However, a significant association was observed between *H. pylori* infection and residence [AOR=14.1, 95% CI: 5.1- 39.1, p <0.01]. Among personal habits: alcohol drinking, cigarette smoking and khat chewing did not have significant association with *H. pylori* infection (p> 0.05). There was no significant association between occurrence of *H.*

pylori and coffee drinking habit. Observing the associations of personal life styles with prevalence of *H. pylori,* toilet use and hand washing habit after toilet had a significant association with it (p>0.05).

Conclusion: The prevalence of *H. pylori* infection was high among symptomatic than non-symptomatic adults. *H. pylori* infection was significantly affected by sex, residence area, toilet use and hand washing habit after latrine, but was not related to age, consumption of alcohol or tobacco, family number, educational status, marital status, income, source of water and occupation.

Bacterial Indoor-Air Load and its Implications for Healthcare-Acquired Infections in a Teaching Hospital in Ethiopia.

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Background: Microbial quality of indoor-air in healthcare facilities is essential for the wellbeing of the occupants. Lack of regular cleaning and disinfection practices of the hospital environment is among the main factors for the spread of healthcare-associated infections (HAIs).

Objectives: To determine the profile, load and antimicrobial susceptibility pattern of indoor-air bacterial isolates from medically sensitive rooms of Adama Hospital Medical College in Ethiopia.

Methods: A total of 78 indoor-air samples were collected from 29 medically most sensitive rooms of the teaching hospital, from May to August 2013. Settle plate sampling technique was used to obtain the index of bacterial air contamination. A 90mm diameter Petri-dish containing 5% defibrinated Sheep Blood agar (Oxoid, UK) was left open according to the 1/1/1 scheme to recover all possible bacterial colonizers. The samples were processed following standard bacteriological procedures at Oromia Regional Public Health Laboratory. The colony forming units were calculated in CFU/m^3. Data were analyzed using SPSS version 20.0.

Results: Overall, 237 bacterial isolates were recovered with an average of 3.21 bacterial species per room of sampled indoor-air. The predominant isolates observed were coagulase negative staphylococci (CNS) (32.9%), *Bacillus* sp.(23.2%), *S. aureus*(15.6%) and *Pseudomonas* spp.(8%). Bacterial indoor-air load in all the hospital rooms included in the study was higher than the acceptable limit. The highest mean colony forming units 12,053±1831.1cfu/m^3 was obtained in Obstetrics ward followed by surgical wards 8,792.1±2943.7cfu/m^3. Eight percent of the *S. aureus* and 7.6% of the CNS isolates were resistant to 8 and 7 classes of antimicrobials, respectively. Moreover, 10(27%) of *S. aureus* strains were Methicillin Resistant *S. aureus.*

Conclusions: The indoor-air bacterial load of the hospital rooms was far beyond the acceptable standard limit. Profile of the isolates was worrisome due to the presence of diversified group of established agents of HAI, and the resistance of the isolates to the commonly prescribed antibiotics. Hence, safety precautions should be strictly followed in the hospital wards to prevent tragic outcomes of HAIs.

Prevalence of Uropathogen and Their Antibiotic Resistance Pattern among Diabetic Patients at Hawassa University Teaching and Referral Hospital, Southern Ethiopia.

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Background: Diabetes mellitus (DM) and antibiotic resistance is an emerging public health problem in Ethiopia. Urinary tract infections (UTIs) are a common and occasionally life threatening condition among diabetic patients. Despite, all these problems, antibiotics are prescribed empirically which may adversely affect antibiotic resistance so far. Therefore the aim of this study was to identify the etiologic agents of UTI and their antibiotic resistance pattern of diabetic patients attending diabetic clinic of Hawassa University Teaching and Referral Hospital.

Methods: A cross-sectional study was conducted in a total of 240 diabetic patients from June to October, 2014. After obtaining an informed written consent, socio-demographic and clinical data were collected using pre-structured questionnaire. Clean catch mid-stream urine specimen were collected and processed for identification of uropathogen through culture using standard microbiologic procedure. Antibiotic susceptibility test was carried out using Kirby-Bauer disc diffusion method.

Result: The overall prevalence of diabetic UTI was 13.8%. Out of the total population, 11.2% and 23.1% had asymptomatic and symptomatic bacteriuria, respectively. DM patients with no previous history of UTI [AOR = 3.55; 95%CI=1.186 - 10.611] and illiterate in educational status [AOR = 2.5; 95%CI= 1.052 - 5.989] had higher odds of UTI compared with their counterparts. *E. coli* was the commonest isolated uropathogen followed by CoNS. All the isolated bacteria were 100%, resistant and sensitive to ampicilin and nitrofurantoin respectively. Gram negative isolates demonstrated that high level of resistance to trimethoprim-sulphamethoxazole 9(81.8 %), gentamicin 8(72.7%) and ceftriaxone 7(63.6%). Gram positive bacteria showed resistance to penicillin 14(87.5%), norfloxacin 10(62.5%) and ciprofloxacin 8(50.0%). Multidrug resistance was observed in 93.9% of the isolated uropathogens.

Conclusion: The overall prevalence of diabetic UTI was 13.8%. DM patients with no previous history of UTI and illiteracy were significantly associated with UTI. *E. coli* was the commonest isolated uropathogen. Nitrofurantoin can be used as drug of choice for empiric treatment of UTI in the study area. Multidrug resistance is alarming to commonly used antibiotics. Therefore, performing of urine culture and periodic surveillance should be done for DM patients.

Key points: Diabetes mellitus, urinary tract infection, bacteriuria, antibiotic resistance

Immunogenicity of Leishmania Derived Antigens in Peripheral Blood Mono-Nuclear Cells Isolated from Previously Treated Visceral Leishmaniasis, South West Ethiopia.

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Background:-Visceral leishmaniasis is a public health problem and it is fatal if untreated. Disease burden is associated with poverty, lack of effective, affordable, and minimally toxic treatments. An effective vaccine is needed to combat this disease.

Method: Peripheral blood mononuclear cell-based assays were set-up in blood samples obtained from drug-cured VL patients (DC-VL), who are putatively immune to re-infection. DC-VL patients were those treated at least six months prior to sampling. Nine *Leishmania* derived antigens were selected, and together with whole lysate antigen and Phytohaemagglutinin (PHA), assessment of immunogenicity was carried out by cytokine assays using ELISA kit. The assay aimed at measuring IFN-gamma, TNF-alpha, IL-10 and IL-5 in culture supernatants of PBMCs stimulated in vitro. The association of cytokine production with groups and immunogenicity difference of antigens was determined by using non-parametric tests (Mann Whitney & Tukey's Multiple Comparison tests) found in Graph Pad Prism version 6.

Result: Drug-cured visceral leishmaniasis (VL) patients develop protection mediated by Th1-type cellular responses against new infections. We evaluated cytokine responses against 9 candidate vaccine antigens including PHA and LSA in PBMCs of 18 drug-cured VL subjects and 5 healthy controls. IFN-gamma, TNF-alpha and IL-10 production were higher in drug-cured groups, but neither drug-cured nor healthy controls produce IL-5. The data suggest the mounting of Th1 type responses upon cure from visceral leishmaniasis, while small amounts of IL-10 were also measurable. NS, S, PNS and NSL were more immunogenic than other antigens as determined by levels of IFN-gamma, TNF-alpha and IL-10.

Conclusion: This study indicates that T cell recall ability of humans cured from VL by chemotherapy was conspicuous and related to Th1 type immune response. Further, the data confirm that high levels of IFN-gamma and TNF-alpha in the presence of low levels of interleukin-10 (IL-10) could be proxy indicators of protective immunity in drug-cured visceral leishmaniasis patients. Among tested antigens NS,NSL,PNS and S were more immunogenic and elicit high level of IFN-gamma and TNF-alpha in PBMCs of drug-cured with the range of (16-1826 mg/ml).

Hematological Abnormality and Associated Factors among Children in Anti Retroviral Therapy Naïve and on Highly Active Anti Retroviral Therapy at Felege Hiwot Referral Hospital, Bahir Dar, Northwest, Ethiopia. *Yakob G/Egziabhe, MSc, National Blood Transfusion Service; Mulugeta Melku, MSc, Universitry of Gondar, College of Medicine and Health science; Zelalem Addis, PhD candidate Universitry of Gondar, College of Medicine and Health science; Agerie Tadelle, MSc, Universitry of Gondar, College of Medicine and Health Science.*

Background: Human Immunodeficiency virus infection is a multi-system disease. Hematological abnormalities are among the most common complications of HIV/AIDS in children.
Objective: To assess hematological abnormalities and associated factors among children who were in Pre- ART and on HAART at Felege Hiwot Referral Hospital, Bahir Dar, Northwest, Ethiopia.

Methods and Material: A cross sectional study was conducted among children living with human immunodeficiency virus attending at Felege Hiwot Referral Hospital. Systematic random sampling method was used to select the study participants. After full informed consent and assent was obtained, socio demographic data were collected using a pre tested structured questionnaires. Blood was drawn and hematological profile was obtained by performing hematological tests. The data were entered, cleaned and edited, using EPI info version 3.5.2 and was exported in to SPSS version 20 for analysis. Descriptive statistics, independent t-test and chi square were used for analysis. Both bivariate and multivariate logistic regression was employed to assess the association between outcome and independent variables on the basis of P value <0.05 at 95% confidence interval.

Result: The study enrolled 224 participants (112 antiretroviral therapy naïve and 112 on antiretroviral therapies. The mean (SD) age of the children were 8(+3.46) years and mean (SD) CD4 percentage was 26.73+14.22. The prevalence of anemia, leucopenia, and thrombocytopenia was 15.2%, 14.7% and 4.9% in pre-ART, whereas it was, 14.3%, 12.9% and 3.1% on HAART respectively. CD4% and MCV had statistical significant mean difference in hematological parameters of ART naïve and on HAART. The prevalence of anemia in severe immune suppression was 47.5% and severity of immune suppression (AOR=3.97 (95% CI1.33-11.85) and Gastroenteritis (AOR= 4.00, 95% CI1.10-14.53) were found to be the independent predictors of anemia while age 12-14 years were preventive factor. Leucopenia was associated with oral

esophageal thrush (AOR=5, 95% CI 1.6-16.9), being female (AOR=0.512 (95% CI 0.27-0.98), farmer (AOR=5.8 (95% CI (1.6-20.4) and governmental employed (AOR=4 (95% CI 1.14-14.37).

Conclusion: Hematologic abnormalities were common problems among the children in pre ART and On HAART. Therefore, especial emphasis should be given for investigation and management of hematological abnormalities among children living with HIV/AIDS, those who had low CD4%, with the presence of gastroenteritis and oral esophageal thrush.

Xpert MTB/RIF Assay for the Diagnosis of Mycobacterium Tuberculosis and its Rifampicin Resistance at the Felege Hiwot Referral Hospital in a High TB and HIV Burden Setting: A First Implementation Research.

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Background: The Xpert MTB/RIF (Xpert) test is a novel automated real-time PCR based assay which considered as a great advance over conventional smear and culture in the diagnosis of tuberculosis (TB) and multidrug resistant (MDR) TB by simultaneously detecting *M. tuberculosis* (*M.tb*) and rifampicin (RIF) resistance. However, the use of this novel diagnostic method is still limited in a high TB and HIV burden setting.

Materials and Methods: A cross sectional study aimed to describe the suspected TB cases and to discuss the impact and accuracy of Xpert test to support diagnosis of *M.tb* and its refampicin resistance with no *M.tb* culture facilities at Felege Hiwot Referral Hospital (FHRH), which has been operated in January, 2015, was conducted. A total of 544 TB suspected patients for diagnosis using Xpert test from January to November, 2015 were included in the study. All patients with complete demographic and clinical data were analyzed. All data were entered, cleared, and analyzed using SPSS statistical software package. A p value less than 0.05 was considered to indicate statistical significance.

Results: Among 544 patients 307 (56.4%) were males. The mean age of patients was 31.2 years. Among the study subjects, 223 (41%) of them were HIV positive. Of all TB suspected patients, Xpert result showed that 94 (17.3%) were positive for *Mycobacterium tuberculosis complex* (MTBC). Among the total TB positive patients, RIF resistance was detected from 11 (11.7%) cases. However, clinically the report of presumptive MDR- TB was at 51.3% (279/544). Out of the total Xpert test positive patients, 39 (41.5%) were found to be HIV positive. Xpert result showed statistical significant difference among the different age groups (p= 0.010)

Conclusions: In the studied region, large proportion of TB suspected patients were wrongly diagnosed for MDR-TB. Therefore, in health facility settings like FHRH using Xpert assay will decrease unnecessary use of anti-TB drugs and will improve rapid TB diagnosis and proper treatment.

Keywords: TB, GeneXpert MTB/RIF assay, Felege Hiwot Referral Hospital

Hematological and Lipid Profiles of Blood Donors at Red Cross Center in Addis Ababa. *Eskedar Awlachew.*

Background: Physiological range of clinically important hematological laboratory values and lipid profiles of healthy population in Ethiopia is not well assessed.

Objective: to determine hematologic and lipid profiles of healthy blood donors in Addis Ababa.

Methods: Red Cross Society located in Addis Ababa was selected as a study area. 336 donors; age range between 18-58 years participated. Venous blood sample was collected by tube containing (Ehtylenediaminetetraaceticacid tri potassium) EDTA K_3 for hematology test and sterile tube for lipid test. After centrifugation serum was extracted for lipid test and transported to St. Pauls's Millennium Medical College (*SPHMMC)* within 5-8hrs of sample collection. IBM.SPSS version 21 was used for data analysis, statistical significance was set at $P < 0.05$ and 95% CL was accepted.

Results: *Red blood cell count (*RBC), mean corpuscular volume (MCV), platelet count and triglyceride (TG) level were significantly higher in the present study than a reference range. RBC indices, white blood cell (WBC), Hemoglobin HGB, hematocrit (Hct) High density lipoprotein (HDL), low density lipoprotein (LDL) and, total cholesterol (TC) were higher in the reference range used in clinical practice. Significantly higher (RBC (p=0.000), Hg (p=0.000), Hct (p=0.000) and mean corpuscular HGB concentration (MCHC (p=0.009) were observed in the male. Significantly higher platelet count and HDL were observed among females (p=0.001 and p=0.001 respectively). No significant change in hematological laboratory values and lipid profiles was seen across age groups.

Conclusion: It is evident from this study that hematological and lipid variables obtained were statistically significantly different from the reference range currently used in clinical practice

Keyword: Hematological profile, Lipid Profile, Normal Values, Addis Ababa

In Vitro Anti-Mycobacterial Activity of Selected Medicinal Plants Against *Mycobacterium Tuberculosis and Mycobacterium Bovis* Strains.

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Background: Tuberculosis (TB) is a global burden with one – third of the world ' s population infected with the pathogen *Mycobacterium tuberculosis* complex and annually 1.4 million deaths occur due to the disease. This high incidence of infection and the increased rate of multi-drug resistant and extensively-drug resistant strains of the organism further complicated the problem of TB control and have called for an urgent need to develop new anti-TB drugs from plants. In this study, the in vitro activity of root of *Calpurnia aurea*, seeds of *Ocimum basilicum*, leaves of *Artemisia abyssinica, Croton macrostachyus,* and *Eucalyptus camaldulensis* were evaluated against *M.tuberculosis* and *M. bovis* strains.

Methods: Five Ethiopian medicinal plants, root of *Calpurnia aurea*, seeds of *Ocimum basilicum*, leaves of *Artemisia abyssinica, Croton macrostachyus*, and *Eucalyptus camaldulensis* used locally for the management of TB. They were investigated for in vitro antimycobacterial activity against *M. tuberculosis* and *M. bovis* strains. 80% methanolic extracts of the plant materials were obtained by maceration. The antimycobacterial activity was determined using 96 wells of microplate with the help of visual Resazurin Microtiter Assay.

Results: The crude 80% methanolic extracts of the root of C. aurea, seeds of O. basilicum, and leaves of *A. abyssinica, C. macrostachyus*, and *E. camaldulensis* had anti-mycobacterial activity with minimum inhibitory concentration (MIC) ranging from 6.25 – 100 μ g/mL. The MIC of 80% methanol extracts in the order mentioned above ranged 25-100 μ g/ml and 12.5-75 μ g/mL, 25 – 100 μ g/mL and 25 – 50 μ g/mL, 6.25-50 μ g/mL and 12.5-50 μ g/mL, 12.5-100 μ g/mL and 18.25-50 μ g/mL and 6.25-50 μ g/mL and 12.5-50 μ g/mL, respectively for *M. tuberculosis* and *M. bovis* strains.

Conclusions: The results support the local use of these plants in the treatment of TB and it is suggested that these plants may have therapeutic value in the treatment of TB. However, further investigations are needed on isolating chemical constituents responsible for eliciting the observed activity in these plants.

Keywords: Antimycobacterial activity, Medicinal plants, MIC, REMA, M. tuberculosis & M. bovis strains, Ethiopia

Hematological Parameters and Hemozoin- Containing Leukocytes in Children with Malaria: Association with Disease Severity at Pawe General Hospital, Northwest Ethiopia.

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Background: Hematological parameter changes are the most common complications in malaria. Severe malarial anemia is the most prominent one, particularly in children. Sever malaria can be associated with higher prevalence of hemozoin-containing monocytes.

Objective: we aimed to determine the hematological parameters and hemozoin-containing leukocytes in children with malaria and their association with disease severity.

Methods: we conducted a facility-based cross sectional study in Pawe general hospital from July 31 to December 30, 2014. A total of 377 malaria infected children aged from 1 to 15 years were recruited for the study. Demographic and clinical data were collected using a structured questionnaire. We collected venous blood and stool specimen from each study participant. Blood specimens were examined for complete blood count and hemoparasite. The complete blood count was analyzed using CELL-DYNE 1800® hematology analyzer (Abottdiag, USA). Stool specimens were examined for intestinal parasitic infection. Data were analyzed using statistical package for social science version 20 (Chicago, Inc.)

Results: From the total study participants, 40.3% (n=152) were anemic. Leukocytosis was found in 15.4% (n=58) of study participants. Hemozoin containing monocytes and hemozoin containing neutrophils were found in 80.1% (n=302) and 58.9% (n=222) of the study participants, respectively. Leukocytosis (AOR=3.20, 95% CI: 1.65-6.24), mean hemozoin-containing monocytes >5% (AOR=6.26, 95% CI: 2.14-14.29), and mean hemozoin-containing neutrophils >5% (AOR=7.93, 95% CI: 3.09-16.86) were identified as independent predictors of severe malaria.

Conclusion: Anemia, thrombocytopenia, hemozoin-containing monocytes and hemozoin-containing neutrophils were common hematological abnormalities in children infected with malaria. Hemozoin containing leukocytes and leukocytosis should be considered for early identification of patients at risk of severe malaria.
Keywords: Malaria, Hemozoin containing leukocytes,

Generation of Hepatocyte and Biliary Epithelial-Like Cells from Human Multipotent Adult Progenitor Cells (Mapc) by Trans-differentiation into Foregut Endodermal Progenitor-Like Cells.

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Introduction: Treatment options of liver failure and chronic liver disorders like transplantation or bio-artificial liver devices, as well as *in vitro* pharmacological studies have been limited by the scarcity of organ donors. Moreover, primary hepatocytes can only be maintained in culture for a limited time because of rapid loss of phenotypic and functional characteristics. Therefore, there is an on-going search for alternative sources of hepatocytes, including hepatocytes derived from embryonic, induced pluripotent or even adult stem cells.

Objective: Lineage-specific reprogramming of somatic cells has provided the basis for our hypothesis that, using defined transcription factors (TF), it should be possible to reprogram hMAPC into foregut endoderm progenitors.

Results: Here we demonstrate that endodermal progenitors can be generated from hMAPC by transduction of 14TF and endoderm-favorable culture conditions. Following reprogramming hMAPC, underwent mesenchyme-to-epithelium transition (MET), forming clusters of epithelioid cells that express endodermal genes and proteins (such as CXCR4), as demonstrated by RT-qPCR and FACS. Furthermore, these induced endodermal progenitor cells (iEndo cells) were differentiated into hepatocytes (morphologically mono- or binucleated cuboidal cells) and biliary epithelial-like cells using classical cell culture as well as 3D spheroid cultures. RT-qPCR revealed up-regulation($p < 0.05$) of hepatocyte-specific genes (e.g. *ALB, AFP, AAT*) and biliary epithelial cell-specific genes (e.g. *HNF1B, KRT19, SOX9*) as compared to undifferentiated iEndo cells. Further cells were subjected to functional characterization using Albumin ELISA, immunoy to chemistry and CYP3A4 activity indicating the presence of these functions comparable to hepatocyte like cells differentiated from Human embryonic stem cells.

Conclusions: In general, generation of hepatocyte-like and biliary epithelial - like cells from hMAPC by trans-differentiation into iENDO cells may be an alternative cell source to be used for cell transplantation, drug screening and disease modeling.

Prevalence of Rifampicin Mono Resistant *Mycobacterium Tuberculosis* among Suspected Cases at Gondar University Hospital, Northwest Ethiopia: A Cross Sectional Retrospective Study.

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Background: Multidrug resistant tuberculosis has been a cause of concern in both developed and developing countries. Rifampicin resistance is a valuable surrogate marker of multi drug resistant tuberculosis and it also resistance to isoniazid. The emergence of drug-resistant tuberculosis, especially multidrug-resistant tuberculosis poses a significant threat to tuberculosis control programs worldwide. Data on drug resistance in *Mycobacterium tuberculosis* are important to design tuberculosis control program.

Objective: To determine the prevalence of rifampicin mono resistance *Mycobacterium tuberculosis* among suspected case at Gondar University Hospital, Northwest Ethiopia

Methods: A retrospective study was conducted at Gondar University Hospital from February to May, 2015 from registration books of multidrug resistant tuberculosis clinics using data extraction format after checking the completeness of necessary information. Data was entered and analyzed using SPSS Version 16 statistical package. Fisher exact test was done to determine association. A P values < 0.05 considered statistically significant.

Results: A total of 1820 Tuberculosis suspected patients were included in the study. Majority of the study participants were males (59.2%). The mean age of the participants was 36.6±15.8 years. The majority 477(23.5%) were in the age group of 24-30 years old. The overall prevalence of tuberculosis was 448(24.6%). Of this 3.9% rifampicin mono resistant *Mycobacterium tuberculosis* was observed. Relatively Higher proportion of rifampicin resistance observed among males 45(17.3%), HIV sero-positives 14(18.7%) and previously treated cases 61(4.1%).

Conclusion and Recommendations: The prevalence of rifampicin mono resistant *Mycobacterium tuberculosis* was found to be higher (3.9%) among study subjects. Therefore, the observed high prevalence in the study area leads the concerned stake holders to promote prevention and control measures for improved TB case detection, treatment and strengthened community awareness to control progression and dissemination of the disease. Further prospective studies are recommended to determine the prevalence of rifampicin mono resistance *Mycobacterium tuberculosis*.

Keywords: Ethiopia, Gondar, Rifampicin resistant *Mycobacterium tuberculosis*, Tuberculosis

Molecular Epidemiology and Drug Sensitivity Patterns of *Mycobacterium Tuberculosis* Isolated from Pulmonary Tuberculosis Patients in and around Ambo Town, Central Ethiopia.

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Background: Tuberculosis (TB) is caused by *M. tuberculosis* complex and remains a major global public health problem. The epidemic remains a threat to sub-Saharan Africa, including Ethiopia, with further emergence of drug resistant TB. We investigated the drug sensitivity pattern and molecular epidemiology of mycobacterial strains isolated from pulmonary TB patients in and around Ambo town in Oromiya Region, Ethiopia.

Methods: A cross-sectional study was conducted involving 105 consecutive new smear positive pulmonary TB patients diagnosed at Ambo Hospital and surrounding Health Centers between May 2014 and March 2015 upon informed consent. Sputum samples were cultured on LJ media using standard techniques to isolate mycobacteria. Region of difference 9 (RD9)-based polymerase chain reaction (PCR) and spoligotyping were employed for the identification of the isolates at species and strain levels, respectively. The spoligotype patterns of strains were entered into the SITVIT database to determine Octal and SIT numbers for each strain. The sensitivity of the isolates to first line anti-TB drugs was evaluated on LJ-medium with the indirect proportion method.

Result: Cultures were positive in 86/105 (82 %) of the 105 newly diagnosed smear positive pulmonary TB cases. All of the 86 isolates were confirmed as *M. tuberculosis.* The majority (76.7%) of them were clustered into seven groups while the rest (23.3%) appeared unique. The most predominant strains were SIT53 and SIT149, consisting of 24.4% and 20.9% of the isolates, respectively. Assigning of the isolates to family using SPOTCLUST software revealed that 45.3% of the isolates belonged to T1, 23.3% to T3 and 13% to CAS family. The majority (76.7%) of the *M. tuberculosis* isolates were susceptible to all the four first line drugs. Mono resistance to any one of the four drugs was observed in 23.3% of the isolates. The highest proportion of mono resistance was observed against INH (4.7%). There was a single case of multidrug resistance (MDR) (1.2%).

Conclusion: The most predominant strains of *M. tuberculosis* in the study area were SIT53 and SIT149. The majority of the isolates were clustered suggesting on-going active transmission in the study area. Mono resistance is relatively prevalent while the magnitude of MDR was low compared to previous similar studies.

Communicable Disease - Malaria

Abs 31

Facilitators and Barriers of Childhood Malaria: A Case Control Study among Under Five Children at Shashego District, Hadiya Zone, South Ethiopia.

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Background: The spread of malaria is expected to become an increasingly serious public health threat as a result of global climate disruption. Despite effective use of ITN and IRS, the spread of malaria continues to affect children and pregnant women and they are at high risk for malaria morbidity. Therefore, the aim of this study is to identify facilitators and barriers of malaria among under-five children in Shashego district, Hadiya Zone, South Ethiopia

Method and materials: A community based unmatched case control study design was conducted in Shashego district, Hadiya zone, south Ethiopia. A total of 314 under five children (i.e. 63 cases and 251 controls) were included in the study using systematic sampling. Interviewer administered structured questionnaire was used to collect data. Anthropometric data were collected using standard procedures. Blood sample was collected by taking finger-prick blood from case and controls for malaria Rapid Diagnostic Test. Epi info version 3.5.1. and WHO anthro version 3.2.2 software were used to enter the data. Then both data's were exported to SPSS version 21.0 for further analysis. Bivariate and multivariable binary logistic regression methods were used to identify factors associated with malaria among under five children. P-value < 0.05 with 95% CI was used to declare significant association.

Result: Among cases, 6.1 % of under five children were used available bed net effectively. This indicates presence of residual malaria transmission. Children living around swampy area [AOR 5.41, 95% CI: (2.04, 14.46)] and living in households with low wealth index quintile [AOR= 4.30, 95 % CI: (1.61, 11.48)] were more likely to have malaria. The odds of malaria morbidity were increased by 11.68 and 8.59 times among stunted and severely stunted children than children with normal HAZ score [AOR=11.68, 95% CI: (2.01, 67.77)] and [AOR=8.59, 95% CI: (1.81, 40.69)]. Children who don't use available bed net were 10.14 times more likely to have malaria than children using available nets [AOR=10.14, 95 % CI: (4.40, 23.37)].

Conclusion and Recommendation: Strengthening current malaria prevention activities and close attention to sustainable Insecticide Residual Spray (IRS) strategy and environmental hygiene that ensures active community participation should be developed to reduce the risk of malaria transmission. It is better to consider social health insurance to increase financial access to poor households. Effective nutritional intervention to prevent stunting among under five children requires special emphasis. Further innovative implementation research that address and improves accessibility and quality bottlenecks of existing malaria prevention and control interventions.

Half of Pulmonary Tuberculosis Cases Were Left Undiagnosed in Prisons of the Tigray Region of Ethiopia: Implications for Tuberculosis Control.

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Introduction: Prison settings have been often identified as important but neglected reservoirs for TB. This study was designed to determine the prevalence of undiagnosed pulmonary TB and assess the potential risk factors for such TB cases in prisons of the Tigray region.

Methods: A cross-sectional study was conducted between August 2013 and February 2014 in nine prisons. A standardized symptom-based questionnaire was initially used to identify presumptive TB cases. From each, three consecutive sputum samples were collected for acid-fast bacilli (AFB) microscopy and culture. Blood samples were collected from consented participants for HIV testing. Descriptive and multivariate
analysis was done using SPSS version 20.

Results: Out of 809 presumptive TB cases with culture result, 4.0% (95% CI: 2.65-5.35) were confirmed to have undiagnosed TB. The overall estimated point prevalence of undiagnosed TB was found to be 505/100,000 prisoners (95% CI: 360-640). Together with the 27 patients who were already on treatment, the overall estimated point prevalence of TB would be 793/100,000 prisoners (95% CI 610-970), about four times higher than in the general population. The ratio of active to passive case detection was 1.18:1. The prevalence of HIV was 4.4% (36/809) among presumptive TB cases and 6.3% (2/32) among undiagnosed TB cases. In a multivariate logistic regression analysis, chewing Khat (adjusted OR = 2.81; 95% CI: 1.02-7.75) and having had a close contact with a TB patient (adjusted OR = 2.18; 95% CI: 1.05-4.51) were found to be predictors of undiagnosed TB among presumptive TB cases.

Conclusions: This study revealed that at least half of symptomatic pulmonary TB cases in Northern Ethiopian prisons remain undiagnosed and hence untreated. The prevalence of undiagnosed TB in the study prisons was more than two folds higher than in the general population of Tigray. This may indicate the need for more investment and commitment to improving TB case detection in the study prisons.
Keywords: Prison, Undiagnosed TB, HIV, Ethiopia

High Level of Virological Suppression among HIV-Infected Adults Receiving Combination Antiretroviral Therapy in Addis Ababa, Ethiopia.

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Background: Plasma viral load (pVL) is a key indicator of therapeutic response in HIV-infected patients receiving combination antiretroviral therapy (cART), but is often unavailable in routine clinical-care in resource-limited settings. Previous model-based simulation studies have suggested that the benefits of routine pVL monitoring among patients on first-line regimens in resource-limited settings are modest, but this needs corroboration in well-defined study populations.

Methods: We investigated virological suppression levels and identified predictors of detectable viremia among 870 randomly-selected patients who started cART between May-2009 and April-2012 in 10 health-care facilities in Addis Ababa, Ethiopia. Six-hundred fifty-six (75.4%) patients, who were alive, were retained in HIV-care and receiving cART for at least six months provided a blood sample for pVL measurement. Predictors of detectable viremia were identified in a multivariate logistic regression model.

Results: In on-treatment analysis, 94.5% (95%CI: 92.5, 96.1) of the patients achieved virological suppression below 400 copies/mL after a median (IQR) of 26 (17-35) months on cART. When patients who were lost to follow-up, dead, or stopped were assumed to have had detectable viremia, the proportion of patients with virological suppression <400 copies/mL decreased to 74.6% (95%CI: 71.5%, 77.4%). Younger age, lower educational status, <95% medication adherence, lower CD4 cell count at cART initiation and/or the diagnosis of immunological failure thereafter significantly predicted detectable viremia.

Conclusions: Virological suppression levels can be high in an established ART-program in a resource-limited setting, even without the availability of routine pVL monitoring. Efforts to improve treatment outcomes should focus on younger and illiterate patients, earlier detection of HIV-positive status and cART initiation before patients are severely immuno-compromised and improving retention in care.

Is Proteinase Inhibitor Based Antiretroviral Therapy during Pregnancy Associated with an Increased Risk of Preterm Birth? Systematic Review and a Meta-Analysis.

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Introduction: Antiretroviral therapy is recommended during pregnancy to decrease the risk of perinatal transmission of HIV-1 infection and to improve maternal health. But antiretroviral treatment (ART) containing protease inhibitors (PI) has been reported an increased risk of preterm births in some of studies while other studies have reported no increased risk. Therefore this meta-analysis was conducted to derive a more reliable overall estimate of the association between prenatal use of PI based ART and prematurity.

Methods: A systemic review and meta-analysis was conducted by using published studies which were identified through a computerized search using databases of Medline/PubMed, Google Scholar and HINARI. The analysis was done by STATA version 11.0 software and studies were described by forest plot. Heterogeneity across studies was checked using Cochrane Q test statistic and I^2 test. Adjusted odd ratio with 95% confidence intervals [95%CI] was pooled using random effects model.

Results: The Cochrane Q test (Q test p= 0.051) showed good homogeneity among studies. But medium heterogeneity was observed up to 46% by I^2 test (I^2 = 46.5%). Egger weighted regression method (p = 0.04) showed evidence of publication bias, but Begg rank correlation statistics (p = 0.47) didn't show evidence of publication bias. The pooled analysis of 10 studies showed that PI based ART exposure during pregnancy was associated with an increased risk of preterm birth (pooled odds ratio 1.32 (95% CI 1.04 to 1.59).

Conclusions and recommendation: This meta-analysis found that PI based ART exposure during pregnancy is significantly associated with an increased risk of preterm birth. There should be strong cautions in initiating ART during pregnancy and PI based ARV should be replaced by others. The proteinase inhibitor ARV drugs would not be included as part of therapy during pregnancy.

Keywords: risk factors, antiretroviral therapy, HIV, pregnancy, prematurity, protease inhibitors, preterm birth

Prevalence of Asymptomatic Plasmodium Falciparium and *Plasmodium Vivax* Malaria Carriage among School Children of Malaria Endemic Areas of Mirab Abaya District, Southern Ethiopia.

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Background: Asymptomatic malaria parasitemia has been reported in areas where high malaria transmission. Asymptomatic malaria carriers may play a significant role as an infection reservoir. The successful malaria elimination program calls for enough attention to these parasite carriers and should be considered in malaria-control programs in endemic areas.

Objectives: The aim of the current study was to determine the prevalence of asymptomatic *Plasmodium* falciparium and Plasmodium vivax malaria among school children in malaria endemic areas of Mirab Abaya District, Southern Ethiopia.

Methods: In this cross sectional study, blood samples were collected from asymptomatic school children residing in Mirab Abaya district kebeles from December, 2015 to June ,2015. The asymptomatic malaria parasitemia was examined by using light microscopy and malaria Rapid Diagnostic Test (RDT). The associated effect of asymptomatic malaria was evaluated with the socio-demographic characteristics. The data were analyzed using SPSS version 20 software.

Results: A total of 422 school children aged 6-15 were recruited for this study. The prevalence of asymptomatic *Plasmodium* carriage was 1.2% and 3.6% with light microscopy and RDT respectively. The overall prevalence of asymptomatic *Plasmodium* carriage (*P. falciparium* and *P.vivax*) were 15 (3.6%) (95%CI: 1.8-5.5) in this study. Of all *Plasmodium* carriage, 11(73.4%) school children had *P.falciparium* and 4(26.6%) had *P.vivax* infections. The prevalence of asymptomatic *Plasmodium* carriage (both in *P.falciparium* and *P.vivax*) did not correlate with gender and age group of school children (P>0.05) in this study.

Conclusions: The study revealed that the prevalence of asymptomatic *Plasmodium* malaria carriage rate is low. The result also suggests that there is still a potential for the transmission of malaria parasite due to the presence of *Plasmodium* carriers with favorable climatic conditions in this endemic areas. Therefore, persistent malaria prevention and control strategies should be enhanced to achieve the elimination program.

Keywords: Asymptomatic malaria ; Rapid Diagnostic Test; *Plasmodium* malaria

Prevalence of Malaria and Associated Factors in Dilla Town and the Surrounding Rural Areas, Gedeo Zone, Southern Ethiopia, 2014.

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Background: According to the latest estimates of World Health Organization (WHO) there were about range of 124 to 283 million cases of malaria with 367,000 to 755,000 deaths annually. Despite progress in the fight against malaria, about 75% of the land and 60% of the population is exposed to malaria in Ethiopia.

Objective: The aim of this study was to assess the prevalence and associated factors of malaria in Dilla town and surrounding rural areas, Southern Ethiopia, 2014.

Methods: Institution based, cross sectional study was employed from October 01 to December 29, 2014 in health facilities. A stratified sampling technique was carried out to select representative individuals. A pre-tested structured questionnaire and blood film examination format (n=350) were used as data collection tools. Peripheral blood samples were collected and the presence of malaria parasites was observed microscopically on thick and thin blood smears. Personal data were collected through the household based questionnaires. Finally, data were entered and analyzed using SPSS version 20.0.

Results: The overall prevalence of malaria in the study area was 16.0% with higher infection rate in the surrounding area (53.6%) and amongst the age group of 15-24 years (35.7%). The predominant Plasmodium species detected was *P. vivax* (62.5%) followed by *P. falciparum* (26.8%) and mixed malaria infection of both species (10.7%). Chi-square result revealed that residing in houses with mud block walls and unavailability of insecticide treated bed nets were found to be significantly associated with the risk of getting malaria parasites (p<0.05). Individuals living in nearby stagnant water were found to be two times more likely to get malaria parasites than those who were far away from these risky areas (OR=2.01, 95% CI: 1.50-3.85). Houses that had been sprayed with insecticide in the past 6 months were protected against malaria infection (OR=2.45, 95% CI: 2.20-3.99).

Conclusion: the prevalence of malaria reported in the current study was higher than reports in many areas of the country despite its reduction from year to year.

Keywords: Malaria prevalence; Dilla town; Plasmodium; Health center.

Assessment of Insecticide Treated Mosquito Net Utilization and Associated Factors in Chewaka Settlement Area, South West Ethiopia.

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Background: Malaria causes an overwhelmingly large number of cases and deaths round the globe every year and remains a major public health problem particularly in sub-Saharan Africa. Insecticide treated nets (ITNs) have become important tools that provide a simple, but effective means of preventing the disease in highly endemic areas. In Ethiopia, free distribution of Insecticide Treated Nets (ITNs) for households in malarious areas is currently underway to prevent the disease. However, adequate follow-up of its utilization and status is lacking.

Methods: A community-based cross-sectional study was conducted in Chewaka settlement area. Ke_beles_ of the study area were stratified into three strata based on their distance from Ilu Harar town, and 636 households freely supplied with at least one ITN were randomly selected using proportional allocation to size. Data were collected using structured questionnaire that was adopted from instruments developed by the Roll Back Malaria (RBM) partnership monitoring and evaluation reference group by the WHO and UNICEF. Data entry was done by using Epidata and multivariate logistic regression was performed using STATA version 11.0.

Results: Of 574 households freely supplied with ITNs included in this study, only 417 households possess ITNs and 334 (80%) of them were utilized bed nets. Next to old age of ITNs then thrown away, the main reason for absence ITNs was using the ITNs for other purposes by households. Knowing mechanism of malaria transmission (Adjusted OR=3.44, 95% CI: 1.80-6.59), and ITNs ever been washed (Adjusted OR=2.66, 95% CI: 1.35-5.26) were significantly associated with the use of at least one of their ITNs by households. The mean possession was 1.59 ITN per household (3.57 persons per an ITN). One hundred fifty four (36.9%) of ITNs had at least one hole/tear, of these 108(70.1%) ITNs had at least one hole/tear with greater than 2cm and 29 (18.8%) had greater than seven holes/tears.

Conclusions: In conclusion intensive health education and community mobilization effort should be employed to increase proper utilization of insecticide treated bed nets and redistribution of ITNs will be required to reduce the occupant per net gap in order to attain sustainable control of the disease.

Abs 38

Community-based Prevalence of Smear Positive Pulmonary Tuberculosis in Nirak Kebele, Abergelie Woreda, Northern Ethiopia.

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Background: The Ethiopian National TB Control Program (NTP) relies on passive case finding among symptomatic individuals visiting health facilities. However, as over 80% of the population live in rural areas and most TB diagnostic and treatment centers are located in urban areas; many patients need to travel to access these relatively distant health facilities. Thus, due to multifactorial factors delay in the diagnosis may worsen the disease, increase the risk of death and enhance TB transmission in the community.

Objective: The aim of this study was to determine the prevalence of smear positive pulmonary TB in Nirak kebele community.

Methods: A community based descriptive cross-sectional study was conducted in Nirak kebele, Aberglie woreda, Waghimra Zone, Amhara region, Northern Ethiopia from January-June 2013. A total sample size was 343 households were selected by systemic random sampling technique. All adults aged ≥14 years who residing in Nirak kebele for more than 6 months in the selected house-hold who had cough that lasted for >=2 weeks, with or without sputum, chest pain or difficulty in breathing and any members of the house-holds under treatment for PTB positive were included. Presumptive TB individuals were voluntary instructed to submit three sputum samples for smear microscopy examination. Pre-structured questionnaire was used to assess risk factors of TB during household interview. Sputum samples were collected and diagnosed at Nirak health center laboratory. Data was edited, cleaned, coded, entered and analyzed by computer. Continuous variable was described as mean (± SD) and categorical variable was described as proportion and frequency count.

Results: A total of 1201 adults (58.4%) were included in study, of which 76 (6.3%) were showed suggestive symptoms of TB and submitted 3 sputum samples. One (1.32%) new TB case and two cases on anti-TB were diagnosed as smear positive pulmonary TB patients. The main TB symptom reported by respondents was cough (94.7%) followed by sputum production (89.5%) and fever (77.6%). Two smear-positive cases were identified on anti-tuberculosis medication at the time of the study.

Conclusion & Recommendation: The prevalence of undetected infectious case pulmonary tuberculosis in this community was high. For every two cases of smear-positive TB on treatment, there was one undetected infectious case in the community.

Keywords: Community, Smear Positive TB, Ethiopia

Effectiveness of Directly Observed Treatment, Short Course on Treatment of Tuberculosis Patients in Afar Region, Ethiopia.

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Background: Ethiopia is one of the 22 Tuberculosis countries and tuberculosis is the second highest cause of death in the country. The World Health Organization introduced the Directly Observed Treatment, Short course strategy in 1994 for diagnosis, treatment and monitoring to ensure effective control of tuberculosis. Regardless of many intervention primarily DOTS against tuberculosis still there is low cure rate in the country. The present study was done to assess Effectiveness of DOTS on treatment of tuberculosis patients.

Methods: A retrospective cross sectional study was carried out in one administrative zone of Afar region, Ethiopia in 2014. Using standardized questionnaires data from diagnosed tuberculosis patients on treatment outcome result and patient characteristics were collected. Data were analysed using SPSS version 16 and frequency, chi-square test and logistic regression were performed.

The results: A total of 3634 tuberculosis patients were included in the analysis, 2190 male and 1444 female. Mean ages of the patients was 31.A total of 2429 (66.8%) patients completed treatment and 256 (7%) were cured while; 140 (3.9%) died, 17 (0.5%) failed, 353 (9.7%) default, while 439 (12.1%) were transferred out. Overall treatment success rate was 84.0% (3195) and increased from 74.8% in 2010 to 89.1% in 2013. Binary logistic regression analysis found that sex, types of patient, and intensive phase treatment started year (OR<1) increases treatment success whereas age and HIV status (OR>1) decreases treatment success. Treatment success rate improved over time and almost reached the WHO target of 90% that was set globally to be reached by 2015. We recommend maintaining and improving the present intervention.

Knowledge, Attitude and Practices of Community about *Bovine Tuberculosis* and Associated Risk Factors in Gambella Regional State Lare Woreda, South West Ethiopia.

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Introduction: Bovine tuberculosis (BTB) known to transmit from infected animals to humans through close contact and ingestion of raw animal products. This study conducted to assess knowledge, attitude and practice of the people regarding BTB and associated risk factors in Lare Woreda, South West Ethiopia.

Methodology: A cross sectional study was conducted between November 2014 to June 2015 at selected kebeles' of LareWoreda. A structured questionnaire was designed, pretested and self-administered the consented study participants in the area.

Results: A total of 384 respondents were (37.8% males and 62.2% females) participated and having at least one cattle in their home mainly keeping for the purposes of milk, meat and ritual activities. They all keep animals freely in the field, mixed during watering, housing and/or grazing. About 43.0% of the participants have the habit of drinking raw milk, yet none of them eats raw meat. Only 31.0% participants heard about BTB (locally called '*Keil*') and 26.1% knew about the etiology of the disease. From those who heard about the disease 25.2% had a misconception about the causative agent as caused genetically from their parents while 48.7% of the respondents do not know the causative agent. Around 44.5% of the participants mentioned, that tuberculosis could transmit from cattle to human. Ingestion of raw animal products is the modes of BTB transmission to human indicated by 39.63% while 30.18% do not know transmission rout. As the level of education increases, the awareness about BTB increases significantly ($P<0.05$). Of all participants, 19.3 % experienced TB among their family members.

Conclusion: Veterinarians and human health care service organizations, better to focus on community, with more attention on awareness creation programs through various activities to address knowledge about BTB. Further investigation on the etiology and screening test of current BTB status on cattle recommended.

Keywords: BTB, awareness, Knowledge, attitude, milk, meat.

Treatment Outcomes of Six and Eight Months Tuberculosis Treatment Regimens in Districts of Southwestern Ethiopia: A Comparative Cross-Sectional Study.

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Background: A switch of continuation phase tuberculosis (TB) treatment regimen from Ethambutol (E) and Isoniazid (H) combination for six months (6EH) to Rifampicin (R) and Isoniazid (H) combination for four months (4RH) was recommended. However, effect of the regimen switch in Ethiopian setting is very limited.

Methods: A comparative cross-sectional study among 790 randomly selected new cases of TB (395 each treated with 4RH and 6EH during the continuation phase was conducted in nine health centers and one hospital in districts of southwestern Ethiopia. Data were abstracted from standard routine service registry and standardized definition was used to ascertain treatment outcomes. Data were analyzed using STATA version 13 where binary logistic regression was fitted to identify independent predictors of unsuccessful outcomes at 5% significance level.

Result: Over all, 695(88%) of the patients had successful treatment outcome with statistically significant difference (85.3% vs 90.6%,p=0.02) among the 6HE and 4RH regimens respectively. After adjusting for confounders, 4RH continuation phase treatment regimen (AOR=0.55), older age (AOR=1.02), rural residence (AOR=2.1), Human Immunodeficiency virus (HIV) positives (AOR=2.39) and weight change at the end of second month (AOR=0.28) independently predicted unsuccessful treatment outcome.

Conclusion: The switch of continuation phase TB treatment regimen from 6EH to 4RH has brought better treatment outcomes which implies applicability of the recommendation in high prevalent and resource constrained settings. Therefore, it should be maintained and augmented through further studies on its impact among the older, rural residents and HIV positives.

Keywords: Tuberculosis, Continuation phase, treatment regimen, treatment outcome, Ethiopia

Multi-drug Resistant *Mycobacterium Tuberculosis* and Associated Risk Factors in the Oromia Region of Ethiopia.

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Background: Tuberculosis (TB) drug resistance is a Global threat. The impact of Multi drug resistant tuberculosis (MDR-TB) is dangerous especially in resource limited countries like Ethiopia because of its financial and skilled human power required for diagnosis and management. This implies the need for identifying the risk factors MDR-TB and prevents the cases. The aim of this study was to determine risk factors for TB caused by multi drug resistant *Mycobacterium tuberculosis* in Oromia region, Ethiopia.

Methods: In a 6 months case control study in 2013-14, sputum samples and standardized questionnaire data (demographics, treatment, TB contact history, underlying disease, history of imprisonment) were collected from 88 cases and 177 controls of $\geq$18 years of age. Sputum was processed locally in the Oromia public health laboratory using standard techniques. Data from MDR-TB cases and TB positive controls were compared using logistic regression analysis. For each factors, their association with outcomes variable was estimated by calculating the odd ratio (OR) together with 95% confidence intervals (95% CI).

Results: Of 439 suspected MDR-TB cases, 265 had confirmed *Mycobacterium tuberculosis* infection, of whom 33% (88) had laboratory, confirmed MDR-TB. Over two thirds (65%) were between18 to 39 years of age. On multivariable analysis occupation (farming), known TB contact history, alcohol use, HIV infection, previous known TB history and previous TB treatment outcome were predictors of MDR-TB.

Conclusion: The rate of MDR- TB was high among suspected cases in the Oromia region of Ethiopia. Local MDR-TB detection capacity and local epidemiology studies are key for detection and guiding use of sparse resources to optimize MDR-TB control. If TB is suspected, the presence of any of the above factors should alert Oromia region clinicians and public health to be screen for the MDR-TB.

Keywords: Risk factors, MDR-TB, Ethiopia, Africa

Assessment of Ownership and Factors Affecting Utilization of Insecticide Treated Bed Nets in Dembecha Woreda, West Gojjam Zone, Ethiopia, June

2014. *Dawit Siraw[1] , MPH, Desalegn Dalecha[2 ,] MD, MPH, [1]Yale Global Health Leadership Institute PTI Management Mentor for Mekele, Ethiopia. [2] School of Public Health, College of Medicine, Addis Ababa University, Addis Ababa, Ethiopia.*

Background: Approximately 52 million people (68%) live in malaria risk areas in Ethiopia. Assessment of factors related with bed net Ownership and utilization is not well understood in the woreda. Thus, this study tries to describe Insecticide Treated Bed Net ownership, utilization and factors affecting in Dembecha woreda, Amhara region, Ethiopia.

Objective: The main objective of this study is to assess the ownership and factors affecting utilization of Insecticide Treated bed nets in Dembecha woreda, west gojjam zone, Ethiopia.

Methodology: A Cross sectional study was used and interview was conducted using structured questionnaire to assess the ownership and factors affecting utilization of Insecticide Treated bed nets in Dembecha woreda. A total of 380 households were systematically selected from the study kebeles. A structured questionnaire was used for data collection. Multivariable logistic regression model was used to identify factors associated with net utilization.

Result: Malaria was recognized as a major problem. Possession of at least one net was reported by 79.2% of the households but ever sleep under a net was (40.5%). Nets however, were not always used for the intended purpose. Factors associated with net use were: the odds of being knowledgeable was 3.0 higher (AOR= 3.04; 95% CI :(1.69-5.43), the odds of getting health information pertaining to malaria was 3.3 higher, (AOR= 3.33; 95%CI: (1.05-10.59) and the odds of having two or more number of beds was 1.6 higher (AOR= 1.59; 95%CI: (0.79-3.21).

Conclusions: Reasons for improper use were housing condition, and lack of awareness. Selection of control measures, should take into consideration local situation. Once chosen as methods of prevention, mosquito net distribution should have proper guideline and local capacities for doing so should be strengthened.

Keywords: bed net utilization.

Incidence and Predictors of Surgical Site Infections among Surgical Patients in Hawassa referral Hospital: Prospective Study.

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Objective: The aim of the study was **to** determine incidence rate and predictors of surgical site infections at surgical ward of Hawassa University Referral Hospital, Southern Ethiopia

Methods: We did prospective observational study on 105 patients that underwent major surgical procedure at Hawassa University Referral Hospital from March 2 to May 2, 2015. Data was collected from patient medication chart, operational and anesthesia note, by direct observation and patients' interview using pre-tested data collection tool. All patients were followed daily before, during and after operation till discharge and after discharge for 30 days from the date of operation. We coded and cleaned data using Epi-Data version 3.1 and exported to Statistical Package for Social Science (SPSS) for window version 20.0 software for analysis. We fitted variables with $p<0.25$ in bivariable logistic regression into multivariable logistic regression model to determine predictors of surgical site. Collinerity was checked before fitting into multivariable logistic regression.

Result: We included 105 patients in the study. Twenty patients (19.1%) developed surgical site infection. Age greater than 40 years AOR=7.7(95%CI[1.610-40.810 p=0.016,]), preoperative hospital stay more than seven days AOR=22.4(95%CI[4.544-110.780,p=0.001]), duration of operation more than one hour AOR=8.01(95%CI[1.562-41.099,p= 0.013]) and time antimicrobial prophylaxis administration earlier than 1 hour AOR=11.1(95%CI[1.269-75.639,p=0.014]) were found to be independent predictors for surgical site infections.

Conclusion: Incidence of surgical site infection is relatively high.

Cystic Echinococcosis in Children: A 5 Year Retrospective Analysis at Tikur Anbessa Specialized Hospital, Ethiopia.

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Background and Objectives: Cystic echinococcosis (hydatid cyst) is one of the neglected tropical diseases diagnosed in Ethiopian children. The aim of our study was to describe characteristics of pediatric hydatid cyst admissions to Tikur Anbessa specialized hospital.

Study Design: We undertook a retrospective review of records of 17 pediatric admissions with a diagnosis of hydatid cyst over a 5 year period (September 2010 – September 2015). We analyzed the socio-demographic characters, clinical presentations, and diagnostic features of the children and also studied their treatment outcomes and associated complications. Descriptive statistics were used to analyze results.

Results: The average age of the children was 7 years and 2 months. The most common location identified for the cysts were the lungs (13 patients). The most common chief complaints were cough and chest pain. The average size of cysts was 6.35 cm in diameter. The most common complications were super-infected cysts. All recovered with a combination of Albendazole and surgical treatment.

Conclusions: Cysts were commonly diagnosed in the lungs and male children outnumber females. Early presentation and diagnosis of CE prevents associated complications. This study also raises awareness of this neglected illness as a cause of chronic respiratory or abdominal complaints in Ethiopian children.

Clinical profile of adult tetanus patients at Felege Hiwot Referral Hospital, North West Ethiopia.

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Background: Tetanus is a neurologic disorder, characterized by increased muscle tone and spasms, which is caused by tetanospasmin, a powerful protein toxin elaborated by *Clostridium tetani*. It remains a major health problem in developing countries like Ethiopia. The aim of this study was to describe the clinical presentation, complications and outcome of tetanus patients.

Methods: In this retrospective cross sectional study, patients (aged > 15 years) who were admitted at Felege Hiwot Referral Hospital (FHRH) in the period of 30 Sep 2012 to 30 Sep 2015 were included. Demographic and clinical data of patients such as age, sex, residence, tetanus toxoid (TT) immunization status, antecedent cause of tetanus, type, severity, complications, and outcome were retrieved for analysis. All data were entered, cleared, and analyzed using SPSS version 20. Descriptive statistics was used to present data and chi square test was employed to assess association between tetanus treatment outcomes with relevant variables. Level of statistical significance was set at p value less than 0.05.

Results: Data from 110 patients were analyzed (84 males, 26 females, mean age 43.4 years) with rural dwellers constituting the majority. Trauma was the most common antecedent cause of tetanus. Most of the patients had no history of TT immunization and TAT (tetanus antitoxin) prophylaxis following antecedent trauma. Majority of cases were diagnosed to have generalized tetanus during the time of admission and 50% had severe form of tetanus at presentation. Aspiration pneumonia (34.5%) and dysautonomia (11.8%) were the most frequently observed complications. About 36 (32.7%) patients were died and the most common immediate cause of death was respiratory failure. Patients' area of residence (p=0.004), type of complications (p=0.00) and severity of tetanus (p=0.00) were statistically associated with type of treatment outcomes.

Conclusions: The case-fatality was high like in most other studies. Therefore, there is a need for universal tetanus immunization with appropriate boosters and TAT prophylaxis for those who have acute injury. Stakeholders should educate the community to seek medical care early to combat this fatal disease.

Keywords: Tetanus, case fatality, Immunization, Bahir Dar

Demography and Population

Abs 47

Analysis of National Population Policy of Ethiopia (SWOT Analysis and its Implication).

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Population policy is explicit or implicit measures instituted by a government to influence population size, growth, distribution or composition. These are government actions (laws, regulations, programs), that try to influence the three agents of population change (births, deaths and migration), as a way to promote social and economic development. The stated intent of these policies often, is to improve the quality of life, consistent with the available resource in a country. Population policies are concerned with influencing growth rates, regulating fertility, lowering mortality altering patterns of internal migration and hence population distribution and controlling international migration. Therefore, the background, rationale, goal and objectives, achievements, strength and weakness, the process, political concern and its implication on social welfare need to be analyzed/studied using health policy triangle approach.

Qualitative explanatory case study design was used to analyze the NPP by document review from April 10-15, 2015. Macro-level policy analysis & policy triangle approach was used to analyze the rationale of NPP, the context, content, actors and process of NPP, Political concern and its reason, its implication in terms of equity & social welfare, major achievements, strength & weakness, challenges and opportunities of the NPP. Data processing & analysis was made based on policy analysis science after over-viewing the NPP document and other related literatures.

Rapid population growth, young age structure and the uneven spatial distribution were the major factors for the rationale of NPP development. More specifically, Low productivity in almost all sectors of the economy resulting in high rates of unemployment and underemployment, Low accessibility to education, health services and housing, The perennial/long lasting problem of food insecurity, High prevalence of maternal, infant and child morbidity and mortality and Low life expectancy were the reasons for its formulation. The policy has a major goal of harmonization of the rate of population growth and the capacity of the country for the development and rational utilization of natural resources to the end that the level of welfare of the population is maximized over time. In order to more clearly define the roles of the multiplicity of agencies that are involved in the development, implementation, monitoring and evaluation of policy, the three formats is put in place to be actors. The primary actors were the policy organ which comprises the Council of Ministers, the National Population

Council, the Regional Population Council and the Zonal Population Council. Ideologically it was processed by pluralism perspective because many actors participated (state & non-state actors). It has high political concern (high politics) because operates at systemic level with overall goal of rapid reduction of fertility rate/population size. In terms of social aspect(Population growth rate decreased to 2.6% from 2.9%), health, equity, economic activities and education were the aspects were an improvement seen. Absence of legally defined structure at regional level, Weak coordination and institutional arrangements were some of its challenges through many opportunities.

Conclusion: the rationale for the development of national population policy was the right approach due to its contextual factors and its achievements seen, and for further improvement on population size, the challenges and observed gaps should be taken into consideration so that the policy should be revised in some way to meet the changing demand of health.

Keywords: Policy Analysis, National Population Policy of Ethiopia, Health Policy Triangle

Abs 48

Migration Patterns in Kersa Health and Demographic Surveillance System (Kersa HDSS) Population for the Period of 2008 to 2013.

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Introduction: Health and Demographic Surveillance Systems provide a unique opportunity to study migration as a multiple episodes of which are captured over time. Understanding how and why people move in and out of regions like Kersa is important to understanding how the population is changing over time. Therefore the purpose of this study was to investigate migration patterns in Kersa HDSS population for the period 2008 to 2013, in order to better understand how migration has impacted population change in the area.

Methodology: Data for this study was taken from the database of the Kersa HDSS. Kersa HDSS was founded in February 2007 and has been conducting longitudinal demographic and health surveillance within 12 Kabeles[4] within the Kersa district of Eastern Harrage zone in the Oromiya region in Eastern Ethiopia since September, 2007.

Result: Over the six year period from 2008 to 2013, Kersa HDSS experienced net out migration of 5.27 persons per 1000 population per year. This suggests that migration actually has had a small negative effect on the annual population growth that is 2.5% experienced by Kersa HDSS from 2007 to 2013. Overall, most migrants in Kersa HDSS are young and move for marital or employment purposes.

Conclusion and Recommendation: In Kersa HDSS migration has had a small negative effect on the annual population growth. Further analysis on the push factors of migration could tell us migration will give a detail about the issue in addition, if additional detailed study for the migration out of country would be important for the current illegal migrations observed in the region.

Keywords: Kersa HDSS, Migration, net out migration, population growth

Seasonal Human Mobility: A Lesson from Bugna District Malaria Outbreak, 2013, Amahara, Ethiopia.

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Background: Human mobility is not a new phonomena across the Globe although the causes and types vary among different localities, countries or continents. Its impact in controlling communicable diseases including malaria has been also thought and documented a lot. However, little is known in Ethiopia including in Amahara region. The aim of this study was to investigate the outbreak of malaria, guide control and prevention measures and document lessons district, North Wello, Amahara region, Ethiopia.

Methods: First, the north Wello zone health department and Amhara regional health bureau send a rapid response team of experts to Bugna woreda. The team conducted discussion with the district health office, district administration, and local communities about the situation focusing on basic prevention and control of malaria. The team also carried out an observation for mosquitoes breeding sites, reviewed weekly surveillance reports at woreda health office, at cluster health centres, we summary epidemic reports and line lists of cases. Then, data analysis was made using Epi Info version 3.5.3 and Microsoft excel softwares.

Results: A total of 424 malaria cases were reviewed during October to December, 2013. Of which 348 (82.1%) cases were RDT confirmed (95% *P.falciparm* and 5% *P.vivax*) and 69% of the total cases were males. The majorities, 85%) of cases were five and above years old. The number of cases started to raise since week 39 and reaches its peak on week 45,i.e., on the 5th of November 2013. The outbreak affected a total of four kebeles (30.7%) of the district. From which, Zeblo [247 cases (58.2%)] and Birko [84 cases (19.8%) kebeles (villages) were among the most affected in the district. Based on the qualitative analysis; Anopheles mosquitoes larvae were observed in different breeding areas, bed net utilization was found very minimal because of the worn out of LLINs (LLINs distributed before three years in the district) and because of the priority given for other districts with high malaria burden, insect residual spray also not conducted in 2013 prior to major transmission season. Although we could not put the exact

number of cases, the group discussion revealed that most of the cases are returnees from lowland farm areas with high malaria transmission exist.

Conclusion and recommendations: Males and persons with five and above years old were the most affected groups during the outbreak. Local transmission and an outbreak of malaria confirmed in the district precipitated with returnees of seasonal workers from lowland malarious farm areas. Therefore, malaria prevention and control strategies has to be strengthened in any area where local transmission is possible. Moreover, fever screening and testing of returnees of seasonal workers to their residential areas and active case surveillance has to be instituted to interrupt local transmission of malaria.

Keywords: Seasonal mobile workers, malaria, Bugna, Ethiopia

Partner Approval and *Family Planning Use in* Ethiopia: A Study in Integrated Family Health Project Areas, Ethiopia. *Bekele Belayihun, MPH, Girma Kassie M.Sc, Mengistu Asnake MD, MPH, Habtamu Zerihun M.Sc, Ismael Ali MPH. All Integrated family health program.*

Introduction: In developing countries millions of women in the reproductive age who don't use contraceptives prefer to postpone or limit their birth. Partner approval of contraceptive use plays a decisive role in developing countries like Ethiopia. Lack of male involvement and support for sexual and reproductive health services is seen by many Ethiopian women as a barrier to accessing services.

This indicates their failure to take necessary decision to prevent and avoid unwanted pregnancy. Despite this, limited information about evaluated the importance of husband's approval on contraceptive use in Ethiopia. The aim of this study was evaluate the importance of partner approval and determine the factors that influenced current family planning use.

Methods: The study used women's dataset from the 2013 integrated family health program (IFHP)end line survey. The survey sample was designed to provide national, urban/rural, and regional representative estimates of key indicators. The sample was selected using a two-stage stratified sampling process. The data is analyzed using descriptive and multivariable statistical methods to evaluate the importance of partner approval and determine factors associated with low current family planning use.

Result: A total of 4,209 reproductive age group (15-49) women were enrolled in this study. Their mean age and number of children was 28.6 (SD= ± 8.67) and 3.98 (SD= ±2.3) respectively. In multivariable analysis, partner approval, (OR=3.8; CI=3.06-4.7; P=0.00), hearing family planning messages (OR=1.3, CI 1.04-1.65; p=0.02) were associated with the current use of family planning.

Conclusion: Based on the finding, women who have discussed with their partner and heard information about family planning are more likely to hold positive attitudes towards family planning, have greater knowledge of contraceptive use, are more likely to visit health clinics and, as a result, are more likely to use contraceptives. Our findings not only help paint a better understanding of the means through which partner discussion may influence current use of contraceptive, but also provide further evidence of the potential wider benefits of partner discussion.

Keywords: *multivariable analysis, partner approval, contraceptive use.*

Utilization of Long Acting and Permanent Contraceptive Methods and Associated Factors among Married Child Bearing Age Women in Bombe District, Southern Ethiopia.

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Objective: To assess utilization of long acting and permanent contraceptive methods and associated factors among married child bearing age women, Bombe District, Southern Ethiopia.

Methods: A community based cross-sectional study design was employed among 622 married child bearing age women in March, 2015. Multistage sampling techniques were applied. Pretested and structured questionnaire was used to collect data. Unemployed nurses were data collectors. Finally, data were analyzed by statistical package for social science version 20. Bivariate and multivariate analyses of logistic regression were applied to identify the independent predictors.

Results: The overall utilization of long acting and permanent contraception use was 98 (16.3%). After statistically adjusting for the rest of variables, educational status of women (AOR= 3.7, 95% CI=1.7, 7.9), knowledge of women (AOR= 4, 95% CI=1.8, 8.7), presence of contraceptive methods discussion with health extension workers(HEWs) (AOR= 2.36(1.06, 5.27), mass media exposure (AOR=4.31, 95%CI=2.1, 8.9), methods decision making by both partners (AOR= 4.37, 95%CI=2.14, 8.95) were predictors of long acting and permanent methods (LAPMs) use.

Conclusion: Long acting and permanent contraceptive methods utilization was low. Having contraceptive methods discussion/communication with health extension workers (HEWs), Educational status of women, knowledge of women about methods, mass media exposure, and jointly decision making about methods with partner were some of associated factors.

Family Planning Use among Women Seeking Abortion Care in Harar Health Facilities, Harar Town , Eastern Ethiopia, 2013.

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Introduction: Unintended and mistimed pregnancies are extremely common event for many women especially in developing countries. The World Health Organization (WHO) has estimated that every year unintended pregnancy leads to at least 20 million unsafe abortion resulting is death of some 80,000 women. Despite surprising technological advancements in modern contraception methods still unintended pregnancy is a worldwide problem. In developing countries of the 182 million pregnancies occurring every year, an estimated 36% are unplanned, and 20% end in abortion. Ethiopian Demographic and Health Survey of 2010 revealed three in every ten currently married women (29 percent) are using a method of contraception, mostly modern methods (27 percent).

Objective: To assess Family planning use and its associated factors among women seeking abortion care in Harar health facilities, Harar town, Eastern Ethiopia from January to February 2013.

Methodology: A facility based quantitative descriptive cross - sectional study was conducted. By considering 69.1% proportion of abortion clients ever used contraception, 360 women of reproductive age group was included in the study. Multi stage sampling technique was used to select sampling units. The data were collected using pre-tested interview guided semi-structured questionnaire. Data were edited and entered onto Epi data version 3.1 and SPSS version 16.0 software and analyses by Univariate analyses and Multivariable Logistic regression.

Result and discussion: Current abortion was intended by nearly 58 % of the women. Nearly, 44% of abortion care attendants have used some form of family planning prior to the index pregnancy, of these 40% used injectable form of contraceptives. Among women who have used pills, 60% complained they become pregnant while using the method due to missing dose. About 53% of condom users claimed similar reason as they became pregnant while using condom. Less proportion of the women will intended to use the injectable form of family planning after termination of their index pregnancy in spite of their high level of contraceptive awareness. In this study being rural resident were less likely to use family planning during the index pregnancy (COR= 0.36, 95%CI (0.23, 0.57). In regards to women's age group 21-25 (COR= 2.63; 95%CI (1.46, 4.76)), 26-35(COR= 4.06; 95%CI (2.19, 7.55)), orthodox religion (COR=2.02; 95% CI (1.26, 3.24)) were more likely to use family planning. Those women who didn't discuss

about family planning with their husband were less like to use family planning (COR=0.107; 95%CI ((0.066, 0.175)).

Conclusions and Recommendations: Nearly, 44% of abortion care attendants have used some form of family planning prior to the index pregnancy. Residence, attitude of the husband towards the family planning use, age of the mothers, orthodox religion and family size was found as some of the factors influencing a family planning use. Government and Non-Government bodies should work in collaboration to minimize unsafe abortion and curb problems associated with abortion.

Practice and Intention to Use Long Acting and Permanent Contraceptive Methods among Married Women in Ethiopia: Systemic Review and Meta-Analysis.

Yonatan Moges[1] and Kelemu Tilahun[2].*

Background: The use of long acting and permanent contraceptive methods (LAPMs) has not kept step with that of short-acting methods such as oral pills and injectable in Africa. Ethiopia is the second most populous country in sub Saharan Africa with high total fertility rate, and high maternal and child mortality rates. Therefore, this study summarized the evidence of practice and intention to use long acting and permanent family planning methods among women in Ethiopia using systemic review and meta-analysis.

Methods and findings: Systematic review of the published literature of observational studies was conducted. Original studies were identified using databases of Medline/Pubmed, and Google Scholar. Heterogeneity across studies was checked using Cochrane Q test statistic and I2. Pool risk estimates of intention to use and practice of long acting and permanent family planning methods were computed using random effect model. Based on the 9 observational studies included in the meta-analysis, the pooled prevalence of intention to use long acting and permanent family planning methods among married women according to random effect DL model was 42.66 %(95% CI 31.55 to 53.78%). On the other hand, the pooled practice of long acting and permanent methods (LAPMs) among the study participants was 13.5% (95% CI 8.2% to 18.7%).

Conclusion: This meta-analysis revealed that women intention to use LAPMCs is generally good but their utilization is low. So it is recommended that LAPMCs have to be available and accessible to for the women who are in need of it at lower health service delivery level.

Abs 54

Determinants of Experience of Contraceptive Use before Pregnancy among Women Who Gave Birth in Kersa HDSS, Ethiopia.

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Background: Worldwide, every year 289,000 women die related to pregnancy and its complications. Nearly all of these deaths occur in developing countries and more than half of this deaths occur in sub-Saharan Africa. Report suggested that using contraceptives can reduce this maternal mortality by 44%. Even if, Ethiopia is one of the countries with highest maternal mortality, only 41% of married women are using family planning. This analysis aimed at assessing determinants of experience of contraceptive use before pregnancy among women who gave birth in Kersa HDSS, Ethiopia.

Methodology: This study was part of data generated for Kersa Health and Demographic Surveillance System (Kera HDSS). Women who gave birth during October 2011 to September 2012 were asked whether they have used contraceptive before getting their last pregnancy. Data were collected by Kersa HDSS interviewers by using the HDSS questionnaire. Odds Ratio, with 95% confidence interval, and both bi-variate and multivariate analysis were used to determine level of significance.

Results: The proportion of modern contraceptive before pregnancy among the study participants was found to be 383(40.9%). The most commonly used modern contraceptives was Depo-Provera 270(70.0%) followed by oral contraceptives, 66(17.23%). Modern contraceptive use was found to have negatively association with being Muslim (AOR= 0.2, 95% CI=0.05, 0.72), and, being young mother (AOR=0.44, 95% CI=0.22, 0.86). Urban residence (AOR=2.23, 95%CI=1.15, 4.35) was found to have positive association with utilization of modern contraceptives.

Conclusions: In this analysis, the proportion of modern contraceptive use is relatively low. Being young, being Muslim and living in rural area were significantly associated with low utilization of modern contraceptive. Increasing family planning education and involving religious leaders in family planning promotion would improve utilization of modern contraceptive use.

Keywords: Kersa HDSS, Modern contraceptives, Ethiopia.

Long Acting Reversible Family Planning Utilization and Associated Factors among Reproductive Age (15-49) Women in Arba Minch Town, SNNPR, Ethiopia, 2014.

[1]Haregewoyin Kerebih; and Eskezyiaw Agedew, MPH; Collage of Medicine and Health Science in Arba Minch University.

Introduction: Family planning helps to reduce the number of high risk pregnancies that result in high level of maternal and child illness and death. In Ethiopia total fertility rate is 4.6 children; contraceptive prevalence rate is 29 % while the unmet need for family planning is 25%.The prevalence of long acting reversible contraceptives low (3.7%). Moreover almost all modern contraceptive use in Ethiopia is dependent on short acting contraceptive methods. The objective of this study was to assess Long acting reversible family planning utilization and associated factor among reproductive age (15-49) women in Arba Minch town, Southern Ethiopia.

Methods: Community based cross sectional study was conducted among 393 reproductive age women in Arba Minch town by using pre tested and structured questioner to collect data. Frequency and cross tabulation was conducted to describe relevant variables in relation the outcome variables; multivariate logistic regression analysis was conducted by SPSS version 20 to identify significant predictors based on p-value less than 0.05 with 95% confidence level.

Result: The prevalence of long acting reversible family planning utilization is 25.2%. From all interviewed respondents 135(34.4%) were used inject able contraceptives, 132(33.6%) use pills, 66(16.8%) use implant and 33(8.4%) use IUCD. After conducting binary and multivariate analysis factors like educational status of women those who are secondary and above AOR 13.67(2.07-90.32), Media exposure AOR 3.44(1.24-9.54), No of alive children above five AOR 2.88(1.30-6.34), Desired number of children 1-2 AOR 13.98(3.96-49.20) and has no fear of infertility AOR 2.26(0.27-18.70) were the significant factors affecting Utilization of Long acting reversible family planning.

Conclusion and Recommendation: Educational status of the husband, availability of radio and television (media exposure),age at first marriage and desired number of children women wish to have are the major significant factors for LARCs .emphasis to promote family planning services especially Long acting reversible family planning. Should be given by Government and None government organization and continuous promotion of modern and effective long acting revisable contraceptive should be implemented to increase its utilization.

Keyword: long acting revisable contraceptive, Arba Minch, Cross sectional.

Gender Norms and Family Planning Decision-Making among Married Men and Women, Rural Ethiopia: A Qualitative Study.

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Background: Family planning service contributes a lot in reduction of morbidity and mortality and it does more help couples to limit the number of their children. Women's ability to control her on fertility strongly affected by social constructs of Gender role, expectations and gender inequalities.

Objective: To explore influence of gender norms on family planning decision making among married men and women, rural Ethiopia, 2013.

Methods: A qualitative study using grounded approach was employed. Data collection included in-depth interview with key informants and focus group discussion as conducted with both married women and married men. Interview was done using a semi-structured interview guide with open-ended questions.
Axial coding was employed. Codes were aggregated and memos are developed.

Result: Cultural beliefs and attitude toward gender are stated as the major factors those play crucial role in the existence of gender norms in the community. Gender norms in the community are long lasting and deep rooted within the life of the community Different gender norms in the community were obstacles for family planning utilization in the community. Those different gender norms directly or being by complement with each other acts as the barriers of FP utilizations. Decision making power of men/husbands on family planning (needs for his consent by women/wives), seeing children as social prestige due to cultural beliefs, low status of women in community, undermine knowledge of women, limiting responsibility of women/wives to home, dominance of men/husbands on households, etc.

Conclusion: Gender norms in the community give low social status for women. Due to men's dominance at the household level and other related factors, the role of women on family planning decision making was limited to merely accepting the decisions of their husbands. Magnitude of using family planning by secret was high and common among married women in the community. Furthermore due to men's power of decision making the final decision was made based on the men's interest.

A Qualitative study on Experience of Gender-Based Violence among Married Women in Debre Tabor town, Northwest Ethiopia.

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Introduction: Gender-based violence is major public health and human rights problem in Ethiopia. This study was aimed to assess community perceptions and attitude towards gender-based violence among married women in Northwest Ethiopia.

Methods: Qualitative study was conducted using purposive sampling technique for three focus group discussions and ten in-depth interviews with victim women, family arbitrators, healthcare workers, gender experts and law enforcement bodies in Debre Tabor town, Northwest Ethiopia. Data were analyzed thematically using the Open code soft ware version 3.4.

Results: Five themes such as attitudes, reason, domestic violence, marital rape, and suggested measures for prevention of gender-based violence were emerged. Most discussants perceived, gender-based violence is accepted in the community. The normative expectation that conflicts are to be expected in marriage, considerable permissiveness of violent acts when the act is not regarded as wrong, socially acceptable argument, the consequences are estimated mild and makes it difficult for society to eliminate violence. Domestic violence is common among housemaids and marital rape is not clearly understood well and there is less willingness to express disapproval of it. The suggested measures by the community to stop or reduce women's violence were targeting actions at the level of individual, family, community, and society.

Conclusion and recommendation: In the study community, the attitude of people and traditional norms influence the acceptability for the act of gender-based violence among married women. Most victims are tolerating the incident while very few are defending themselves from the violent partners. The suggested measures for stopping or reducing women's violence focused on provision of education for raising awareness at all levels using a variety of approaches targeting different stakeholders, and a need for amending and enforcing the existing laws as well as formulating the new laws concerning women violence including rape. Moreover, providing professional help at all levels is essential.

Keywords: Focus group discussion, In-depth Interview, Gender-Based Violence, Attitude

Abs 58

Determinants of Intimate Partner Violence During Pregnancy among Married Women in Abay Chomen District, Western Ethiopia: A Community Based Cross Sectional Study.

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Background: Intimate partner violence during pregnancy is the most common form of violence that harms the health of women and the fetus but practiced commonly in developing countries. There is scarcity of information regarding intimate partner violence during pregnancy in Ethiopia. Thus, this study aimed to assess the prevalence and associated factors of intimate partner violence during recent pregnancy in Abay Chomen district, Western Ethiopia.

Methods: Community based cross sectional study was conducted among pregnant women 24 in Abay Chomen district in April, 2014 using a standard WHO multi-country study questionnaire. Two hundred eighty two randomly selected pregnant women aged 15-49 years participated in the study. Logistic regression and multivariate analysis were employed.

Results: The prevalence of intimate partner violence during recent pregnancy was 44.5% (95% CI, 32.6, 56.4). More than half 157 (55.5%) experienced all three forms of intimate partner violence during recent pregnancy. The joint occurrence of intimate partner physical and psychological violence during recent pregnancy as well as joint occurrence of intimate partner physical and sexual violence was 160 (56.5%). Pregnant women who were ever lived with their partner's family were 46 percent less likely to experience recent intimate partner violence. Dowry payment decreases intimate partner violence during recent pregnancy (AOR 0.09, 95% CI 0.04, 0.2) and pregnant women who didn't undergo marriage ceremony during their marriage were 79 percent are less likely to experience violence (AOR 0.21, 95% CI 0.1, 0.44).

Conclusion and Recommendations: Nearly half of interviewed pregnant women experienced intimate partner violence during pregnancy implying the prevalence of such practice in the study site. To that end, increasing community awareness about the consequences of the practice could be important. Moreover, as health extension workers works closely with households, they could be crucial players to increase community awareness about intimate partner violence on pregnant mothers and halt it or its risk factors.

Keywords: Intimate partner violence, pregnancy, Ethiopia.

Assessment of maternal near miss at Debre Markos Referral Hospital, North West Ethiopia: Five years experience. *Habtamu G. Ayu G. and Molla G.*

Background: Maternal near miss is said to be occurred when women presented with life threatening complication during pregnancy, child birth and within 42 days after delivery, but survive by chance or good institutional care. Currently maternal near-miss ratio is increasingly used to evaluate the quality of obstetric care in low income countries [World Health Organization 2011]. According to Ethiopian demographic and health survey 2011, the maternal mortality ratio was 676/100,000 live births. Cognizant of this bitter fact, ANRS in along with the government of the FDRE attempts to reduce maternal mortality using different strategies (EDHS 2000-2011.). However, data on trend of maternal near miss ratio, and maternal near miss events are lacking. This study tried to fill the prevailing knowledge gap.

Methods: Case notes of mothers who received care at department of gynecology and obstetrics of Debre Markos Referral Hospital over five years period was reviewed. The study was conducted using available data form 1st January 2008 to 30th December 2012.Data was collected from July to August, 2013 by Tailored structured format among 1355 case notes. SPSS version 16 was used to analyze the data. Logistic regression was fitted to determine possible association among variables. Strength of associations was measured using odds ratio at 95% confidence interval.

Results/Findings: A total of 1355 case notes were reviewed. Of these, 403(29.7%) were near miss cases The most common types of near-miss events fall under the diagnostic categories: obstructed labor (45%), hemorrhage (43%), pregnancy induced hyper tension (8%), septic abortion (4%), sepsis/infection (1%). During the 5-years period, there were 403 near miss cases. The trend of maternal near miss ratio has decreased almost from50%34%. Multiple logistic regressions revealed that distance between residence and referral hospital, birth weight, bad obstetric history, ANC follow up, parity gravidity were found to have statistically significant association with the occurrence of maternal near miss events.

Lessons and Recommendations: There is high prevalence of maternal near miss ratio at the level of this facility. In spite of the decrease in the maternal near miss ratio over the years, it still remains high .This needs special attention to prevent maternal near miss events (Obstructed labor, Hemorrhage, pregnancy induced hypertension, septic abortion and infection/sepsis) at all level of health facility as well as at the community level.

Gynecological Morbidity among Women in Reproductive Age: A Systematic Review and Meta-Analysis.

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Background: prevention against infection and dysfunction of reproductive organ including sexually transmitted infection is one of the three dimensions of reproductive health. Gynecological morbidities affect women's physical health, sexual function, social role, psychological and religious life. For accurate estimate of gynecological morbidity population based data is considered to be a gold standard. There is no global wide population based studies on gynecological morbidities. In this paper we aimed to determine the prevalence of gynecological morbidity among reproductive age women in the world.

Methodology: Electronic databases such as Medline/PubMed were searched to identify observational studies on prevalence of gynaecological morbidity (like pelvic organ prolapse, infertility, menstrual disorder, and reproductive tract infection). Papers were also identified by hand searching references from included studies. We included studies which reported the prevalence of gynaecological morbidity among women 15-49 years old all over the world. Only studies that used random sampling or census data to find participants were used. The prevalence estimate was summarized using random effect model. Statistical heterogeneity was evaluated with the Cochran chi-square (x^2) and quantified with the I^2 statistic. Publication bias was evaluated by testing for funnel plot asymmetry, Begg's rank correlation test and Egger's linear regression test. Stata version 12 used for all analysis and ancillary analyses were performed using comprehensive meta-analysis software.

Result: Eighteen studies at least with one outcome variable were included in the final analysis. Ten studies eligible for pelvic organ prolapse, 8 for infertility, 11 for menstrual disorder, and 15 for reproductive tract infection. The summarized random effect prevalence of pelvic organ prolapse was 13%, infertility 8% reproductive tract infection 38% and menstrual disorders 28 %. The overall pooled random effect prevalence of gynecological morbidity was 22 % (95% CI=17%-27%, I^2=99.38%, p=000). Potential publication bias was suggested by funnel plot asymmetry.

Conclusion: The polled prevalence of overall gynecological morbidity was high. From this prevalence we can conclude that the effect of gynecological morbidities is high to hamper the productivity of reproductive age women in the world particularly in developing nation.

Skilled Delivery Service Utilization and its Association with the Establishment of Women's Health Development Army in Yeky District, South West Ethiopia: A multilevel analysis. *Melese Girmye, MPH, College of Medicine and Health Sciences, Wollega University; Yifru Berhan, MD, College of Medicine and Health Sciences, Hawassa University; Abebaw Gebeyehu, PHD, College of Medicine and Health Sciences, Gonder University; Tafesse Lamaro, MSN, College of Medicine and Health Sciences, Mizan-Teppi University; Dessalegn Wirtu, PHD, College of Medicine and Health Sciences, Wollega University.*

Background: In response to high maternal and perinatal morbidity and mortality, the government of Ethiopia has established health extension program with a community based network involving health extension workers (HEWs) and a community level women organization which is known as "women's health development army" (HDA). Currently the HEWs and HDA network is the best approach to register pregnant women and encourage them to link in the health care system. However, its effect on skilled delivery service utilization is not well known.

Methods: A community based cross sectional study was conducted from January to February 2015. Within 380 clusters of HDA, a total of 748 reproductive age women who gave birth in one year preceding the study, were included using multi stage sampling technique. The data were entered into EPI info version 7 statistical software and exported to STATA version 11 for analysis. Multilevel analysis technique was applied to check for association of selected variables with utilization of skilled delivery service.

Results: About 45% of women have received skilled delivery care. A significant heterogeneity was observed between "women's health development teams (clusters)" for skilled delivery care service utilization. The difference explains about 62% of the total variation. Individual-level predictors including urban residence [AOR (95%CI) = 35.10 (4.62, 266.52)], previous exposure of complications [AOR (95%CI) = 3.81 (1.60, 9.08)], at least four ANC visits [AOR (95%CI) = 7.44 (1.48, 37.42)] and preference of skilled personnel [AOR (95%CI) = 8.11 (2.61, 25.15)] were significantly associated with skilled delivery service use. Among cluster level variables, distance of clusters within 2KMs radius from the nearest health facility was significantly associated [AOR (95%CI) = 6.03 (1.92, 18.93)] with skilled delivery service utilization.

Conclusions: In this study, significant variation among clusters of HDA was observed. Both individual and cluster level variables were identified to predict skilled delivery service utilization. There was no statistically significant association between performance levels of HDA

and skilled delivery service utilization. Encouraging women to have frequent ANC visits (-four and above), enhancing awareness creation towards skilled delivery care attendance and making accessible facilities and transport services are recommended.

Factors Associated with Severe Preeclampsia/Eclampsia among Women in Bale Zone, Ethiopia: A Case Control Study.

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Background: Preeclampsia and eclampsia are major complication of pregnancy and among the leading causes of maternal death throughout the world. However, little is known about factors associated with preeclampsia/eclampsia in Ethiopia. Therefore, the aim of this study is to assess factors associated with preeclampsia/eclampsia among women in Bale Zone, Ethiopia

Methods: Hospital based case control study was conducted in four hospitals, namely Goba, Robe, Ginnir and Delomena Hospital, of Bale zone from March 15 to August 15, 2015. The sample size was determined using the proportion difference approach and it was 432 (144 cases and 288 controls). The cases were women who had severe preeclampsia/eclampsia and controls were normotensive women. Data were collected through face to face interview using pretested structured questionnaire. Binary and multivariable logistic regression analyses were constructed to identify factors associated with sever preeclampsia/eclampsia. Statistical significance was declared at P value < 0.05.

Results: A total of 144 cases and 288 controls were successfully interviewed yielding the response rate of 100%. Variables having statistically significant association with severe preeclampsia / eclampsia were multiple pregnancy (AOR=3.48, 95% CI=1.27, 9.48), primiparity (AOR=4.62, 95% CI =1.60, 13.29), previous history of still birth (AOR=3.41, 95% CI=1.38, 8.46) and previous history of preeclampsia/eclampsia (AOR=10.53, 95 % CI= 1.86, 59.63).

Conclusion: Being primipara, multiple pregnancy, history of still birth, and previous history of preeclampsia/ eclampsia were covariates identified as factors associated with severe preeclampsia/ eclampsia among women in Bale zone, Ethiopia. Health care practitioners should carefully monitor primipara women and women with history of previous still birth, multiple pregnancy and preeclampsia/eclampsia for the possible development of preeclampsia/eclampsia in their subsequent pregnancy.

Keywords: Preeclampsia, Eclampsia, Women, Bale zone, Oromia region, Ethiopia

Premenstrual Dysphoric Disorder (PMDD) among High School Young Girls, Mekelle, North Ethiopia.

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Background: the more severe form of premenstrual syndrome, premenstrual dysphoric disorder (PMDD) is characterized by mood and physical symptoms which impair different areas of women's life, still remained less studied in African region, including Ethiopia. With the aim of determining its magnitude and to identify associated factors, this study was carried out.

Methods and Materials: institution based cross sectional study was employed among 181 in school young girls at Ayder secondary and Preparatory school, Mekelle from February to June 2015. Diagnostic and statistical manual of mental disorders 4th edition (DSM IV) was used to asses premenstrual dysphoric disorder; also Zung self rating anxiety scale was employed to assess anxiety disorder. Self administered questionnaire prepared in local language (Tigrigna) was used to collect data; after stratifying for grades, systematic random sampling with proportional allocation was employed. Data was analyzed using binary logistic regression through SPSS window 20.

Result: the age of participants lie from 14 to 22 years with mean and median ages of 16.6 and 17 years respectively. The magnitude of premenstrual dysphoric disorder was 30.9%. Also 16% had anxiety disorder. Concerning age of menarche, it was 13 to 16 years for about 70.7%; in addition the time of next menses was within 21 to 35 days for 50.8% of the participants. The factors associated with PMDD were early menarche age of 13 to 16 years (p-value 0.033) and longer duration of menstruation (p-value 0.020).

Conclusion: Premenstrual dysphoric disorder among adolescents was higher. Significant attention should be given to school based youth friendly programs that integrate mental health with reproductive issues

Keywords: PMDD, Premenstrual dysphoric disorder, severe premenstrual syndrome, Mekelle

Skilled Antenatal Care Service Utilization and its Association with the Characteristics of Women's Health Development Team in Yeky District, South-West Ethiopia: A Multilevel Analysis.

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Background: In response to unacceptably high maternal and perinatal mortalities in Ethiopia, "women's health development army" (WHDA) was established at the community level to enhance utilization of skilled maternity services including antenatal care (ANC). But, its effect on skilled ANC service utilization is not well measured.

Methods: A community based cross sectional study was conducted from January to February 2015. A multi stage cluster sampling technique was applied and a total of 748 women in the reproductive age, who gave birth in one year preceding the study, were included. The data was entered into EPI info version 7 statistical software and exported to STATA version 11 for analysis. Bivariate and multilevel mixed effects analysis techniques were applied to check for association of selected independent variables with utilization of skilled antenatal care service.

Results: About 71% women have received skilled antenatal care service at least once. A significant heterogeneity was observed between "women's health development teams (WHDTs)" for skilled antenatal care service utilization. Level-1 predictors (individual characters) of skilled antenatal care service use were preference of skilled personnel (AOR=11.0; 95%, CI, 3.02-40.04), awareness about places to get skilled providers (AOR=51.6; 95% CI, 13.92-,190.97) and listening to radio (AOR=5.7; 95% CI, 1.46-21.94). Distance of WHDT within 2 km radius from the nearest health facility was the only level-2 significant predictor of skilled antenatal care service utilization (AOR=8.28; 95% CI, 1.08-62.20).

Conclusions: This study revealed that skilled antenatal care service utilization is the joint effect of individual and WHDT level characters. Community awareness and perception creation towards skilled maternity service utilization need to be enhanced. Facilities and transport services need to be more accessible towards the WHDTs.

Keywords: community based, cross sectional study, Ethiopia, multilevel analysis, skilled antenatal care service, women's health development team.

Abs 65

Trends in Antenatal Care Attendance and their Link to Skill Delivery Service: *A study in integrated family health project areas, Ethiopia*.

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Introduction: Antenatal Care (ANC) during pregnancy can play an important role in the uptake of evidence-based services vital to the health of women and their infants. There is no question that the uses of a skilled birth attendant at the time of delivery reduce the risk of maternal mortality. Evidence to support that ANC intervention are effective in reducing maternal mortality has been scanty and studies have presented contradictory findings. Women who attend ANC are also more likely to seek skilled delivery care. Nevertheless, 20% of all women who attend ANC four times or more in sub-Saharan Africa do not seek skilled delivery attendance. The question we seek to answer is whether there are possible significant predictors that will enable providers to identify women who are less likely to have skilled attendance at delivery from the antenatal care attendants, so that these women can be supported to have this desirable outcome. The present study controls for these factors while examine the relationship of antenatal care utilization with the use of skill delivery care among women who attend focused ANC during their pregnancy to compare with the rate of skilled delivery.

Methods: The study used women's dataset from the random follow-up visits, conducted by the Integrated Family Health Program (IFHP) annually from 2011 to 2015 using the same methodologies for the purpose of meaningful comparison of the results. The random follow-up visit was conducted using a cross sectional study design in four major implementation sites of the IFHP (Amhara, Oromia, SNNP and Tigray). The sample was selected using a multi-stage stratified sampling process and women with children 0-11 months were selected using simple random sampling technique. The data was analyzed using descriptive and multivariable statistical methods to determine factors associated with skill delivery.

Result: The study showed that skill delivery service utilization was high. Of all the survey participants, the proportion of women with children 0-11 months who had four or more ANC visit has significantly increased from 16.6% in 2011 to 53.7% in 2015 (P<0.001). During the same period, the trend of skilled delivery increased by three-fold of the baseline (from 17.9% to 69.0% in 2015) (P<0.001). Despite this notable improvement, IFHP strongly working for improving service delivery coverage for receiving focused antenatal care at health post level. BEMoNC training for health professionals on the job should be re-enforced/strengthened. Intensifying community-based health education could further reduce education- and parity-related inequalities in skilled birth attendance

231

and antenatal care utilization. The finding of the study, the adjusted odds of skill delivery was about 3.2 times more likely higher (AOR 3.17 & 95% confidence intervals (CI): 2.7-3.67) among women who received focused ANC visit compared to women who don't received focused ANC visits. Skill delivery was improved 4.7 times more (AOR, 4.7 & 95% confidence intervals (CI): 3.6—6.3) among women who received four and above ANC visit compared to only one ANC visit. Significant positive associations existed between skill delivery and the variables such take tetanus injection during pregnancy and number of children (p<0.001).

Conclusion: The result of this study shows antenatal care utilization is an important determinant of skill delivery care after controlling for a number of factors known to influence the use of care during pregnancy and child birth. Concurrent implementation of community mobilization and facility capacity strengthening increased ANC attendance and health facility deliveries. More women attended first ANC. However, few mothers returned for up to four ANC visits. Programs that aim at increasing uptake of ANC and attended deliveries should simultaneously address demand and quality gaps at facilities. More efforts are required to enhance attendance of ANC up to four times; until this is realized, key ANC interventions should be tied to the first ANC visit to ensure that they are delivered. There is little doubt that this effect of antenatal care is of benefit for the women and their children.

Key Words: Random follow up, multivariable analysis, skilled delivery, ANC

Ante Natal Care Service Utilization and Associated Factors in Bench Maji Zone, South West Ethiopia: A Community-Based Cross Sectional Study.

Niguse Tadele*, MSc; Tafesse Lamaro, MSc* * Mizan Tepi University College of Health Sciences.

Background: In Ethiopia thousands of women are dying due to complications of pregnancy and childbirth each year. Working towards Sustainable Development Goal to reduce the global maternal mortality ratio and ultimately toward sending preventable maternal mortality requires amplifying the efforts and progress catalyzed by MDG 5 including Ante Natal Care service utilization which is an entry point for other services. So that this study was conducted to assess the status of Ante Natal Care service utilization and associated factors in Bench Maji Zone, South West Ethiopia.

Methods: Community-based cross-sectional study was conducted among mothers who gave birth in the last 2 years from June to September 2015 in Bench Maji zone. Multistage sampling technique was used to select 801 participants. A pre tested and structured questionnaire was used to collect data. Bivariate and multivariate data analysis was performed using SPSS version 20.0 software.

Results: The study showed that 89.3% received Ante Natal Care of whom 68.56% made 4 or more visits and 21.23% started in the first trimester. Among the associated factors knowledge of danger signs of pregnancy and maternal occupation showed significant associations with attending for ANC. Women who replied they know danger signs of pregnancy had about 3 fold increase in the odds of attending ANC compared to those who replied they didn't know danger signs of pregnancy (AOR 3.1, 95% CI 1.7-5.6),and those who work in Private business, Students and daily labourers were less likely to attend ANC compared to House wives (AOR 0.3 95% CI 0.1 - 0.9).

Conclusions: Ante Natal Care service utilization in Bench Maji Zone especially in urban setting is good. Some of socio-demographic and knowledge related factors were shown to be determinants of Ante Natal Care service utilization so that Expansion of facilities that provide Ante Natal Care is important since it helps to increase utilization of other services as institutional delivery, Post natal care and Post-partum family planning additionally Empowering women to enhance their decision making ability and educating mothers about the benefits of using maternal health care service utilization is recommended.

Successful Expectant Management of Cotwin Death in Septate Uterus: Case Report.

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Background: It is vivid that twin pregnancy caries higher risks to the mother and her fetuses. Though its occurrence in septate uterus is very rare obstetrics phenomenon, it seems to carry more fatal complications and creates management dilemmas.

Case Presentation: A 25 year old primigravid mother who presented at gestational age of 33 weeks and 4days was diagnosed as twin intrauterine pregnancy with cotwin death each in separate cavities of septate uterus. After discussing with the mother about the diagnosis and possible complications, we started her on dexamethasone and continued following maternal and fetal condition with complete blood count and biophysical profile. Finally, she delivered by cesarean section at term after she was on expectant management.

Conclusion: Spontaneous twin pregnancy can occur in septate uterus. This pregnancy, like the one in normal uterus, can be complicated by cotwin death which possibly be expectantly managed until fetal lung maturity is achieved.

Keywords: septate uterus,

Prevalence and Factors Associated with "Forest Delivery" among Gumuz Women in Metekel Zone, North West Ethiopia.

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Background: In Ethiopia there are many harmful traditional practices that are exercised during labour and child birth. The most important among these practices that the Gumuz culture harbors and more or less unique to this ethnic group is delivery in the forest. It is practiced due to the Gumuz communities' belief that women's blood from delivery has a problem attached to it.

Objective: To assess the prevalence and factors associated with "forest delivery" among Gumuz women who gave birth in the last five years in Metekel Zone.

Methods: A community based cross-sectional study was conducted from February 05 to March 07, 2014 on randomly selected sample of 696 women who had at least one delivery in the past five years before the survey. A pre- tested and structured questionnaire was used to collect quantitative data. Focus group discussion and in-depth interviews were used to collect qualitative data that supplement quantitative data. The binary logistic regression analysis was used to identify for variables that affect forest delivery using SPSS for windows version 20.

Results: Samples of 675 mothers were interviewed   of whom 184 (27.7%) delivered in forest. of all respondents, 551 (81.6%) were knowledgeable on forest delivery complications and 144 (21.3%) had favorable attitude towards forest delivery. Mothers 'age (AOR [95%CI]=1.3[0.1,0.6]),decision making on place of delivery (AOR[95%CI]=3.8[2.0,7.1]), maternal education (AOR[95%CI]=2.0[1.6,6.2]), husbands education (AOR[95%CI]=4.1[2.2,7.6]),religion (AOR[95%CI]=1.7[1.2.2.5]) and use of herbs to facilitate labor (AOR[95%CI]=3.1[1.5,6.5]) had significant association with forest delivery.

Conclusion: There was high prevalence of forest delivery in the Zone. Mothers' age, decision making power of mothers on place of delivery, educational status of mother and husband, religion and use of herbs to facilitate labor were the common factors associated with forest delivery.

Risk factors of Maternal Death in Jimma University Specialized Hospital, Ethiopia.

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Background: Maternal death has devastating effects on the family she leaves behind and country level. Most of the literatures are reviews of maternal death which are unable to determine the predictors of maternal death and do not consider change of time since there is variation in care given and did not identify timing of death.

Objective: To assess duration of maternal death and its associated factors in Jimma University Specialized hospital, Southwest Ethiopia from January 2010 to December 2014.

Methods: A time matched case control study was conducted on 600 charts, 120 cases and 480controls. Data was collected using checklist adapted from maternal death surveillance review of Ethiopia guide line. Data were entered into epi data 3 and exported to Stata 13 for analysis. Conditional logistic regression was done to identify the independent predictors of maternal death. The adjusted matched odds ratio with the 95%CI was reported and statistical significance was declared at $p =<0.05$. To ensure confidentiality only code was written on the check list.

Result: More than two third (68%) of death occurred during post-partum period. Predictors of maternal death include: age group of 20 – 34 (AMOR= 0.299, 95% CI (0.113, 0.792)), being from rural area (AMOR = 2.594, 95%CI(1.001,6.726)), prolonged labour (AMOR=37.141,95%CI(13.296, 103.750)), comorbidities (AMOR=9.631,95%CI(3.135, 29.588), referred cases from health center (AMOR=4.011, 95% CI (1.113, 14.464) and other health institution (AMOR=6.029, 95%CI(1.565, 24.626)).

Conclusion: Duration of labour, age, comorbidities, residence and referral were the major factors that affect maternal death.

Keywords: maternal death, maternal mortality, determinants of maternal death, trend of maternal death

Institutional Delivery Service Utilization and Associated Factors in Bench Maji Zone, South West Ethiopia: A Community - Based Cross Sectional Study.

Niguse Tadele, *Mizan Tepi University College of Health Sciences Tafesse Lamaro Mizan Tepi University College of Health Sciences.*

Background: Hundreds of thousands of women are still dying at the expiration of Millennium development goals due to complications of pregnancy and/or childbirth each year. Working towards Sustainable Development Goal to reduce the global maternal mortality and ultimately toward sending preventable maternal mortality requires amplifying the efforts and progress catalyzed by MDG 5 including Institutional delivery service utilization. In Southern Nations Nationalities and Peoples Regional State Institutional delivery was still low. So that this study was conducted to assess the status of institutional delivery service utilization and associated factors in Bench Maji Zone, South West Ethiopia.

Methods: Community-based cross-sectional study was conducted among mothers who gave birth in the last 2 years from June to September 2015 in Bench Maji zone. Multistage sampling technique was used to select 801 participants. A pre tested and structured questionnaire was used to collect data. Bivariate and multivariate data analysis was performed using SPSS version 20.0 software.

Results: The study indicated that 78.3% of the mothers delivered in health facilities. The common reasons for home delivery were the labour was going well (62.9%), feel more comfortable at home (8.3%) and home delivery is my usual practice (22.0%). Being in the age of 25-34 :(AOR [95 % CI] .4[.2,.7]and 35-44 :(AOR [95 % CI] .3[.1,.8] ,Merchant :(AOR [95 % CI] 12.3(1.6,94.1), have TV/Radio:(AOR [95 % CI]2.6[1.4,4.8],Middle:(AOR [95 % CI].5[.3,.9]and Upper income quartile:(AOR [95 % CI].2[.1,.4], Semi urban:(AOR [95 % CI].1[.02,.2] and Rural residence:(AOR [95 % CI].03[.01,.1], Knowledge of problems during labor:(AOR [95 % CI] 11.0[5.2,23.1] and ANC follow up :(AOR [95 % CI]26.2[11.2,61.2] had significant associations with institutional delivery service utilization.

Conclusions: Delivery service utilization in Bench Maji Zone especially in urban setting is relatively good in comparison with other studies in Ethiopia. Some of socio-demographic, accessibility and knowledge related factors were shown to be determinants of institutional delivery service utilization so that Expansion of ANC since it is an important entry point for other services, empowering women to enhance maternal health care service utilization and increasing accessibility of facilities is recommended to enhance service utilization.

Assessment of Ceasarean –Section Delivery and Associated Factors: the Case of One Public and One Private Hospital in Addis Ababa. *Tsigie Gebretsadik, MPH, Yihab Consulting PLC, Addis Ababa ,July 2012.*

Problem statement: Caesarean delivery is showing an increasing trend worldwide and is registered above the WHO recommendation (5). Caesarean delivery has associated risk of maternal morbidity and mortality than vaginal delivery. In Ethiopia, particularly in Addis Ababa, caesarean delivery is increasing (8). However, less attention is paid by researchers. Therefore, this study focuses on assessing the proportion of caesarean delivery and factors associated to it among mothers who delivered in two selected hospitals of Addis Ababa.

Objective:-The main objective of this study is to assess the prevalence of   caesarean delivery among mothers delivered in two selected hospitals and factors associated to caesarean.

Methods: The study design is a cross sectional study with internal comparison .Sample of 414 women/305 from Gandhi and 109 from Brass/ were included in the study. To estimate the proportion of caesarean delivery by demographic, socio economic and obstetric difference, descriptive analysis was done and to see the association with the independent variables, Bivariate and Multivariate analysis was done.

Results: Data from 414 mothers (305 from public and 109 from private) were collected from two hospitals, Gandhi from public hospital and Brass from private hospital. A total of 130(32%) have delivered by caesarean delivery. Type of Hospital and socio economic factors is highly associated with caesarean delivery.

Conclusion: Proportion of caesarean delivery in the city of Addis Ababa has shown an increasing and thus the rate has gone beyond the WHO recommendation. To ensure caesarean delivery is within the medical indication, government institutions should put in place a strict monitoring system to ensure the required quality and ethical consideration.

Intention toward the Continuation of Female Genital Mutilation in Bale Zone, Ethiopia.

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Background: Female genital mutilation (FGM) is a harmful traditional practice that is deeply rooted in Africa. It is associated with health complications and human rights violations. Research on intention for the continuation of FGM and the social determinants underpinning this practice are scarce. Therefore, this study intended to assess the intention of women toward the continuation of FGM among Bale Zone reproductive-age women.

Methods: A community-based cross-sectional study design supplemented by qualitative methods was conducted in 2014. A total of 634 reproductive-age women were involved in the quantitative part of the study. The respondents were drawn from five randomly selected districts of Bale Zone. The total sample was allocated proportionally to each district based on the number of reproductive-age women it has. Purposive sampling method was used for qualitative study. Then, data were collected using a pretested and structured questionnaire. The collected data were analyzed by Statistical Package for Social Sciences for Windows version 16.0. Multivariable logistic regressions were carried out to examine the existence of a relationship between intentions for the continuation of FGM and selected determinant factors.

Results: This study revealed that 26.7% of the respondents had intention for the continuation of FGM. Religion, safeguarding virginity, tradition, and social values were the major reasons for the perpetuation of this practice. Circumcised respondents and those who were not able to read and write were (AOR = 2.89, 95% CI = [1.33, 6.20]) and (AOR = 7.58, 95% AOR = [3.47, 16.54]) times more likely intending the continuation of FGM than uncircumcised and those who attended secondary-level education and above, respectively.

Conclusion: The study shows that the intention toward the persistence of the practice is high in Bale Zone. Rural residents, those who were not able to read and write, and circumcised respondents were more likely to continue the practice.

Keywords: females' genital mutilation, intention, continuation, Bale Zone, Ethiopia.

Antenatal Care and Women's Decision Making Power as Determinants of Institutional Delivery in Rural Area of Western Ethiopia.

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Background: Delivery by skilled birth attendance serves as an indicator of progress towards reducing maternal mortality. In Ethiopia, the proportions of births attended by skilled personnel were very low 15 % and Oromia region 14.7 %. The current study identified factors associated with utilization of institutional delivery among married women in rural area of Western Ethiopia.

Methods: A community based cross-sectional study was employed from January 2 to January 31, 2015 among mothers who gave birth in the last 2 years in rural area of East Wollega Zone. A multi-stage sampling procedure was used to select 798 study participants. A pre-tested structured questionnaire was used to collect data and female high school graduates data collectors were involved in the data collection process. Bivariate and multivariable logistic regression model was fit and statistical significance was determined through a 95 % confidence level.

Results: The study revealed that 39.7 % of the mothers delivered in health facilities. Age 15–24 years (AOR 4.20, 95 % CI 2.07–8.55), 25–34 years (AOR 2.21, 95 % CI 1.32–3.69), women's educational level (AOR 2.00, 95 % CI 1.19–3.34), women's decision making power (AOR 2.11, 95 % CI 1.54–2.89), utilization of antenatal care (ANC) during the index pregnancy (AOR 1.56, 95 % CI 1.08–2.23) and parity one (AOR 2.20, 95 % CI 1.10–4.38) showed significant positive association with utilization of institutional delivery.

Conclusion and recommendation: In this study proportion of institutional delivery were low (39.7 %). Age, women's literacy status, women's decision making power, ANC practice and numbers of live birth were found important predictors of institutional delivery. The findings of current study highlight the importance of boosting women involvement in formal education and decision making power. Moreover since ANC is big pillar for the remaining maternal health services effort should be there to increase ANC service utilization.

Keywords: Institutional delivery, Antenatal care, Decision making, Rural area

Postpartum Modern Contraceptive Use and Associated Factors in Aksum Town, Northern Ethiopia: A Community Based Cross Sectional Study.

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Background: Postpartum period is a critical period to address high unmet needs of family planning and to reduce the risks of closely spaced pregnancies. However, contraception during extended postpartum period has given less emphasis concerning contraceptive practice in Ethiopia. Therefore, this study was aimed to assess postpartum modern contraceptive use and associated factors among postpartum women in Aksum town.

Methods: A community based cross sectional study was conducted from March to April, 2015. A total of 601 postpartum women were selected by using systematic random sampling technique from the kebeles. Data was collected using pretested and structured questionnaires via face to face interview. Data was entered using Epi Info version 7 and then exported to STATA version 12 for further analysis. Adjusted odds ratios (AOR) with 95% confidence interval (CI) were used to identify factors associated with postpartum modern contraceptive use.

Results: Over all, 590 (98.2%) of women responded to the interview. Nearly half (48%) of women used modern contraceptive during extended postpartum period (EPP). Postpartum modern contraceptive use was significantly associated with secondary , tertiary education level [AOR= 4.25; 95% CI,1.29, 14.00; AOR= 5.36;95%CI,1.13,25.45] respectively; family planning counseling during prenatal and postnatal care [AOR=5.72;95%CI,2.68,12.28],having postnatal care [AOR=2.36;95% CI,1.15, 4.87], resuming sexual activities [AOR=9.53; 95%CI, 3.74, 24.27], menses returned after birth [AOR= 6.35;95% CI, 3.14,13.39]. In addition, experiencing problem with previous contraceptive use was negatively and statistically associated with current postpartum modern contraceptive use [AOR= 0.34; 95% CI, 0.16, 0.71].

Conclusions: Although knowledge of modern contraceptive methods was high among postpartum women, the reported level of current modern contraceptive use during extended postpartum period was low. Therefore, strengthening family planning counseling during prenatal care and postnatal care visits, improved postnatal care services utilization and educational status to enhance modern contraceptive use for postpartum women is important.
Keywords: Modern contraception, postpartum period, Aksum town.

Couples' Unmet Need for Contraception and Associated Factors in Debre Markos Town Administration, Northwest Ethiopia: A community - based cross sectional study.

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Background: Most studies on unmet need for contraception in Ethiopia involved only women with some passing inferences made for men and couples. However, reproductive decisions including family planning issues are not made by women alone. Therefore, this study was aimed to determine the level and factors associated with couples' unmet need for contraception in Debre-Markos Town Administration, Northwest Ethiopia.

Methods: A quantitative community based cross-sectional survey was conducted among 266 couples from March 01 to 15, 2015. A simple random sampling technique was employed to select study subjects. A pre tested and structured questionnaire was used to collect data. The collected data were entered into Epi-Data version 3.02 and exported to SPSS version 20.0 for analyses. Furthermore, bivariate and multivariable logistic regression analyses were used to identify predictors of couples' unmet need. The crude and adjusted odds ratios together along with the 95% confidence intervals were computed and interpreted accordingly. Statistical significance was declared at p-value <0.05.

Results: The overall couples' unmet need for contraception was 12% of which 8.9% was for spacing and 3.1% was for limiting. Variables such as couples discussion on contraception (AOR = 3.23, 95%CI: 1.160- 9.005), husbands' disapproval on wives'contraception use (AOR = 4.71, 95%CI: 1.872 - 11.873), and wives' knowledge on various types of contraception (AOR = 3.82, 95%CI: 1.149 -12.702) were significantly associated with couples' unmet need for contraception.

Conclusion and Recommendations: One-eighth couples had unmet need for contraception in the study area. Promoting couples communication, involving men more andcreate women's awareness on various methods of contraceptionto make an appropriate choice is needed.

Keywords: Contraception, unmet need, Couples, Debre-Markos, Ethiopia

Contraceptive Discontinuation and Patterns of Method Switching among Women of Reproductive Age Group in Jimma Town, Southwest Ethiopia.

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Background: The duration and effectiveness of contraceptive use has it s own demographic impact that can make a substantial role to overall fertility rates and to rates of unwanted pregnancies. Many studies done in both developed and developing countries revealed that analysis of contraceptive discontinuation and switching pattern is important to improve services deliveries and to indicate the method need to be communicated. However, such data were limited in Ethiopia, particularly in Jimma town. Therefore exploring the extent, the reasons and factors associated for contraceptive discontinuation and switching has program implications.

Objective: To assess contraceptive discontinuation and patterns of method switching among women of reproductive age group in Jimma town, South-west Ethiopia.

Methods: a community based cross- sectional study design was conducted from March 1 to 15, 2013 on 423 women of reproductive age. Simple random sampling was used to select study participants. Pretested structured questionnaire which contain calendar data format were employed. The data collected were analyzed with SPSS version 16 and Excel. Life table analysis techniques were employed to estimate discontinuation and switching rates. Cox-regression was used to evaluate statistical significance of covariates.

Result: Most of the respondents 314 (74.2 %) were between 20 to 34 years. Life table analysis result showed, of all episodes initiated for use 11.5% of them discontinued within a year and 27.4% of them discontinued by the end of second year. Twelve month cumulative rate of contraceptive discontinuation showed highest for Pills (30.0%) followed by Condom (15.3%) and Injectable (10.4%). Quality of service has a statistically significant association with rate of discontinuation ($p<0.001$) and switching ($p<0.001$). Side effects and need for more effective methods are prominent reason of 12 month discontinuation (3.5 % each). The rate of switching to other contraceptive method by the end of first year was much higher (9.6%) than rate of abandon (1.5%). Twelve month switching rate was highest for pills (19.9%) followed by condom (12.4%).

Conclusion: compared to national contraceptive discontinuation rate, lower rates of contraceptive discontinuation within a year were seen for all methods combined. However, it was highest for pills and injectable. Discontinuation due to desire for pregnancy, side effects and the need for more effective methods were much higher. Variations were also seen by socio-economic and demographic characteristics and quality of services. Thus, family planning programmes need to consider these variations while planning.

Keywords: Contraceptive discontinuation, method switching, reproductive age women.

Prevalence of Gender Based Violence and Associated Factors among Females of Federal Police in Addis Ababa, Ethiopia. *Sintayehu Kassa*, *MPH, Haromaya University; Amare Worku, MD., Addis Continental Institute of Public Health.*

Background: Despite the higher risk of gender based violence against women in Ethiopia, information on the prevalence, and its determinant factors among female police were scarce, particularly in the study area.

Objective: This study was undertaken to determine the prevalence of gender based violence and associated factors among female police members of federal police in Addis Ababa February 2015.

Method: An institution based cross-sectional study was conducted in February 2015 among 419 female police members of federal police in Addis Ababa, using simple random sampling technique. A pre-tested self-administered questionnaire was used. The data were entered to Epi-info statistical software version 3.5.3 then transferred to SPSS version 20 software package to employ bivariate and multivariate logistic regression analysis.

Result: The study revealed that the prevalence of GBV among female police members was 68%; 95%CI (63.1-72.7). The female police members who are currently living alone and who are living with their close friends were more likely to have had GBV [(AOR =2.620, 95%CI: 1.261–5.446)], [(AOR=9.146; 95%CI; 1.133-73.797)] respectively when compared to those who are living with their husband or boyfriend and Female police members who are currently working at night also have higher odds of GBV [(AOR=1.769; 95%CI; 1.071-2.919)] compared to those who do not work at night. Odds of women who have previous experience of witnessing violence against women is more than double to have had GBV [(AOR=2.013; 95%CI; 1. 285-3.154)] when compared to those who do not have experience of witnessing VAW.

Conclusion: This study shows that GBV is very prevalent among female police members of federal police Addis Ababa and it is associated with certain factors such as, with whom currently living with, working at night time and having previous experience of witnessing violence against women. Therefore, it is recommended that GBV needs due attention and solution actions by policy makers, federal police officials and other concerned bodies.

Intimate Partner Violence against Married Women and Associated Factors in Gedo Town, Oromia, Ethiopia.

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Background: Violence against women is worldwide public health problem. The problem of domestic violence in developing countries started surfacing in the last decade. However, lack of data from these countries still curtails a full understanding of the issues, and the magnitude and potential impacts it has on the life of women affected by domestic violence. The aim of this study was to assess intimate partner violence against married women in Gedo town, West Shoa zone, Oromia, Ethiopia

Methods: A community based cross-sectional study design with quantitative data collection methods were employed from April 5 to April 15/2015. Survey was done in Gedo town to identify the eligible Women and consequently household code number was given. A list of reproductive age women15-49 years were prepared and entered into computer SPSS window 20.0 version from surveyed data then, selected by simple random sampling computer generated household number and data collectors were cross-checked household number with sampled household number during data collection period. After data collection, each questionnaire was checked for completeness and code was given before data entry. The returned questionnaires were checked for completeness, cleaned manually and entered in to Epi-data 3.1 and double verified data were exported to SPSS windows version 20.0 for further analysis. Both bivariate and multivariable logistic regressions were used to identify factors associated with Intimate partner violence against women (Physical, Psychological and Sexual).

Results: The mean age of the study participants were 30.58yrs with SD±7.01years and the majority of ethnicity were Oromo 285(86.9%). This study revealed that 27.6% of married women had faced physical violence with independent predictors of Being age 21-30 years were 11.87 Times (AOR= 11.87, 95% CI (1.79 to 78.87) more likely to faced IPVAW as compared to less than 20 years old women.

Married Women whom marriage arrangement through Abduction had 6.67times(AOR= 6.67, 95% CI (1.97- 22.257) more likely to faced physical violence as compared to marriage ceremony by agreement of both partners and women who had lived with mother/father of her partner were 12.99times (AOR= 12.99, 95% CI (4.15- 40.68) more likely to be faced physical violence as compared lived with her sister/brother and also married women's partner who attend school from grade 1-8th were 5.4 times (1.05 to 29.87) more likely to face physical violence as compared to those who attended grade 12th and above, women who faced psychological violence by their partner were 3.39times (AOR= 3.39, 95% CI (3.395-17.65) more likely to experienced physical violence as

compared to not faced psychological violence, Finally, women who were married at age less than16years were 5times (AOR=5.309, 95% CI (1.370, 20.573) more likely to experience psychological violence as compared to women who were married at age range between 17-20years. while 31.0% were faced psychological violence with associated factors of: - Married women who had not formal education were 3.5times(AOR=3.524, 95%CI(1.001-12.382) more likely to faced psychological violence as compared to those who attended grade 12th and above. Married Women who were smoke tobacco currently were 8.6times (AOR =8.6, 95% CI (1.741- 42.27) more likely to experience psychological violence as compared to none smokers of tobacco. Married women's partner who were chewing chat were 2.12times (AOR=2.124, 95%CI (1.094 - 2.121) more likely to faced psychological violence as compared to whose partner was not chewing chat and women who faced physical violence by their partner were 5 times (AOR=5.003, 95% CI (2.593 - 9.857) more likely to faced psychological violence's as compared to had not faced physical violence in the last 12months. and finally 21.7% were experienced sexual violence with independent predictors of Women's whose marriage arrangement through family supported were 2.98 times (1.23 - 7.25) more likely to faced sexual violence as compared to marriage ceremony through agreement of both partners'. Women who had lived without other relative were 3.7times (AOR=3.7, 95%CI (1.134 - 12.134) more likely to be faced sexual violence as compared to lived with her sister/brother. Married Women who smoke tobacco currently were 19times (AOR=19, 95%CI (2.99 - 121.5) more likely to experienced sexual violence as compared to none smokers of tobacco. Married women who had marital length of 6-10 years were 3.2times (AOR=3.2, 95% CI (1.225 - 8.84) more likely to faced sexual violence by their partner as compared to those above 11 years of marital length . Finally women who faced psychological violence by their partner were 2.4times (AOR=2.4, 95%CI (1.09- 5.144) more likely to experience sexual violence as compared to not faced psychological violence

Conclusion: This study determined that the prevalence of Intimate partner violence against married women and associated factors which revealed that the proportion of IPVAWs had faced one violence from the three types of violence were 102(31.3%) with 95% CI of (25.8%-36.2%), of which 56(17.2%) with 95% CI of (12.9%-21.8%) were faced two from three types of violence among this population. The overall overlapped of all three types of violence of IPVAW was 16(4.9%) with 95% CI (2.8%-7.4%) among married women in Gedo town. Finally this study identified Socio-demographic and Household Related Factors associated with Intimate partner violence against married women. Therefore, these factors would be emphatically considered during development of women health and family guidance by police makers in collaboration with others responsible bodies.

Keywords:-Intimate partner violence against married women, Gedo Town, Oromia, Ethiopia

Level of Institutional Delivery Service Utilization and Associated Factors among Mothers Who Gave Birth Within the Last Two Years in Dembecha District, West Gojam Zone, Northwest Ethiopia; 2014.

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Introduction: Improving the health of mothers and children through well-organized institutional delivery service is central to achieve reduced maternal and child morbidity and mortality. Institutional delivery service utilization is one of the most important interventions to reduce maternal death. But still the risk of death from complications relating to pregnancy and childbirth over the course of a woman's lifetime is higher in the developing countries like Ethiopia.

Objectives: To assess the level of institutional delivery service utilization and associated factors among mothers who gave birth within the last two years in Dembecha district, West Gojam zone, Northwest Ethiopia, 2015.

Methodology: community based quantitative cross-sectional study was conducted among 674 randomly selected women. Multi-stage sampling with stratification sampling technique was used. Descriptive and analytical statics were applied.

Result: A total of 674 out of 700 women who gave birth within the last two years were interviewed with a response rate of 96.3%. The mean age of the respondents was 31.93 ± 6.2 years. Of the total respondents 577(85.6%) were rural residents and 659(97.8%) were Orthodox in their religion, 641 (95.1%) were married. Of all respondents, 229(34%) of them utilized health institutions for their last delivery. The results of multivariate analysis revealed that history of still birth (AOR=0.25, 95% CI=0.07-0.77), number of ANC visit (AOR=38.51, 95% CI=22.35-66.33), functional media (AOR=2.61, 95% CI=1.59-4.28) and distance to nearby health facility (AOR=0.52, 95% CI=0.32-0.83) were found to be significantly associated with institutional delivery service utilization.

Conclusion: In this research the level of institutional delivery service utilization is still low compared to government initiatives. So, concerned bodies should contribute their share to improve institutional delivery service utilization in the study area.

Keywords: institutional delivery, less than two years, associated factors, Dembecha, Northwest Ethiopia

Prevalence of Rhesus Negative Gene among Pregnant Women and Management of RH Negative Pregnancy Using Cross Sectional Study in Gandhi Memorial Hospital, Addis Ababa, Ethiopia.

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Background: In Ethiopia, the prevalence and utilization rate of Anti D prophylaxis for Rh-negative pregnant women was not investigated. This study aimed to determine the prevalence and assess the management Rh negative pregnancy.

Methods: A cross sectional study using quantitative and qualitative methods was used in the study. A total of 497 women case files were included in the study to determine the prevalence by using systematic random sampling. Then another 384 case files of Rh negative women was included by simple random sampling for assessment of the management of Rh negative pregnancy. In the qualitative method in-depth interview with 7 health professionals by using purposive sampling was conducted.

Result: The prevalence of Rh negative pregnant women in the study period is found to be 7.2%. The crude utilization rate of anti-Rh antiserum rate is 14.3%. The Rh type of the father documented is 18.8%. Regarding Anti D administration all socio demographic factors(age, marital status and educational level, employment status) included in the study were not statistically significant with anti D administration and have chi square ranging between 0.1-0.6 and p value >0.05.

Conclusion: The prevalence of Rh negative women is 7.2%, which is of a high magnitude keeping in view the prevalence rate of the other African countries estimate. There is lack proper management of Rh Negative pregnant women in terms of affordability issues, shortage of medication and special concern. Other research should pursue this study to improve management of the condition by including other parts of the country particularly in rural areas and also assessment of the knowledge, attitude and practice of health professionals is also important.

Prevalence and Associated Factors of Risky Sexual Behaviours among In-School Youth   (15–24 Years): The Case of Lalibela Town, North Wollo Zone, Amhara Regional State, Ethiopia.

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Background: Adolescence and youth is a period of great opportunity and hope. It is the period between childhood and adulthood when young people undergo major physical, emotional, and social development, with significant impact on their sexual and reproductive health. This study was aimed at assessing the magnitude and factors associated with risky sexual behaviours (RSB) among in-school youth (15-24) in Lalibela Town, Ethiopia.

Methods: we conducted a cross-sectional institution based quantitative survey. The data were collected from May through June 2014 in three schools. A systematic random sampling technique was used to select a sample of 1362 participants. A structured pretested self-administered questionnaire was used to collect data. The univariate statically analysis was used to describe variable using tables and graphs. The multivariable logistic regression model was developed and factors associated with risky sexual behaviour were identified.

Result: A total of 1332 in-school youth (ISY) with a 97.8% response rate were included in the study. Five hundred fourteen (38.6%) in-school youth had sexual intercourse. The mean age at the first sexual experience with standard deviation (Mean ± (Sd)) was 15.25 ± (1.85) years, Median=15 years, Range from 11 to 24 years. Among Sexually active in-school youth, the prevalence of risky sexual behaviour, students reported at least one of the three risky behaviours which consist of engaging sexual debut before age 18 years, having multiple sexual partners and not consistently using condom was 46.5% (239/514). The odds of having risky sexual behaviour among urban resident ISY was 1.65 times higher than their counterpart (AOR 1.65; 95%CI: 1.12 – 2.43, P-value <0.001). The odds of RSB among ISY who had peer influence in sexual debut 2 folds higher (AOR 2.06; 95%CI: 1.37 – 3.12, P-value <0.001) than their counterpart. The odds of the risky sexual behaviour of youth who never chew khat was 0.51 time lower (AOR 0.51; 95%CI: 0.32 – 0.80, P-value <0.001) than their counterpart, khat chewers.

Conclusion: A large proportion of in-school youth engaged in the risky sexual behaviour. Permanent residence, peer pressure, substance use and participating in religious services influence the sexual behaviour of in-school youths. Therefore, improving access to sexual and reproductive health for in-school youth is highly recommended. All concerned partners should work to create awareness about the consequences of these risky sexual behaviours in the study area.

Keywords: Lalibela, In-School Youth, Substance use, Risky sexual behaviour, Ethiopia.

Early Marriage and Associated Factors among Pregnant Women in Hulet Ejju Enessie District, Northwest Ethiopia.

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Background: early marriage is one of the barriers to achieve MDG 3 due to its adverse consequences. Comparable population-based data on the problem are lacking that indicates the importance of site specific studies, especially in rural parts of our country, where little is known about the problem. Assessing the extent of the problem also provides an insight for different stakeholders including health care providers to respond to the problem.

Objective: The aim of this study was to assess the magnitude of early marriage and its associated factors among pregnant women in Hulet Ejju Enessie district, Northwest Ethiopia.

Methodology: Quantitative community based cross sectional study was carried out in the district from January 1 to 31, 2014. A total of 417 randomly selected pregnant women were involved in the study. A semi-structured pretested questionnaire was used for data collection. Four trained female data collectors were involved in the data collection. Odds ratio with 95%CI was estimated to identify predictors of early marriage using multivariable Logistic regression. Statistical significance was declared at p-value ≤0.05.

Results: In this study, the prevalence of early marriage (less than 18years) among pregnant women was 86.8%. Two hundred forty seven (59.2%) of women reported that the age at their first marriage was before age 15. The median age at first marriage was 15 (±3.5) years. Compared to women who are illiterate, those who can read and write, with primary education and with secondary or above education were about two (COR= 1.87, 95% CI; 1.23, 4.08), two (AOR = 2.21, 95% CI; 1.69, 7.01) and three (COR= 2.97, 95% CI; 1.75, 11.62) times more likely to marry early. Women who marry by arranged marriage were three and half (AOR = 2.65, 95% CI; 1.70, 10.01) times more likely to experience early marriage than those who marry by love marriage. On the other hand, women having three or more children were 0.43 (AOR = 0.43, 95% CI; 0.12, 0.65) and having one to two children were 0.72 (AOR = 0.72, 95% CI; 0.30, 0.87) more likely to marry later than those who has no child.

Conclusion and Recommendation: In this study, the magnitude of early marriage among pregnant women is high which may lead to a serious health consequence both on the mothers and on their foetus. Thus, targeted efforts should be made by all concerned stakeholders to reduce the problem in the study area.

Keywords: early marriage, pregnant women, Hulet Ejju Enessie district, North West Ethiopia.

Premarital sexual practice, its consequence and influencing factors among in-school youths in Shoa Robit town, North Shoa Zone, Amhara region, Ethiopia: A Cross-Sectional Study.

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Background: More than one billion people in the world are between the ages of 15 and 24, and most live in developing countries. Unsafe sex is a major threat to the health and survival of millions of adolescents. These very large and productive groups of the population are exposed to various sexual and reproductive health risks/problems.

Objective: The purpose of this study was to assess premarital sexual practices, its consequences and contributing factors among in-school youths of Shoa Robit town, North Shoa Zone, Amhara National Regional state, Ethiopia.

Methods: An institution based cross-sectional study employing quantitative and qualitative survey was conducted on a random sample of 540 in-school youths. Pre-test was done on five percent of the sample in similar are before the actual data collection take place and correction on instruments was made accordingly. Collected data was checked, coded, cleaned and entered into computer using Epi Info version 3.4.5 and for analysis SPSS version 21 was used. Bivariate and Multivariate analysis of data was applied.

Result: Of the calculated sample size, total of 508 respondents completely filled to the questionnaire in the study with response rate of 94.1%. Among a total participants 274(53.9%) were females and 234 (46.1%) were males. Among the study subjects, 224 (44.1%) of them reported that they had premarital sexual intercourse at the time of the survey, of which 106 (47.3%) for males and 118(52.7%) for females. The mean age of sexual intercourse was 17.5 ± 1.5 years for males and 16.8 ± 1.4 years for females. Youths who come from urban were more likely experience sex than youths from rural (AOR=3.432; 95%CI=1.971, 5.965). Youths who drink alcohol, smoke cigarette, chew chat and watch pornographic films were more likely experience sex than who did not (AOR= 2.538; 95%CI=((1.378-4.674), (AOR= 6.715; 95%CI=1.422,31.711), (AOR= 5.946; 95%CI=0.998, 35.445) and (AOR= 5.119; 95%CI=2.983, 8.784) respectively.

Conclusion: In general, this study indicates that a large proportion of in-school youths were practicing premarital sexual intercourse. In this survey, being grade 11 1nd 12, drinking local alcoholic beverages, smoking cigarette, chewing chat, living in urban, watching pornographic films, and having higher mother's education were found to be predictors of premarital sexual practice.

Risky Sexual Behavior and Factors Associated with it among Public and Private Secondary School Students in Addis Ababa: A Cross-Sectional Comparative Study.

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Introduction: Currently, an unprecedented 1.8 billion youth live globally. Yet, in a world of adult concerns, young people are often overlooked. Most young people begin sexual activities during adolescence. The contribution of the school type towards developing risky sexual behaviour by the students has not been explored well. Thus, this study tried to compare Risky Sexual Behavior and Factors Associated among Public and Private Secondary School Students in Addis Ababa

Objective: To assess the prevalence of risky sexual behavior and factors associated with it among public and private secondary school students in Addis Ababa.

Method and material: A comparative cross sectional study was conducted from February15-Mar.16, 2015.A multistage random sampling technique was used to identify secondary schools. Study participants were selected using simple random sampling technique. Two population proportion formula was used to calculate a total sample size of 1037 students (517 public 518 private). Data was summarized using descriptive statistics including mean, proportion and standard deviation and inferential statistics such as chi-square test and binomial logistic regression. Ethical clearance was obtained from Debre Markos University.

Result: A total of 1,037 students (519 public and 518 private) participated in the study making the response rate 98.8%.Among all the students (public and private), a quarter of them (264(25.5%)) had started sexual intercourse at the mean age of 16.39years (+SD 1.7). Of those who stared sex, 188 (71.2%) of them reported risky sexual practices. The prevalence of risky sexual behaviour in public and private schools were 73.28 % and 69.17%, respectively. The difference between the two categories is not statistically significant (p>0.05).

Conclusion: A quarter of secondary school students have started sex. Seven in 10 of those who ever started sex practiced risky sexual behavior. Thus, parents, the government and non-government organizations working on students should work further to reduce risky sexual behavior.

Magnitude and Associated Factors for Institutional Delivery Service among Women Who Gave Birth in the Last 12 Months in Ayssaita District, North East Ethiopia: a Community Based Study.

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Background; Proper medical attention and hygienic conditions during delivery can reduce the risk of Complications and infections that can cause the death or serious illness of the mother and/or the newborn baby. Institutional delivery by skilled attendants is very important to reduce maternal and infant mortality; However, there is paucity of data on the magnitude and associated factors especially in the agropastural communities.

Objective: To assess the magnitude and associated factors for institutional delivery service among women of reproductive age who gave birth in the last 12 months preceding the survey in Ayssaita district.

Methods: A community based cross-sectional study was conducted from April 27- 09March, 2015. Data were collected from a sample of 574 women in the district using structured questionnaire. Bivariate and multivariate analyses were conducted and Odds ratio with 95% CI was estimated to identify predictors of institutional delivery care utilization. Statistical level of significance was declared at $p < 0.05$.

Results: The study   revealed that 36.1% of deliveries were assisted by skilled health professional at health institution Four hundred nighnty six (86.4%) of women attended at least one antenatal care visit during last pregnancy. Among women who attended ANC, more than half (74.6%) of the women made their first visit during second and third trimester of pregnancy and 49.9% had less than four antenatal visits. Women's educational level (AOR=2.46, 95%CI=1.39,4.34,AOR=2,88,95%CI=1.43,5.81)and marital status (AOR=3.97,95%CI=1.07,14.70),and frequency of ANC visit (AOR=3.23, 95%CI=1.02,10.27) were significantly associated with institutional delivery care utilization.

Conclusions and Recommendation: The utilization of institutional delivery care services is inadequate in the study area. Improving the status of women by expanding educational opportunities, strengthening health extension workers to create community awareness on program with the focus on obstetric danger signs of pregnancy and place of delivery. Magnitude and associated factors for institutional delivery service among women who gave birth in the last 12 months in Ayssaita District, North East Ethiopia: a community based study MPH, college of medical and health science, samara university; Lemessa Oljira and Bizatu Mengiste, PhD., Colleges of Medical and Health Sciences, Haramaya University.

Environmental and Occupational Health

Abs 86

Assessment of Magnitude and Associated Factors of Occupational Injuries among Municipal Solid Waste Collectors in Yeka Sub-City Addis Ababa, Ethiopia.

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Solid waste management has emerged as an important Public and environmental health issue. Municipal solid waste workers (MSWWs) are potentially exposed to a variety of occupational hazards and safety risks. Besides, the occupational problems and health risks on waste collectors were not well identified and studied. Currently, there are 73 Micro- and Small enterprises engaged in solid waste collection services, operating in Yeka sub-city for the house to house collection of municipal wastes with 734 workers. The aim of this study was to assess the magnitude and associated factors of occupational injuries in Yeka sub-city.

The methods implied in the study was cross-sectional study design using cluster sampling technique through taking Sampling frame form the sub city and constituting at least 5 enterprises randomly selected from all woredas in the sub city consisting sixty three (63) Micro and Small Enterprises with 635 workers recruited for the study using cluster sampling technique. Throughout the study a pre tested structured questionnaire and observation checklist was used to gather information and frequencies for descriptive statistics were used to describe data and OR with 95% CI was computed to see the presence of association between selected independent variables and occupational injury.

This study showed overall prevalence of occupational injury among solid waste collectors to be 38% (95% CI; 34.3% - 41.9%) in the last 12 months. Constituting significant negative predictors of Smoking habit (AOR= 2.30, 95%CI; 1.19, 4.44), sleeping disorder (AOR=2.27, 95% CI; 1.20, 4.29) and Job dissatisfied (AOR=1.94, 95%CI; 1.35, 2.80). Poor personal hygiene practice and inadequate protective and safety measures were observed in the area. Therefore, occupational injuries were common in the area and factors contributing for the occurrence were preventable and modifiable behavioural factors like smoking habit, sleeping disorder and job dissatisfaction. In a waste collection system dominated by inadequate PPE and unsafe handling and disposal of wastes, Health education and different motivational activities for enterprises appeared to play a significant contribution in preventing occupational injuries of waste collectors.

Hygienic Practice and Associated Factors among Street Food Vendors at Awi, East and West Gojjam Zone Towns, North -West Ethiopia, 2015.

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Introduction: Street food vending has become an important public health issue throughout the World. Due to improper street food vending practices, food and water born diarrheal disease are the leading causes of illness and death in less developed countries. Even though different literatures identify factors of poor street food vending practice, yet there is no study conducted on these study areas and the role of some variables are not also investigated in the previous studies.

Objectives: To assess hygienic practice and associated factors among street food vendors at Awi, East and West Gojjam Zone Towns, North -West Ethiopia, 2015.

Methodology: A community based cross sectional study design was conducted among 390 randomly selected permanent food vendors from five conveniently selected towns of Awi, East & West Gojjam Administrative Zones. Before collecting the actual data, a base line survey was conducted to make a sampling frame and know the actual number of food vendors in the towns. Data was collected using standard, structured, pretested and translated interviewer administered questionnaire and observation check list. Data were entered into Epidata version 3.1 software and analyzed with SPSS version 20. Binary logistic regression model was used to identify the independent associated factors. Variables that have P value of <0.2 at bivariate analysis were exported to multiple variable analysis. The finding was interpreted using Odds ratio with p value of less than 0.05 at 95% confidence interval.

Result: The overall poor hygienic practice of street food vending was 80.5% (95% CI 76.7, 84.4). Educational Status: non-educated (AOR=5.8 95% CI 1.43, 23.17), read and write (AOR= 5.2 95% CI 1.24, 22.22) as compared to primary educational level and above, monthly income less or equal to 500 ETB (AOR=3.4 95% CI 1.53, 7.49) as compared to income of >500ETB, no formal training on food handling (AOR=5.0 95% CI 2.27, 11.59) were independently associated with poor hygienic practice of street food vending.

Conclusion: prevalence of poor food handling practice in the study area is high where four out of five street food vendors are practicing unhygienic food vending. Concerned stakeholders need to provide basic training for street food handlers and provide financial and logistic support to increase their monthly income.

Keywords: poor hygiene, food vending, street food handlers, associated factors, five towns, Northwest Ethiopia

Assessment of the Prevalence of Needle Sticks Injury and Associated Factors among Health Care Workers in South Gondar Administrative Zone, Amhara National Regional State, North West Ethiopia.

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Background: Needle Stick injury is an injury caused by needle brakes of any part of body. Health care worker are at increased risk of accidental needle sick injury.

Objective: Assessment of the prevalence of needle sticks injury and associated factors among health care workers in South Gondar Administrative Zone, Amhara National Regional State, North west Ethiopia.

Methods: Quantitative cross-sectional study design complemented with qualitative observational method was used to assess the prevalence of needle sticks injury and associated factors among health care workers in South Gondar Administrative Zone, North West Ethiopia. Five hundred six study subjects were randomly selected from 74 Health facilities. Data were collected by using structured self administered questionnaire. Data was taken using structured checklist was used for qualitative data collection. Quantitative data was entered and cleaned using EPI Info version 3.5.2 and transformed to SPSS version 16. Frequency distributions, bivariate and multivariate logistic regression with 95%CI were used for analysis.

Results: A total of 506 health care workers with (90.7% response rate) in a total of 74 health facilities participated in this study. The ages of respondents ranged between 18 and 55 years with mean of 28.3 with standard deviation of $\pm$ 6.78 with mode of 26. Two hundred forty two (47.2%) of the study participant were males, majority 476 (94%) were Orthodox by region and (98%) were Amhara by ethnicity.

Majority of the participants profession were nurses 235 (46.4%), waste handler and pharmacist were the next, 73 (14.4%) and 66 (13%) respectively. Majority 453 (86.9%) of the participants had work experience of above 5 years. Regarding of marital status, married and singe accounted 283 (55.9%) and 204 (40.3) respectively. Majority of the respondents were working at government health centers, a government hospital and private clinics 410 (81%), 50 (9.9%) and 46 (9.1%) respectively A total of 74 health facilities were addressed in this study of which governmental health centers accounts 76.7% (n=33), one government zonal hospital and remains private clinics. Among all health facilities only 46.5 % of them had safety box in each room for disposal of needles, of which only 66.6% utilized safety box properly.

Conclusion and Recommendation: The prevalence of needle stick injury was 10.7% among health care workers in this study area. Sex, working area, recapping of needles and emergency situations were significant in the multivariate analysis. All health care workers practiced safe management of sharp wastes without recapping the needle and by using puncture proof sharp container because it's one of the most important strategies to prevent needle stick injuries.

Magnitude and Associated Factors of Occupational Injuries among Building Construction Workers in Addis Ababa, Ethiopia.

Frehiwot Legesse; _Zewdie Aderaw, MPH._

Introduction: Accidents at construction sites are identified as a major public health problem throughout the world with high rates of fatal and non-fatal injuries. Although safety climate has been linked with safety performance and work-related accidents, yet it is scarcely studied and considered in injury prevention programs in developing countries.

Objective: To assess the prevalence and associated factors of occupational injuries among building construction workers in Addis Ababa, Ethiopia.

Method: A cross-sectional study was conducted among 799 governmental building construction workers in Addis Ababa from September 4-10/2014. Data about socio-demographic and occupational characteristics, description of occupational injuries and work-related and behavioral risk factors were collected using a pre-tested structured questionnaire. Descriptive statistics was made for most of the variables and logistic regression was done to identify possible associated factors. And in this statistical analysis, association was determined, if value is less than 0.05 and it was considered as statically significant. Crude odds ratios and adjusted odds ratio with 95 % CI was used.

Result: Occupational injuries in the past 12 months were reported by 38.8% of workers. The most common body parts injured were lower and upper (42.3% and 34.4%). The majority of injuries were puncture (41.5%) and cuts (22.5%). Falls (37.0%) and injuries by hand tools (34.2%) were the main causes of injuries. The working days lost per year due to occupational injuries ranges [1-90 days/year]. About 93.9%-injured workers did not receive sufficient first-aid treatment at worksite. Only 10.0% injured workers reported filling an accident notification form. Majority (57.2%) of respondents did not use PPE. Marital status with P-value 0.04, Educational status [Can only read & write: AOR: 0.35, 95% CI: (0.15-0.84), Primary school: AOR: 0.15, 95% CI: (0.06-0.37) Secondary school: AOR: 0.07, 95% CI: (0.02-0.22), Technique and vocational /above: AOR: 0.07, 95% CI: (0.02-0.24)], [plasterer, AOR: 3.76, 95% CI: (1.15-12.29) and daily laborer AOR: 3.05, 95% CI: (1.95-9.84)] by job category, extended working hours [AOR: 2.08, 95% CI: (1.27-3.39)], drinking alcohol [AOR: 2.46, 95% CI: (1.44-4.19)]; chewing chat [AOR: 3.79, 95% CI: (1.88-7.69)], sleeping disorder [AOR: 2.10, 95% CI: (1.11-3.99)], job dissatisfaction [AOR: 1.78, 95% CI: (1.13-2.81)] and using PPE [AOR: 0.04, 95% CI: (0.03-0.04) were significant risk factors of occupational injuries.

Conclusion and Recommendation: Occupational injuries are common among this sample of construction workers with significant relation to job category, extended working hours, substance abuse, poor utilization of PPE and other risk factors. So, it is important to develop successful construction sites guidelines and manuals to prevent work-related injuries and promote safer work practices for construction building workers.

Prevalence of Needle Stick Injury and Exposure of Blood and Body Fluids of Healthcare Workers in Ethiopia, Meta-Analysis.

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Background: Exposure of needle stick injury and body fluids may lead to serious and potentially fatal infections with blood-borne pathogens. The magnitude of needle stick injury among healthcare workers vary from studies from 17.5% to 62.8% in Ethiopia. This big difference give less evidence for the credible information for action to intervention. It needs a weighted evidence for policy makers to estimate the magnitude of needle stick injury and exposure of body fluids among healthcare workers.

Objectives: Assessment of the pooled prevalence of needle stick injury and exposure of blood and body fluids of healthcare workers in Ethiopia.

Methods: Eligible Studies were collected by searching electronic databases from MEDLINE/PubMed and EMBASE (from 2000 to 2015). Searching strategy was also only considered English language published studies. Descriptive and analytic studies were considered in this review. The exposure of any kind of healthcare worker in the occupation setup working and exposed to needle stick injury and blood and body fluids were included. Healthcare workers are nurses, physicians, midwifes, other auxiliary healthcare workers working in health care setting of Ethiopia. The past one year exposure of needle stick injury and body fluids were included. Only Publication in English and published late 2000 Gc were considered. Data was extracted by using data extraction tool. The Joanna Briggs Institute tool for prevalence critical appraisal tool was were used for the quality criteria. Test of heterogeneity I^2 to measure total variation across studies were conducted, where I^2value of 25% to 50 %, 50% to75% and greater than 75% were considered low, moderate and high heterogeneity respectively. STATA 13 software was used for met analysis.

Results: A total of 13 studies involving 4246 health care workers participated on this review. The studies were conducted in six different regions of Ethiopia. The prevalence of needle stick injury from 11 studies was 33.43%, 95%CI (25.27% to 44.33%).The prevalence of needle stick injury was low in high quality studies 28.77%, (95%CI 22.27%-37.16%) compared to low quality studies42.63%, (95%CI 27.91%-65.12%).The pooled prevalence of exposure of body fluids was 36.98%, 95% CI (26.46% to 51.69%) from six studies. Only English-language articles were included in this articles a limitation

Conclusions: This pooled result showed that the prevalence of needle stick injury and exposure of body fluids were 33.43%and 36.98%respectively. High quality research would be considered to determine the magnitude of needle stick and blood and body fluids exposure.

Keywords: needle stick, needle stick injury, Ethiopia, exposure of body fluids.

Abs 91

Occupational Injuries among Saudi Star Workers in Abobo District, Agnwa Zone, Gambella Region, Western Ethiopia: Across-Sectional Study. *Tekilil Amdesilassie, MPH, Gambella, Ethiopia; Elias Ali, MD, MPH; Fikiru Tafesse, MPH.*

Background: Agricultural workers are less-protected compared to workers in other sectors. Very limited studies in the field of occupational health hazards indicated that the magnitude of occupational injury is serious in Ethiopia.

Objective: To asses Occupational injuries among Saudi Star workers in Gambella regional state, Ethiopia, 2014.

Methods: Institution-based cross-sectional study design using quantitative and qualitative data collection methods were conducted from April 01/2014- May 01/2014. A total of 303 Saudi Stare workers were included in the study by using stratified simple random sampling technique. And regression analysis was done in order to control potential confounders. Quantitative data were collected through interviews using semi-structured and pre-tested interviewer administered questionnaire and the collected data were entered using EPI dataversion.3.1 and analyzed using SPSS) version 16. Binary logistic regression was used to see the association between independent variables and occupational injury and computed using Odds Ratio. Enter hierarchical method was used in order to control potential confounders. A p-value <0.05 was taken as significant in the final model. Qualitative data were collected using in-depth interview, observation and document review, which was analyzed thematically.

Results: Quantitative result part: The response rate was 287(94.71%). The overall prevalence rate of work related injury within the past 12 months was 145 out of 287 (50.50%). In our study, Cut and laceration were reported as the major type of injuries, each accounts 58(40%). The most reported cause of injuries was hand tools which accounts 78(53.8. Out of the 145 injured cases 133(77.9%) were hospitalized and miss 3480 work hours from work place, an average of 26.17 work hours per injured person per a year. As compared to respondents those who able to read and write, odds of injury among workers unable to read and write were 9.62 higher (AOR=9.62, 95%CI: 2.98-31.73). Respondents those who trained were 65% less likely injured than those who did not (AOR=0.35, 95%CI: 0.15-0.80). As compared to workers who did not smoke cigarette, odds of injury among the counterpart were 7.44 higher (AOR=7.44, 95%CI; 3.25-17-11).

Qualitative part: Expert observations and document reviewed Indicated, Warning signs and health and safety instructions or procedures did not exist. Occupational safety and health professional were not recurred committees were not available in the company at the time of the data collection. No regular visits and inspection are made on health and safety conditions of workplaces.

Conclusion and Recommendation: The magnitude of occupational injury in study area, workplace was high. And which needs a joint involvement from regulatory body and the company itself in the process of reducing occupational injury.

Keywords: occupational injury, agricultural workers, organizational factors, behavioral factors, Ethiopia

Assessment of Face-Cleanliness and Environmental Control Components of Safe Strategy among Model and Non-Model Households: A Comparative Cross-Sectional Study in Selected Woreda of Lideta Sub-City.

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In Ethiopia SAFE strategy (2002) has been implemented in different region of the country. To adopt better practices, Improvement of the habits of face washing and environmental control among model household as well as the whole community are necessary for sustainable reduction of trachoma in Ethiopia. Therefore, the implementation practice of face washing and environmental control components of SAFE strategy among model and non-model families are important to the reduction of trachoma infection in the country.

Objective: The main objective of the study was to compare face-cleanliness and environmental control components of SAFE strategy among model and non-model households in the study area.

Method: Quantitative study method in the form of community based comparative cross sectional survey was employed. Multi-stage with systematic random sampling technique was used to select households. Amharic version structure interview questionnaire was pretested and used. The data was entered and analyzed using SPSS-version 20.descriptive analysis was done using percentage and presented using table. Binary and multivariate logistic regression was used to detect the potential difference between the groups.

Result: The magnitude of proper face washing among model households was 36.4%, but 26.2% among the non-model group [AOR, 95 % CI =0.569: (0.4, 0.81]. Model households were about three times more likely to practice face washing per day compared to non-model ones [AOR, 95% CI =2.902: (2.04, 4.155)]. Eight two percent of the model households used proper solid waste container while, 64.9% in the non-model [AOR, 95%CI =2.25 :(1.75, 3.65)]. Models were about two times more likely to using functional soaking pit compared to non-model households [AOR, 95% CI =1.659 (1.22-2.234)]. Model households were four times more likely to participate in keeping the cleanness of the compound compare to the non-models [AOR, 95%CI =4.455, (2.26 ,8.775)]; and also two times more likely to possess separate kitchen outside the living room [AOR, 95% CI =2.26 (1.62, 2.99)].

Conclusion: Model households were better in face washing and environmental improvement components of SAFE strategy compared to the non-model households, and hence, the strategy of making model households has to be expanded to those who are non-model households.

Key words: Model household, Non-model household, "F" and "E" component of SAFE.

Latrine Access and Utilization among People with Limited Mobility in Bahir Dar City, northwest Ethiopia: A cross sectional study.

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Background: Latrine access is one of the challenges faced by people with physical disabilities that limit their mobility (PPDs) in their home and working environments. Latrines should be designed, built and located such that they are easily accessible and utilizable by PPDs. Therefore, the aim of this study was to determine latrine access and utilization, and explore the challenges in latrine use among PPDs in Bahir Dar city, northwest Ethiopia.

Methods: A cross-sectional study design was conducted from July 15 to August 15, 2014. Data were collected using a structured and pre-tested questionnaire, and focus group discussions. Four hundred nineteen participants were included using a systematic random sampling technique. SPSS version 20 was used for data entry and analysis. Binary logistic regression was used to identify factors associated with latrine utilization. Qualitative data were analyzed using themes.

Results: Of 419 participants, 142 (33.9%) had access to latrines and 173 (41.3%) had satisfactory latrine utilization. Family support while using latrine (AOR=4.7, 95% CI (2.7, 8.3), latrine accessibility (AOR=2.1, 95% CI (1.2, 3.7) and past latrine modification (AOR=3.1, 95% CI (1.8, 5.4) were factors associated with latrine utilization. Presence of steps at the latrine entrance, privacy while using latrine, absence of handrails, unavailability of family support, narrower latrine door, distant latrine, unclean floor of the latrine and elevated foot rests were challenges mentioned by PPDs.

Conclusions: Latrine access and utilization were low among PPDs. Family members should encourage and support PPDs when they need to use latrine, designing accessible latrines, modifying existing latrines to accommodate PPDs are the areas of interventions to increase latrine accessibility and utilization among PPDs.

Keywords: Latrine access, Latrine utilization, People with limited mobility, Disability.

Prevalence and Associated Factors of Occupational Injury among Workers in Arba Minch Textile Factory: A Cross Sectional Study. *Gebrekiros Gebremichael*, *MPH, Arba Minch University; Abera Kumie, PhD, School of Public Health, Addis Ababa University.*

Background: Occupational accidents and work-related diseases cause over 2.3 million deaths annually; nearly 860,000 people are injured every day globally. There are limited studies specifically determining the magnitude and factors of occupational injury in textile workers in Ethiopia. Therefore, this study aimed to assess the prevalence and associated factors of occupational injury in Arba Minch Textile Factory workers.

Methods: An institution based cross-sectional study design was implemented from March 3 to March 20, 2015 among Arba Minch Textile Factory workers. Since the total eligible number of workers was not much different from the calculated sample size (394), all eligible workers (441) were included in the study.

An Amharic version pre-tested questionnaire and observation checklist were used to collect the data using trained data collectors and supervisors. Data was entered into Epi Info version 7 template, cleaned and analyzed using SPSS Version 21 software. Descriptive statistical methods such as frequencies, percentages, mean and standard deviation were used to summarize the characteristics of the workers. Bivariate logistic regression was used to explore the relation between the dependent and independent variables using crude odds ratio with 95% C.I. Finally, to determine the independent factors associated with occupational injury, multivariate logistic regression model with hierarchical entry of variables was done. Variables with P-value <0.05 in the final model were considered statistically significant.

Results: The one-year prevalence of occupational injury was 31.4%. Lower salary was associated with higher odds of injury among the socio-demographic factors [AOR (95%C.I): 3.5(1.7, 7.2)]. Work environment related factors like extra hour duty, health and safety training and workplace supervision had significant association after adjusting all factors [AOR (95%C.I): 2.5 (1.2, 5.4), 0.4 (0.17, 0.97), and 0.36 (0.17, 0.75) respectively]. Among the behavioral factors, Personal Protective Equipments use and job stress showed association with injury significantly.

Conclusion: The significant prevalence and associated factors of occupational injury in the factory workers should alert the factory and organizations working on Occupational Health and Safety.

Abs 95

Awareness and Practices of Hygiene among 5 – 10th Grade Students in Diredawa Administration, Ethiopia.

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Introduction: Proper personal hygiene can be culture specific and may change over time. It is influenced by social, familial and individual factors as well as the children's knowledge of personal hygiene, comfort and basic needs. Poor knowledge, attitude and practice of personal hygiene, such as hand washing, tooth brushing, poor menstrual hygiene has negative consequences for an individual long term overall development. Good personal hygiene practice such as good hand washing practice brushing teeth at least twice, proper menstrual hygiene practices are therefore a prerequisite to a student survival.

Objective: To assess awareness level and practices of the students on personal hygiene and its determinant factors among 5-10th grade from June 1- July 15, 2015.

Method: Cross-sectional study design was conducted. Quantitative supplemented with qualitative data collection method was used to interview a total of 818 students and to undergo 8 FGD for qualitative study (4 on personal hygiene comprising both male and female and 4 FGD on menstrual hygiene among female students). Stratified multistage sampling techniques was used to select participants. In First stage school were stratified by school level (2nd cycle primary and high school) and then by ownership as (Public/Private) then six government and four private schools were randomly selected. In the second stage, a stratified sampling technique (proportionate allocation sampling) were used to select students from each grade and section level. And finally simple random sampling technique is used to select the student from their section. Data was double entered and cleaned using EpiData version 3.3, and was analyzed by using SPSS version 21.

Result: of the total participants nearly one fifth (21.1%) of the students' father and one fourth (26.5%) of the students' mothers are Un-Educated, and almost 2 out of 3 (68.5%) of the students' families are categorized as middle income families. Almost all (90 %) of the students house hold used Pipe water as sources of drinking water, 84.2 % of the respondents are Urban residents and from these 78.2% are attending their school in Public schools and the rest are private school students. Nearly 2 out of 3 (58.9%) students have good knowledge on personal hygiene. Increasing age (AOR 1.457, CI 1.007 – 2.106) Sex being Female (AOR 1.783, CI 1.332 – 2.387), increasing Grade level (AOR 1.149, CI 1.024 – 1.289) family Income status being Higher (AOR 1.665, CI 1.061 – 2.613), School ownership being Private (AOR 2.211, CI 1.455 – 3.360) are

significantly associated to having Good level of knowledge of students. Nearly half (55.1%) of the students have Good Attitude on personal hygiene. Increasing in age (AOR 1.563 CI 1.067 – 2.245), is positively statistically associated to develop positive attitude whereas Father's level of education being graduated (AOR 0.879, CI 0.772 – 0.999) is negatively associated with developing positive personal hygiene attitude. Almost 2 out of 3 (60%) of the students have good practice on personal hygiene. Father's level of education being higher (AOR 1.187 CI 1.038 – 1.358), place of residence being urban (AOR 2.542, CI 1.483 – 4.356), and School Owner being private (AOR 1.533, CI 1.009 – 2.330) are positively significantly associated with practice. Knowledge has positive effect on Attitude and practice (56% of students who have good knowledge have Positive attitude, 66.4 % of the students who has good knowledge on personal hygiene has good practice).

Conclusion and Recommendation: knowledge, attitude and practice of Dire-dawa administration students were good compared to similar studies. Age, Sex, Grade, family Income, School ownership are statistically significantly associated to level of knowledge of students. Age, Father's level of education are associated to Attitude of students whereas; Father's educational status school location are statistically associated with personal hygiene practice. There is therefore a need for parents and teachers as agents of health promotion to preserve the values of personal hygiene in school children. So we recommend school curriculum developers to include personal and menstrual hygiene topics in the students' teaching course materials, school administrators to establish personal hygiene club and strengthen and enrich the girls' club; the dire dawa health bureau to create awareness for the student's family especially those for mothers as the sources of information for menstrual hygiene for majority of school girls are their mother.

Abs 96

Latrine Utilization and Associated Factors among Households in Melo Koza District, Southern Ethiopia: A Comparative Cross-Sectional Study.

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The objective of this study was to assess latrine utilization and associated factors among open defecation free and non-open defecation free households in Melo Koza district, Southern Ethiopia. Data were collected and entered in to Epi-Info 3.5.1 and analysis was done using SPSS version 20. Bivariate and multivariate logistic regressions were performed calculating odds ratio with 95% confidence interval to identify the associated factors for latrine utilization. The study revealed the overall latrine utilization in the District as 74.5%. Residence of households [AOR: 6.88: 95%CI :(3.25, 14.59)] significantly associated with latrine utilization in the district. Households constructed latrines ≥2times [AOR: 2.32; 95%CI: (1.15, 4.69)], latrine with door(s) [AOR: 2.72; 95%CI: (1.10, 6.90)] and presence of functional radio [AOR: 2.10; 95%CI: (1.03, 4.13)] were significantly associated with latrine utilization among non-open defecation free households. Improved slab of latrine [AOR: 5.55; 95%CI: (1.24, 25.01)], latrine construction initiated by health professionals [AOR: 3.56; 95%CI (1.04, 12.21)] and home visit by health professionals [AOR: 4.28; 95%CI: (1.02, 18.07)] were independent predictors of latrine utilization among open defecation free households. In Conclusion, the overall latrine utilization in the District was greater than the findings in other parts of Ethiopia. The latrine utilization was associated with residence of households, duration of latrine, frequency of latrine construction, latrine status, cleanliness, slab of latrine and owning radio. Thus, the health sector of district should strength health education programme encouraging households to construct latrine incorporating essential components such as: improved slab, superstructure, maintain latrine, keep latrine hygienic and home visit which are supremely important in improving latrine utilization of households in the district.

Abs 97

Impact of Water, Sanitation, and Hygiene Interventions on Trachoma among School Children in Sidama Zone: A Comparative Study.

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A number of studies on trachoma conducted in Ethiopia revealed that the magnitude of the problem is till high though efforts are being made to tackle the problem with the main stakeholder being the Ministry of Health with the support of various NGOs. Therefore the current study aims to determine the magnitude of trachoma among school children and evaluate the effectiveness of the WASH intervention activities targeted at reducing trachoma prevalence.

This cross-sectional comparative study was conducted in June 2014 on 710 school children found in the technology Village of Hawassa University in Rural Sidama Zone. Two schools from ODF Kebeles and other two schools from non ODF kebeles were selected randomly from the list of schools for the study. Both male and female students were selected by systematic random sampling technique based on proportional to size in each school. The various stages of trachoma was examined by well oriented and qualified ophthalmic professionals and results was recorded in a checklist. Pre-examination interview and observation of the school WASH status was made by trained Environmental Health officers through the help of checklist. Data was entered and analyzed by help of SPSS software. Ethical clearance was obtained from the Institutional Review Board of Hawassa University Health Science College.

The overall prevalence of trachoma in the study area was 17.5%. Among the infected students, the majority (57.7%) was diagnosed to have at the stage of Trachomatous Inflammation – Follicular (TF), followed by Trachomatous Inflammation – Intense (TI) (30.1), and the remaining being Trachomatous Scarring (TS) (12.2%). The total number of students infected with trachoma in the ODF villages (schools) was greater (67.5%) than their non-ODF counterparts. The data indicated that the school children in the ODF schools were 2.5 times more likely to have the trachoma infection than their non-ODF participants. Being female was 1.63 times to have the infection that being male (AOR, 1.631; 95% CI, (1.009-2.638)). Having ocular discharge, nasal discharge, and fly on the face of the students were the risk factors for trachoma. However, poor finger and cloth cleanliness was observed to be protective against trachoma.

The study indicated that the sanitation intervention did not help in improving the trachoma infection condition of the school children. Effective prevention programs should integrate education about proper latrine use and promote equal utilization of latrines among both genders and all age groups in order to preserve the protective nature of latrines. Campaigns focusing on introducing educational intervention programs in women's organizations, schools, and communities could help bring behavioural changes among school children, which are the change agents, and lower the burden of trachoma in the study area.

Food and Nutrition

Abs 98

Weight Gain during Pregnancy and Associated Factors in Harari Regional State, Eastern Ethiopia.

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Background: Weight gain during pregnancy is an important factor that supports optimal outcome for the mother and for the infant. Women who do not gain enough weight during pregnancy have a risk of low birth weights, while women who gain too much weight have a higher risk of preeclampsia and gestational diabetes. However, gestational weight gain status is not well studied in our setup. Therefore, the aim of this study was to assess weight gain during pregnancy and associated factors in health facilities of Harari Regional State, 2014.

Method: Health facility based quantitative cross-sectional study was used. A total of 418 mothers who gave birth at health institutions were studied. Primary and secondary data were collected by using a structured questionnaire and checklist. Logistic regression was used to assess factors associated with gestational weight gain. Gestational weight gains are categorized as below, within, and above recommendation according to United State Institute of Medicine criteria.

Result: About, 69.3%, 28%, and 2.7% of women gained gestational weight below, within, and above recommendation, respectively. The mean gestational weight gain was 8.96 (SD ±3.27) kg. Being overweight and obese at early pregnancy (AOR=3.2, 95% CI 1.6, 6.3), engaging in physical activities (AOR=1.9, 95% CI 1.1, 3), Consuming fruit and vegetable (AOR=2.7,95% CI 1.2,7), meat consumption (AOR=5.2, 95% CI 2.7, 9.9), having >$100 monthly income (AOR=2.7, 95% CI 1.1, 7.2), and having ANC visit ≥4 times (AOR=2.9,95% CI 1.7,5.1), were associated with recommended gestational weight gain.

Conclusion: In this study, a high proportion of women gained gestational weight below recommendation. Bing overweight and obese at early-pregnancy, having good income (>$100), ANC visit ≥ 4 times, fruit, vegetables and meat consumption, and engaging in physical activities increases the likelihood of gestational weight gain. Childbearing age women should be informed about the importance of conceiving at a normal BMI, dietary intake and physical activity during pregnancy, and having a healthy gestational weight gain.

Keywords: Gestational weight gain, early pregnancy BMI,   Recommended GWG

Abs 99

Dietary Diversity and Associated Factors among Pregnant Women in Addis Ababa, Ethiopia.

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Background: A pregnant woman requires a varied diet to meet her nutritional requirements and thus improve her nutritional status. Women in developing countries maintain pregnancy on dietary intakes lower than those recommended by international agencies. The high nutrient demands of pregnancy put women of reproductive age in developing countries at high risk because consumption of low-quality, monotonous diets is common in these countries and thus these women risk a variety of micronutrient deficiencies.

Objective: To determine dietary diversity and factors associated with dietary diversity among pregnant women in Addis Ababa.

Method: A cross-sectional study was conducted on 750 pregnant women in Addis Ababa from November 2014 to April 2015. Simple random sampling technique used to select one target health center from each sub city and the sample was divided into ten sub cities according to population of pregnant women size. The data entry and analysis was performed by epi info3.5.3 and SPSS version 20.0.1 respectively. Association between predictor variable and dependent variable was computed using logistic regression analysis at 0.05 level of significance and odd ratio with 95% CI to measure strength of association.

Results: The mean dietary diversity of pregnant women was 3.8. Most of the respondents had low dietary diversity which was 61.7 percent of the respondents and 29.6% medium dietary diversity score based on the FAO categorization. The study indicated that dietary diversity of pregnant women was associated with pregnant women's age ($P<0.001$), educational status ($p<0.05$), number of ANC visit ($p<0.001$), monthly house hold income <1000 ($p<0.05$) and severely household food insecure ($P<0.05$).

Conclusion: This study indicated that dietary diversity among pregnant women was poor as majority 61.7% had low dietary diversity score. Therefore, there is need to create awareness in the community on the use of diversified diet especially for pregnant and reproductive age women. The dietary diversity of the women needs to be improved in order to ensure dietary quality and reduce consequences of poor dietary diversity.

Prevalence and Associated Factors of Overweight and Obesity among Adult Gondar Town Residents, North West Ethiopia.

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Background: During the last few decades the prevalence of overweight and obesity has been growing at an alarming rate in both the developed and the developing countries at all age level. However few studies were conducted so far on adults in Gondar town

Objectives: The main purpose of this study is to assess the prevalence of overweight or obesity and abdominal obesity and to identify associated factors among adults 18 years and older in Gondar town, North West Ethiopia.

Methods: Community based cross-sectional study conducted from March 18 up to March 27, 2014 in Gondar town on 968 study participant. Data gathered using WHO STEP wise instrument using multistage sampling method. Anthropometric measurements such as height, weight and west circumferences measured from study participant using international standard of anthropometric assessment guideline. The prevalence of overweight or obesity and abdominal obesity were assessed using WHO cut off points. Bivariate and multivariate logistic regression models were fitted to see the association between the response and predictor variables and p-value less than 0.05 used as cut point for statically significance.

Result: The prevalence of overweight or obesity in the study population was 17.56% [95%CI: 15.56, 19.96]. In men 12.69% [95%CI: 9.36, 16.02] and in women 20.79% [95%CI: 17.49, 24.09]. The prevalence of abdominal obesity in the study population was 36.36% [95%CI: 33.33, 39.40].The prevalence of abdominal obesity was 8.55% [95%CI: 5.75, 11.35] in men and 54.81% [95%CI: 50.76, 58.86] in women.
The factors associated with overweight or obesity were sex, age, number of children, wealth index, and eating while watching television. Variables sex, age, wealth index, walking or bicycling were significantly associated with abdominal obesity.

Conclusion: The prevalence of overweight or obesity among adult Gondar town residents was high as compared to Ethiopian Demographic and Health Survey reports. The proportion of abdominal obesity in the town was also high. Prevention strategies should be formulated to increase physical activity level and improve dietary habit of the community.

Cognitive Function, School Performance and Association with Nutritional Status among School Children at Soddo Town and Soddo Zuriya Woreda, Wolaita Zone, Southern Ethiopia: A Comparative Study.

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Background: About one billion stunted school age children are growing up with impaired mental development which can lead to low cognitive performance, reduced school achievement & low productivity. But there are scarce evidences on cognitive function, school performance and their associated factors among school age children. Therefore this study aimed to assess and compare cognitive function and school performance, and determine their association with nutritional status among school children at Soddo Town and Zuriya Woreda, Wolaita Zone, Southern Ethiopia.

Method: School-based comparative cross-sectional study was conducted on a total sample of 178 primary school children during February to April, 2014. Sample was assigned to each school by using proportional to size allocation and students from each school were randomly selected. Socioeconomic characteristics, dietary patterns, and anthropometrics were measured. The Raven's colored progressive matrices (RCPM) and selected tests from Kaufman assessment battery for children second edition (KABC-II) were used to assess cognitive function of children. Midyear average examination result of study subjects was used to estimate school performance of children. Data were analyzed by using SPSS for window 16 and WHO Anthro plus. Independent sample t-test was used to compare cognitive function and school performance of urban and rural study participants. Bivariate and multivariate linear regression analyses were used to identify predictors of cognitive function and school performance.

Result: The mean (±SD) cognitive test scores of urban study participants was 18.7±3.4 for RCPM which was higher (P<0.001) as compared to rural which was 16.5±3.3. The mean cognitive test scores of urban study participants was also higher for pattern reasoning (p<0.001) and visual processing (p<0.001) as compared to rural counterparts. School performance was also higher (p<0.001) for urban study participants. Wealth index (p<0.006), HAZ score (p<0.001) and maternal education (P<0.002) were significantly predicted cognitive function test scores and school performance of study participants.

Conclusion: Cognitive function and school performance of study participants were associated with their nutritional status and rural participants had significantly lower mean scores on cognitive tests and school performance as compared to urban counterparts. Further study should be done at the community level to confirm the real differences and to generalize findings to the larger population.

Keywords: Cognitive Function; School Performance; School children; Urban, Rural

Adequately Iodized Salt Availability at the Household Level and Factors Affecting it, Wolaita Zone, SNNPR, Ethiopia 2014: A Cross-sectional Study.

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Objectives: The objective of the current study was to assess availability of adequately iodized salt at household level and associated factors in Wolaita Sodo Town and Sodo Zuria Woreda, 2014

Methods: A cross-sectional survey of quantitative research methods was used to address the study objectives. The study was conducted from May 10-20, 2014 in Wolaita Sodo Town and Sodo Zuria Kebeles. The source population consists of people residing in selected administrative areas of the Zone and selected using systematic sampling technique. Iodometric titration test was done. The final sample size was **544** households. Data entry and analysis was done using Epi info version 5.3.1 and SPSS 16. Associations between dependent and independent variables was assessed and presented using odds ratios and 95% confidence intervals.

Result: Result: Of 544 participants 535(98%) of them were studied. Among 440 (82%) respondents provided salt samples only 37.7% (95% CI: 33%-42%) of studied households were using adequately iodized salt (≥15 parts per million (ppm)). Knowledge about iodine deficiency was 239 (44.7%) and 166 (31.0%) participants cited iodized salt consumption for its prevention. Most of, 346 (64.7%) participants had heard about goiter while only 170 (31.8%) of them associated it with iodine deficiency. About 46.4% of respondents heard about iodized salt however only 23% intended to buy. Factors strongly associated with adequately iodized salt consumption were monthly income, adjusted odds ratio (AOR) =6.02 (2.81-12.87); good knowledge, AOR = 5.60 (3.25-9.67); good practice, AOR=2.89(1.76-4.72) of respondents.

Conclusion: The current study identified low levels of households were consuming adequately iodized salt**.** Respondents' monthly income, education and not exposing salt to sun light were determinant factors in adequately iodized salt consumption. We recommend that all concerned bodies should work on changing the community awareness and practices in buying and properly utilizing iodized salt.

Keywords: adequate iodized salt, salt availability, factors, Wolaita

The Role of Women Empowerment on Stunting among Under Five Children in Gambella Town, South West Ethiopia, 2015.

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Background: Worldwide, more than 3 million preventable child deaths annually are attributed to child under nutrition. Four-fifths of the world's undernourished children are living in just 20 countries, mainly South Asia and sub-Saharan Africa. In addition to about 16.5% of annual GDP loss, child under nutrition in Ethiopia is responsible for 51% of deaths of under-five children. Women's empowerment status has greater determining power of child nutritional status.

Objective: To assess the role of women empowerment on stunting among under-five children in Gambella town, Southwest Ethiopia.

Methods: A community based cross-sectional study was deployed and data was collected by trained interviewer. The height-for-age index was compared with new WHO standard. Data was entered into Epi-info version 3.5.4 and SPSS version 16.0 for analysis. Bivariate and multivariate logistic regression was fitted to identify the association between factors and stunting. Significance was obtained at adjusted odds ratio with 95% CI and $p < 0.05$. The questionnaire was pre-tested and confidentiality was maintained throughout the study.

Result: A total of 358 women were responded giving a response rate of 95%. The mean age of the participants was 26.5 (std.± 4.9). More than half, 180(52.9%), were housewives whereas only 131 (38.5%) were employed. The overall prevalence of stunting among under-five children was 25.3%. Child's age [AOR=6.78, 95%CI: 1.96-23.44], decision on mother's income [AOR=1.96, 95%CI: 1.06-3.62], decision on daily purchase [AOR=2.49, 95%CI: 1.16-5.36], decision on family visit [AOR=3.47, 95%CI: 1.42-8.45]and wife beating justification [AOR=3.16, 95%CI: 1.69-5.90] were independently and significantly associated with under-five stunting.

Conclusion and Recommendation: The result showed that women empowerment is the important determinant factor of stunting.

Chronic Under nutrition and Associated Factors among School Age Children in Aman Sub Town, South West Ethiopia, 2015.

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Background: under nutrition remains to be a primary cause of morbidity and mortality among children in developing countries. School-age children are among the most commonly affected groups by chronic under nutrition. In Ethiopia, little is known about the magnitude of under nutrition in these older children, studies conducted in Addis Ababa indicated 31% of school age children were undernourished. Therefore, the aim of this study was to determine the magnitude of chronic under nutrition and identify the major factors associated with it that will guide a good intervention approach to halt the problem.

Methodology: a school based cross-sectional study was conducted on a total of 376 school children at Aman Sub town, south-west Ethiopia. Simple random sampling technique was applied to select schools and participants. Structured and pretested questionnaire was used to assess Socio-demographic and other variables. Anthropometric measurements were taken by trained clinical nurses using standard procedures. All anthropometric data were converted into nutritional indices using the WHO Anthro software version 3.2.2 and exported to SPSS version 21 for further cleaning and analysis. Binary logistic regression were applied to identify possible predictors for stunting and underweight independently.

Results: around two-fifth (40.2%) and almost one-third (28.2%) of children were stunted and underweight respectively. Older age groups (10-14), boys, having illiterate and employed mothers, maternal age of < 20 years during birth, lower monthly income (<50USD), large family size (>8) and rural resident were associated with an increase in the odds of stunting. Likewise, occupation of the mother, meal frequency, family size, monthly income and presence of chronic diseases were significantly associated with underweight in children.

Conclusion and Recommendation: chronic under nutrition in the form of stunting and underweight is prevalent among school age children living in Aman sub town. Therefore, improving school feeding programme and provisions of health education regarding child nutrition should be considered in the study area.

Keywords: *Chronic, Under nutrition, Factors, School age, Children, Ethiopia*

Predictors of Nutritional Status of Ethiopian Adolescents Girls: A Community Based Cross Sectional Study.

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Malnutrition is a major health issue affecting children, women and adolescents globally and developing countries in particular. Adolescence is a time of enormous physiological, cognitive, and psychosocial change but it remains a neglected, difficult-to-measure and hard-to-reach population. The critical role of adolescent nutrition in the intergenerational cycle of Growth failure has not been well addressed in Ethiopia. Hence, this study assesses level of low BMI-for- age and height-for- age and their associated factors among adolescent girls in northwest Ethiopia.

Community based cross-sectional quantitative study was employed. A total of 1281 adolescent girls were included in the study. Multistage cluster sampling method was used. Pretested questionnaire were used to collect the data. The collected data were entered in to Epi Info version 3.5.3 and exported to SPSS version 20.0 software packages for further statistical analysis. The data were analyzed using bivariate and multivariate logistic regression. The degree of association between dependent and independent variables were assessed using odds ratio with 95 % confidence interval and variables with p value ≤0.05 were considered significant.

The prevalence of girls with BMI-for-age Z-score < –2 were 13.6 % and height-for-age Z-score < –2 were 31.5 %. Being in the age group 10–14 years (AOR = 5.83, 95 % CI: 3.26, 10.44), being in the age group 15–17 years (AOR = 2.06, 95 % CI: 1.09, 3.89), with poor dietary diversity score (AOR = 2.48, 95 % CI: 1.60, 3.84), utilizing community based nutrition service (AOR = 0.67, 95 % CI: 0.47, 0.95) were factors significantly associated with thinness in adolescent girls. Being on the age group 10–14 years (AOR = 6.07, 95 % CI: 4.00,9.22), being on the age group 15–17(AOR = 1.39, 95 % CI: 1.93, 2.09), had nutrition and health information(AOR = 1.94, 95 % CI: 1.46, 2.57), living in food secured households (AOR:0.65, 95 % CI: 0.50, 0.84) were factors affecting low height-for-age in study subjects.

Finding of this study indicated that prevalence of adolescents with low BMI-for-age and low height-for-age Z-score < –2 were high. Age, dietary diversity score and community based nutrition service utilization were factors affecting low BMI-for-Age in adolescent girls. Age, food insecurity and Nutrition and health information were factors affecting low height-for- age in adolescent girls. Improving community based nutrition service utilization, food security especially in young adolescents is highly recommended.

Keywords: Adolescent girls, Prevalence, BMI-for-age, Height-for-age, Northwest Ethiopia.

Malnutrition and Associated Factors among Adult Individuals Receiving Highly Active Antiretroviral Therapy in Health Facilities of Hosanna Town, Southern Ethiopia.

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Background: In resource limited settings, many human immunodeficiency virus (HIV) infected individuals lack access to sufficient quantities of nutritious foods, which poses additional challenges to the success of anti-retroviral therapy (ART). Morbidity and mortality related to human immunodeficiency virus infection in the developing world remain unacceptably high, despite major advances in human immunodeficiency virus therapy and increased international funding for care.

Objective: To determine magnitude of malnutrition and identify factors associated with it among adult people on highly active anti-retroviral therapy (HAART) in health facility of Hosanna town.

Methods: Institutional based cross-sectional survey was conducted from March 20 to April30, 2014 on 330 adult people on anti-retroviral therapy in health facility of Hosanna town. Sample clients were selected by simple random sampling technique. Data were collected by face to face interview using structured pretested questionnaire, record review using check list and anthropometric measurements. Bi-variate analysis and multivariable logistic regression models were done using SPSS version 16 to identify factors associated with malnutrition.

Results: Overall, the prevalence of malnutrition in this study was 31.2 %.Household food insecurity (AOR= 2.51, 95% CI: 1.31- 4.81), inadequate diversified diet(AOR= 0.44, 95% CI: 0.23-0.84),low meal frequency(AOR= 0.29, 95% CI: 0.11- 0.76), clinical staging four (AOR= 5.23, 95% CI: 1.42- 19.35), clinical staging three(AOR=3.91, 95% CI: 1.57, 9.73), presence of opportunistic infections(AOR= 2.62, 95% CI: 1.49- 4.59) and getting nutritional support(AOR= 0.45, 95% CI: 0.23- 0.89) were independent predictors of malnutrition.

Conclusion: Malnutrition was high in adult people on anti-retroviral therapy at Anti-Retroviral Therapy clinics of Hossana town. Only Anti-Retroviral Therapy is not enough to improve the health status of people on highly active anti-retroviral therapy (HAART). Further, interventional initiatives should focus in improving household food security, diversity of diet, meal frequency, clinical staging and prevention and control of opportunistic infections in adult HIV infected individuals receiving highly active anti-retroviral therapy.

Keywords: Anti-retroviral therapy, Human immune deficiency virus, Malnutrition

Relation between Nutritional Status and Mental Development of Children between 12-60 Months of Age in Wolaita Zone SNNPR, Ethiopia.

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Introduction: Malnutrition remains one of the most common causes of morbidity and mortality among children throughout the world particularly in developing countries and it is endemic in Ethiopia. It affects the both cognitive and physical development of children.

Objective: this study was aimed to assess mental development of children in relation to their nutritional status in Wolaita zone SNPPR, Ethiopia from April to May, 2015.

Methods: Community based cross sectional study design was conducted. A sample of 623 children was selected by using systematic sampling technique. Data were collected with pretested and interviewer administered structure questionnaire. Age and stage questionnaire version 3 was used to assess child mental development. Height, weight and MUAC was measured by trained data collector. Data was entered into Epi – info version 3.3.5 and was transported and analyzed using SPSS version 21. Anthropometric data was analyzed by WHO antro version 3.2.2. Data was presented by using descriptive statistics and correlation.

Result: Totally 605 were interviewed, makes the response rate was 96.8%. Around 50.7% were males and mean and median age was 33.87 and 34 months respectively with SD of 13.9. Nutritional status of children were stated as underweight, stunting, and wasting (11.9%, 33.9%, and 6.6%,) respectively. The risk of developmental problem in children were 19.0% and it is expressed as communication 5.8%, gross motor 6.1%, fine motor 4.0%, personal social 8.8% and problem solving 4.1% based on Z scores of children. Weight-for-age (WAZ) and height for- age (HAZ) positively correlated with all five domains of development i.e with communication, gross motor, fine motor, personal social and problem solving ($r= 0.0.088 - 0.229$; $p<0.0004$, and $r=0.131-0.249$; $p<0.000$,) respectively.

Conclusion and Recommendation: Inadequate nutritional status and mental development of children are public health concern. Early intervention on under nutrition is very necessary to avoid mental development problem. Further assessment on mental development of children is necessary.

Acute Malnutrition (Wasting) and Associated Factors among Children Aged 6-23 Months in Kemba Community, Southern Ethiopia: A Community Based Cross-Sectional Study.

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Background: Acute malnutrition is a major health problem in developing countries. Wasting (low in weight- for- age of < -2 Z -score) is affecting significant number of children in the world and responsible for loss of many child lives particularly in Asian and sub-Saharan countries. Identifying potential factors and forecasting appropriate intervention strategies plays vital role in declining child mortality.

Objective: To assess Acute Malnutrition (Wasting) and associated factors among Children aged 6-23 Months in Kemba Community, Southern Ethiopia.

Methods: Community based cross-sectional study was carried out among 562 mothers who have young child from 6-23 months in 2014/15 in Kemba Woreda by using pre tested and structured questioners. Multivariate analyses were conducted by SPSS version 20.

Results:-The prevalence of Acute Malnutrition was found to be 21% with 95% CI (17.2-23.9). In multiple logistic regressions, boys[AOR: 1.8; 95% CI(1.17-2.81)], maternal age > 30years [AOR: 2.60; 95% CI(1.07-6.35)], mothers who have no formal education [AOR: 2.76; 95% CI(1.63-4.69)], mothers who work as daily workers [AOR: 3.06; 95% CI(1.03-9.12)] and have Private work activity(merchant, farmers) [AOR: 2.39; 95% CI(1.61-3.53)], mothers who have no antenatal and post natal follow up [AOR: 2.33; 95% CI(1.45-3.74)], [AOR: 1.82; 95%CI(1.02-3.25)] respectively, non-exclusive breastfed children [AOR: 2.18; 95% CI(1.20-3.99)] and media exposure of the mother[AOR: 1.99;95% CI(1.19-3.32)] were identified as significant independent predictors of childhood acute malnutrition. However, medical illness of children and immunization status were not associated with wasting.

Conclusion and Recommendation: A great proportion of children were affected by acute nutritional insult. Significant numbers of factors were found to be having statistical association with wasting. An organized effort should be made at all levels to increase maternal awareness and strengthening on practice of exclusive breastfeeding, proper antenatal and post natal care provision to solve the high level of acute under-nutrition in children.

Keywords: wasting, children, Kemba Community, South Ethiopia.

Nutrition Education and Introduction of Broad Bean-Based Complementary Food Improves Knowledge and Dietary Practices of Caregivers and Nutritional Status of their Young Children in Hula, Ethiopia.

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Background: Nutritious complementary foods are needed in countries where under nutrition and stunting are major problems, but mothers may be reluctant to change from traditional gruels.

Objective: To test whether a recipe-based complementary feeding education intervention would improve knowledge and practice of mothers with young children in Hula, Ethiopia.

Methods: a baseline survey of 200 eligible, randomly selected mother-child pairs gathered data on socio-demographic characteristics, food security status, knowledge and practices concerning complementary feeding, food group intakes of children 6 to 23 months by 24-hour recalls, and children's anthropometric measurements. Twice a month for 6 months, women in intervention group received an education session consisting of eight specific messages using Alive and Thrive posters and a demonstration and tasting of a local barley and maize porridge recipe containing 30% broad beans. The control group lived in a different area and had no intervention.

Results: At 6 months, knowledge and practice scores regarding complementary feeding were significantly improved ($P<0.001$) in the intervention group. The intervention resulted in improvement of children's dietary diversity, as well as mean intake of energy and selected nutrients, compared with children in control group. Changes in height and weight did not differ between the two groups.

Conclusion: Community-based nutrition education over 6 months that included demonstration of a local porridge recipe with broad beans added improved the complementary feeding practices of caregivers and the nutritional status of their young children.

Keywords: Broad bean, complementary foods, Ethiopia, feeding practice, infants and young children, nutrient intake

Factors Associated with Nutritional Status of Human Immunodeficiency Virus Infected Children in Hawassa University Referral Hospital, Hawassa, Southern Ethiopia.

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Background: Nutritional problems and HIV infection are closely interlinked disorders. Immune impairment as a result of HIV infection leads to malnutrition, which in turn, can lead to reduce the immunity. This study aimed to assess nutritional status and associated factors among HIV positive children.

Method: Institution based cross sectional study was conducted on 455 HIV positive children aged 6week to 14 years. Weight and height/length measurements were taken. Data were collected from caretakers using a structured questionnaire and child medical record. Logistic regression analyses were used to determine the factors affecting nutritional status of the children.

Result: In this study, the proportions of stunting, underweight, and wasting were 60.2%, 41.2%, 21.4%, respectively. In 5-10 years children, underweight was associated with advanced HIV clinical stage [AOR=2.33 (1.47, 3.67)], low child meal pattern [AOR=7.49 (2.48, 22.65)], food variety >4 [AOR=0.46 (0.23, 0.95)], low average monthly income of the family [AOR=4.97(2.24, 11.05)] and dietary counseling to the care taker [AOR=0.46 (0.29, 0.75)]. Wasting was significantly associated with presence of acute disease [AOR=1.70 (1.01, 2.86)], dietary counseling to care taker [AOR=0.09 (0.35, 0.23)] and rural residential area [AOR=2.38 (1.01, 5.64)]. Stunting was significantly associated to low average monthly income [AOR=2.56 (1.14, 5.75].

Conclusion: This study has shown the high prevalence of under nutrition among HIV positive children on follow up in Hawassa referral hospital. Hence, attention should be given to nutritional assessment, feeding habit and dietary counseling to the care giver.

Key words; Nutritional status, HIV infected children, Hawassa, Ethiopia.

Determinants of Acute Malnutrition among Children of Age between 6 to 59 Months in Debit District, Afar Regional State, Ethiopia: A Case Control Study.

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Background: In developing countries acute malnutrition continues to be the most important risk factor for illnesses and death especially among young children. In sub-Saharan Africa, nearly 1 in 10 children under the age of five (9 per cent) were acutely malnourished in 2011. Ethiopia is one of the countries with very high burden of acute malnutrition which is among the top ten most affected countries by acute malnutrition including 10 per cent of under five children were acutely malnourished. The objective of this study was to assess the determinants of acute malnutrition among children of age between 6 to 59 months in Dubti district, Afar Regional State Ethiopia.

Methods: A health facility based unmatched case-control study design was conducted. The cases were 140 acutely malnourished children of age between 6 to 59 months and the controls (n=280) were children of age between 6 to 59 months without acute malnutrition. The study was conducted from Jan 20 to Feb 20 /2014 in two health centres and one hospital of Dubti district. A pre-tested structured questionnaire was used to collect data. Bivariate and multivariable logistic regression was used and statistical significance was determined through a 95% confidence level.

Results: Those children aged between 12-23 months were more likely to be acutely malnourished than those with in the category of 24 to 59 months (AOR=10.5, 95% CI = (4.935, 22.343)). Rural residence (AOR=2.42, 95% CI= (1.22, 4.798)), married and in union (AOR=0.366, 95% CI (0.163, 0.823)), paternal illiteracy (AOR= 2.468, 95% CI = (1.321, 4.611)) and household monthly income of less than 1000 birr (AOR=3.981, 95% CI (2.059, 7.698)) were positively associated with acute malnutrition. Regarding child characteristics and feeding practice; those children whose food prepared and served not separately from the family (AOR=2.185, 95% CI= (1.109, 4.304)), taking vitamin A supplementation (AOR=0.52, 95%CI= (0.286, 0.935)) and being first child (AOR=0.059, 95% CI= (0.015, 0.234)) were strongly associated with acute malnutrition. Mothers who were engaged in fetching water from walking a distance of less than or equal to 30 minute (to and from) are less likely to have acutely malnourished child than long distance fetchers.

Conclusion: The finding of this study confirms the association of acute malnutrition with socio economic and feeding practice of the child. As a recommendation improving practice of parents on appropriate feeding practices and creating awareness related to risk factors of acute malnutrition should be strengthened.

Prevalence of Underweight and its Determinant Factors of Under Two Children in a Rural Area of Western Ethiopia.

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Background: Malnutrition in children is one of the most serious public health problem in Ethiopia and the highest in the world. Therefore, the objective of the study was to measure the prevalence of underweight and to study the selected factors associated with underweight among children under two years of age residing in a rural area of Western Ethiopia.

Methods: A community based cross sectional study was employed from March to April 2014. A total of 593 mothers of under two children using a pre-tested, structured, interviewer administered questionnaire consisting of socio-demographic factors, maternal characteristics, feeding practices and anthropometric measurement was used to gather data. WHO Anthro software version 2.02, SPSS software version 20 was used to perform descriptive statistics, bivariate and multivariable logistic regression analyses.

Results: The prevalence of underweight among under two children was 8.9%. The prevalence of underweight among children under the age of one year was 15.1%. Males (9.7%) were more malnourished than females (8.2%). As compared with children in the age group less than six months, the risk of underweight was about 2.6 times higher for children in age groups over one year (AOR=2.62; 95%CI=1.09, 6.33).

Conclusion: The burden of underweight was low and some important determinant factors for underweight were age of child, birth weight, frequency of breastfeeding, health information after delivery and vitamin A-rich fruits/vegetables. Thus, efforts should be made to improve the antenatal care services, emphasis on maternal nutrition and the importance of proper infant and young child feeding practices for reducing malnutrition among under-two children.

Keywords: Children, Determinant factors, Prevalence, Underweight, West Ethiopia.

Abs 113

Assessment of Coverage and Compliance of Iron Supplementation among Pregnant Women and Associated Factors at Robe Town, Bale Zone, Southern East Ethiopia.

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Background: Globally, anemia affected 1.62 billion people (25%) among which 56 million are pregnant women. Anemia, particularly iron deficiency anemia, is the most common hematological disorder during pregnancy and results in women and fetal consequences.

General objective: To assess coverage and compliance with iron supplementations and associated factors among pregnant women at Robe town, Bale zone, Southern East Ethiopia

Specific objectives:

To determine the coverage of iron supplementations among pregnant women

To determine compliance with iron supplementations among pregnant women

To identify factors associated with compliance with iron supplementations among pregnant women.

Methodology: A community based cross sectional study was used among 445 randomly selected pregnant women attending antenatal care at health facility in Robe Town, Bale Zone, Southern East Ethiopia. Community based cross sectional study design was used. Sample size was proportionally allocated to each kebele. Pregnant women were selected using systematic random sampling technique. Pregnant women were interviewed at their home. Data were checked for completeness, consistency and accuracy. Descriptive statistics: frequencies, percentages and measures of central tendency and variation were computed. It was entered and cleaned using SPSS version 20. Percentage along with 95% CI were used to indicate coverage of iron supplementation. Both bivariate and multivariable logistic regression analyses were used to identify factors associated with compliance with iron supplementation. Odds ratios along with 95% CI were estimated to see the strength of association between each independent variable and compliance with iron supplementation. Level of statistical significance was declared at P - value < 0.05. Multi collinearity was tested among all independent variables using correlation matrix (R). The highest collinearity between the independent variables was 0.16 which was in the normal range. The goodness of fit of the final logistic model was tested using Hosmer and Lemshow's test at P value > 0.05.

Results: Out of 445 pregnant women, 53.7% (95% CI= (49.4 - 58.58.4), 45.2% (95% CI= (40.9 - 49.4), 4.3% (95% CI= (2.5 - 6.3) and 2.2% (95% CI = (1.1 - 3.6) of them utilized iron supplements during first, second, third and fourth antenatal care visits respectively. Besides, out of pregnant women who were given iron supplementation, about 46.7% (95% CI = (42.2 -51.5), 33.9% (95% CI = (29 -

37.8), 18.2% (95% CI= (14.4 - 22.2) and 1.1% (95% CI =(0.2 - 2.2) of them received iron supplements for 30 days, 31-60 days, 61-90 days and more than 90 days respectively. The overall compliance rate of iron supplementation during pregnancy was found to be 92.4% (95% CI= (89.9 - 94.6). Literate women (AOR= 4.45, 95% CI= (1.41 - 13.99), high wealth quintile (AOR= 0.18, 95% CI= (0.04-0.68), medium wealth quintile (AOR= 0.33, 95% CI= (0.11 - 0.98), free of charge of iron supplement (AOR= 3.77, 95%CI= 1.33-10.69), not experienced discomfort related to iron supplements intake (AOR= 2.94, 95% CI= (1.17-7.39), had comprehensive knowledge of anemia (AOR= 2.62, 95% CI= (1.02-6.70), good knowledge about iron supplementation (AOR= 3.30, 95% CI= (1.12-9.9.76), had information about importance of iron supplementation during pregnancy (AOR= 2.86, 95% CI= (1.04-7.87) and ever visited by urban health extension workers (AOR= 0.31, 95% CI= (0.12-0.83) were significantly associated with compliance with iron supplementation during pregnancy.

Conclusions: This study demonstrated that the coverage of iron supplementation during pregnancy was low. The compliance rate was found 92.4%.   It also revealed that the most common pregnant women encountered discomfort related to iron supplements intake were gastric burning and headache. The study also identified that being literate women, high and medium wealth quintile, free of charge of iron supplement, not experiencing discomfort related iron supplement intake, having comprehensive knowledge of anemia, good knowledge of iron supplementation, having information about importance of iron supplementation during pregnancy and ever being visited by urban health extension workers were factors significantly associated with compliance with iron supplementation during pregnancy.

Keywords : Coverage, compliance, predictors, iron supplementation, pregnant women, Robe town, Bale zone, Southern East Ethiopia

Prevalence of Vitamin A Deficiency (Night Blindness) and Associated Factors among School Age Children of Fadis Woreda, East Hararghe Zone, Oromia Regional State, Eastern Ethiopia, 2015.

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Background: Vitamin A Deficiency has long been a public health nutritional problem among children across the world, affecting mostly children in Sub-Saharan African countries including Ethiopia. Therefore, this study was aimed to assess prevalence of vitamin A deficiency (Night Blindness) and associated factors among primary School children in Fadis woreda, Oromia national regional state, Eastern Ethiopia, 2015.

Methods: A cross-sectional study was conducted on randomly selected 738 children of age 6-12 years. Data were collected using interview based questionnaire and physical examination for night blindness and anemia. The data were entered to Epi data version 3.1.and exported to SPSS version 20 for analysis. Bivariate analysis and Multivariate analysis were performed odd ratio along with 95% CI was estimated to identify factors associated with night blindness. Level of statistically significance was declared at p-value less than 0.05.

Results: The prevalence of night blindness was 14.2% [95%CI(11.85%-16.89%)] .Children's of households whose land size less than 0.25 hectares were 4.20 times more likely to be affected by night blindness than households with greater than 0.5 hectare [**AOR= 4.20; 95% CI (1.44-12.24)**] , Households who produce cash crop were 7.89 times affected by night blindness than those who do not produce cash crop [**AOR=7.89; 95% CI, (2.6-23.75),**]. In this study, the odds of night blindness among the children who reside in lowland climatic zone is 2.06(times higher when compared with those living in highland climatic zone [**AOR=2.06, 95% CI (1.27-3.35)**]. The children whose household is headed by mother have 3.78 times higher odds of having night blindness when compared with the household headed by father, [**AOR=3.78, 95%CI (1.10-12.96)**].

Conclusion: In general, the prevalence of night blindness was very high in this study. House hold land size, house hold crop production, head of household and climatic zone were factors associated with night blindness. Therefore, Awareness creation to the community and give emphasis on Vitamin A rich food consumption for prevention of vitamin A deficiency was highly recommended.

Keywords: **prevalence,** Vitamin A deficiency, Night blindness, school age children, Eastern Ethiopia.

Adherence to Iron/Folic Acid Supplement and Associated Factors among ANC and PNC Attendant Mothers in Governmental Health Centers in Akaki Kality Sub City, Addis Ababa, Ethiopia.

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Background-Iron deficiency during pregnancy is a risk factor for anemia, preterm delivery, and low birth weight that contribute to poor neonatal health and increased maternal mortality. Iron/Folate supplementation with optimal adherence can effectively control and prevent anemia in pregnancy. However, studies on adherence are very limited.

Objective: to assess adherence to Iron/Folate supplement during pregnancy and its associated factors among mothers attending ANC and PNC follow up in Akakikality sub city.

Methods: Institutional based cross sectional study was conducted on samples of 557 pregnant women. Systematic random sampling was used to select study subjects. Data were collected using interview-administered questioner. It was cleaned and entered into Epi Info 3.5.1 and analyzed by SPSS version 20. Multiple logistic regression model was fitted to identify factors associated with adherence. Adjusted Odds ratio with 95% CI was computed to assess the strength of association and level of significance.

Result: Adherence, which was considered as taking of Iron/Folate supplements for four or more times a week, was found to be 60.1% (95%CI, 56% - 64.1%). The odds of adherence was 3.64 (AOR: 3.64, 95%CI (1.09-12.09) times higher if mother's age category was 25-29, 4.14 (AOR: 4.14, 95% CI, (1.39-16.53) times higher if mother's age category was 30-34 and it was 8.69 (AOR: 8.69, 95% (2.07-36.49) times higher if mother's age category was 34-39. The odd of adherence was also 0.08 (AOR: 0.08, 95%CI, (0.04-0.16) times lower among mothers reported as they had less side effect.

Conclusion-Adherence to Iron folic acid supplement among mothers attending ANC was found to be high. Older age and women who encountered less side effects adhered more to the supplement. Interventions that encompass the above factors were highly recommended to enhance adherence level of the mothers.

Keywords: Cross sectional study, Adherence to Iron Folate supplement, Pregnant women

Effect of Community Based Management of Acute Malnutrition Integrated Nutrition Education on Infant and Young Child Feeding Knowledge and Practice of Mothers or Caregivers.

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Background: Adequate nutrition during infancy and early childhood is fundamental to the growth, health and development of each child to full human potential. Severe acute malnutrition (SAM) affects approximately 20 million children under five years of age, contributes to more than one million child deaths worldwide each year and being treated with community based management of acute malnutrition (CMAM) program. So that this study aimed of assessing the effect of CMAM integrated nutrition education on infant and young child feeding (IYCF) knowledge and practice of mothers/caregivers in Dilla Zuria Wereda, Southern Ethiopia.

Method: A quasi experimental study design was employed on a total of 100 mother/caregiver and acutely malnourished child pairs enrolled in outpatient treatment program (OTP) of CMAM. A nutrition education intervention comprising 8 specific messages held every 15th day for six continuous months. Pre-tested semi-structured questionnaire was used to collect three phase (Baseline, Follow-up and End-line) data. Collected data entered to SPSS and descriptive statistics was computed. Paired t-test and independent sample t-test were used to check within and between group change on mean knowledge and practice score of mothers/caregivers.

Result: At the end of the intervention period mean knowledge score of mothers/caregivers was statistically significantly (p-value<0.001) improved within intervention group and became different (p-value<0.001) between intervention and control group. At baseline (p-value=0.42) and follow-up (p-value=0.44) between groups mean practice score of mothers/caregivers was not statistically significantly different. Between group mean practice score comparison come up with statistically significant (p-value<0.001) difference. By the end of the study within group comparison for mean practice score showed significant difference both for intervention and control.

Conclusion: IYCF focused nutrition education improved knowledge and practice of mothers/caregivers of children on medical and nutrition treatment. Further study can be done with large sample size, longer intervention period and more strong design to check consistency of result. Since mothers'/caregivers' knowledge and practice of IYCF is crucial to sustain positive clinical outcomes of OTP management of acute malnutrition stakeholders better give due emphasis to mothers/care givers IYCF focused nutrition education in line with the clinical management.

Keywords: IYCF, CMAM, Nutrition Education, Knowledge and Practice

Comparison of Mid Upper Arm Circumference and Weight-for-Height to Diagnose Severe Acute Malnutrition: A study in Southern Ethiopia.

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Background: Weight-for-height Z score (WHZ) and Mid Upper Arm Circumference (MUAC) are two independent anthropometric criteria to diagnose Severe Acute Malnutrition (SAM) in children. Mainly due to practical reasons, MUAC is widely used in Community Management of Severe Acute Malnutrition (CMAM). Understanding how diagnosis of severe wasting in children is related to age and sex may provide valuable information for programs providing care for SAM. While it is known that MUAC and WHZ identify different population of SAM children, it is not well understood whether this difference is associated with age and/ or sex differences.

Objective: To describe the age and sex distribution of children diagnosed as severely wasted using MUAC and WHZ; and assess the association between these anthropometric criteria and the age and sex of children.

Method: We analyzed data from a population-based survey conducted over a six month period in rural South Ethiopia. Children (n=4,297) aged 6-59 months with valid anthropometric measures were studied. Severe wasting was defined by use of MUAC and WHZ as per World Health Organization (WHO) classification. Age and sex distribution of severely wasted children were analyzed. Multivariate logistic regression was used to assess independent association of age and sex of children with anthropometric criteria to diagnose severe wasting as the outcome.

Result: Using MUAC resulted in a larger proportion of children categorized as wasted compared with use of WHZ. When WHZ was used, prevalence of wasting in boys was higher compared to girls. Prevalence of SAM in girls was higher when MUAC was used than if WHZ was used. Severe wasting defined by use of MUAC and WHZ was associated with younger children less than 24 months. There was a sex difference when using WHZ in that boys had higher odds (OR_{adj} = 2.0, 95% CI: 1.1, 3.8) to be diagnosed as severely wasted compared to girls, but no sex-difference when using MUAC. The strength of association did not vary with season.

Conclusion: There were age and sex-differences in children diagnosed as severely wasted depending on the indicator used. More research is needed on prediction of mortality using anthropometric measurements in relation to age and sex of children.

Abs 118

Compliance with Iron-Folate Supplement and Associated Factors among Antenatal Care Attendant Mothers in Misha District, South Ethiopia A Mixed Method Study.

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Background: In Ethiopia, higher proportions of pregnant women are anemic. Though anemia has multifaceted causes, half of its causes attributed to iron deficiency. Despite the efforts to reduce iron deficiency anemia during pregnancy, only few women took an iron supplement for the recommended period. Thus, this study aimed to assess compliance with iron-folate supplement and associated factors among antenatal care attendant mothers in Misha district South Ethiopia.

Method: Community based cross-sectional study supported with in-depth interview was conducted from March 1 to 30/ 2015. The sample size was determined using single population proportion to 303.Simple random sampling technique was used to select the study participants after allocating the total estimated sample size proportionally to each kebele. In-depth interviews were conducted with 13 key informants' selected by criterion purposive sampling technique. Descriptive statistics, bivariate and multivariable logistic regression analyses were employed to identify factors associated with compliance to iron-folate supplement.

Results: The compliance rate was found 39.2%. Mothers who were 25 years and above [AOR =2.985, 95% CI = (1.069, 8.340)], knowledge of anemia [AOR = 4.451, 95% CI = (2.027, 9.777)], knowledge of iron-folate supplement [AOR = 3.509, 95% CI = (1.442, 8.537)], counseling on iron-folate supplement [AOR = 4.093, 95% CI = (2.002, 8.368)] and frequency of ANC visits [AOR = 3.558, 95% CI = (1.189, 10.653)] were significantly associated with compliance to iron-folate supplement.

Conclusions: Compliance rate of iron-folate supplementation during pregnancy remains very low in the Misha district. Thus, this study showed that providing women with clear instructions about iron-folate tablet intake and educating them about anemia, the health benefits of the iron-folate-tablets and promoting mothers to visit ANC at least four times can increase compliance with iron-folate supplementation.

Keywords: Iron-folate, Pregnant mothers, Antenatal Care, Misha district, Ethiopia.

Health Economics

Abs 119

Podoconiosis Patients' Willingness to Pay for Treatment Services in Northwest Ethiopia: Potential for Cost Recovery.

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Background: Podoconiosis is non-filarial elephantiasis of the lower legs. It is more commonly found in tropical Africa, Central and South America, and northwest India. In Ethiopia, a few non-governmental organizations provide free treatment to podoconiosis patients, but sustainability of free treatment and scale-up of services to reach the huge unmet need is challenged by resource limitations. We aimed to determine podoconiosis patient's willingness to pay (WTP) for a treatment package (composed of deep cleaning of limbs with diluted antiseptic solution, soap, and water, bandaging, application of emollient on the skin, and provision of shoes), and factors associated with WTP in northwestern Ethiopia.

Methods: A cross-sectional study was conducted among randomly selected untreated podoconiosis patients (n = 393) in BasoLibenworeda, northwestern Ethiopia. The contingent valuation method was used with a pre-tested interviewer-administered questionnaire.

Results: The majority of podoconiosis patients (72.8%) were willing to pay for treatment services. The median WTP amount was 64 Birr (US$ 3.28) per person per year. More than one-third of patients (36.7%) were willing to pay at least half of the full treatment cost and 76.2% were willing to pay at least half of the cost of shoes. A multivariate analysis showed that having a higher monthly income, being a woman, older age, being aware of the role of shoes to prevent podoconiosis, and possession of a functional radio were significantly associated with higher odds of WTP.

Conclusions: The considerable WTP estimates showed that podoconiosis treatment could improve sustainability and service utilization. A subsidized cost recovery scheme could reduce treatment costs and more feasibility integrate podoconiosis treatment service with other NTDs and the government's primary health care system.

Keywords: Willingness to pay (WTP), Podoconiosis, Neglected tropical disease, Health policy, Global health, Treatment, Contingent valuation method, Ethiopia

Willingness to Pay for Footwear, and Associated Factors Related to Podoconiosis in Northern Ethiopia: A Comparative Cross Sectional Study.

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Background: Footwear has multiple health benefits, including the prevention of podoconiosis and other diseases. Prevention strategies for podoconiosis include footwear use and regular foot hygiene practice. In Northern Ethiopia, use of footwear by the rural community is limited and non-governmental organizations provide footwear for school children as a means of preventing podoconiosis. However, this is not a sustainable strategy, so it is important to assess whether community members are willing to pay for shoes, and if so, how much of the market price they are willing to cover. This study assessed willingness to pay for shoes among people with and without podoconiosis in northern Ethiopia.

Methods: A comparative cross-sectional community-based study was conducted in Mecha and Gozamen *woreda* among randomly selected people with and without podoconiosis. Trained health extension workers collected data using an interviewer-administered structured questionnaire. The contingent valuation method includes constructing a hypothetical market for the commodities and asking individuals the maximum amount they would be willing to pay for the service or the minimum amount they would be willing to accept in compensation if they were deprived of it. Techniques used in contingent evaluation are binary, with follow-up, where a price for the commodity is presented to the respondent and they are asked to give a "yes or no" response. The data were entered into EPI-Data and exported to SPSS version 16.0 statistical software package for analysis. Strengths of associations and statistical significance between independent and dependent variables were assessed using adjusted odds ratio estimates with 95% confidence interval and p-values.

Results: A total of 420 individuals (188 people with podoconiosis and 232 people without) participated in the study, giving a response rate of 90%. Willingness to pay for footwear among people with and without podoconiosis was 72.3% and 76.7% respectively (p=0.30). People without podoconiosis who perceived that their household income was 'average' in reference to their neighbor were much more willing to pay than individuals who perceived their income to be 'below average' (OR: 4.7; 95% CI: 1.7, 13.3).

Conclusion: There is substantial willingness to pay for footwear. The expressed willingness to pay results indicates demand for footwear in the community, suggesting an opportunity for shoe companies. There is still a substantial proportion of individuals not willing to pay for footwear. This requires intensified public education and social transformation to bring about change in behavior towards footwear use if elimination of podoconiosis within our generation is to be achieved.

Economic Burden of Diabetes Mellitus to Diabetic Patients and their Families Attending Health Facilities in A.A Ethiopia; Institution Based Cross Sectional Study.

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Introduction: Diabetes imposes large economic burdens on national health care, these ranges from individual to national economy. In developing countries, the problem of diabetes was once considered a rare condition, but, because of rapid urbanization, the ageing population and other factors risk factors, its prevalence is raising rapidly. As International Diabetes Federation an estimated average cost in USD was 1,437 per person with diabetes was spent globally on treating and managing the disease in 2013.

Objective: The objective of this study was to assess the economic burden of diabetic mellitus to patients and their families.

Method: An institution based cross sectional study was employed in purposively selected health facilities that provide care for diabetic mellitus in Addis Ababa city from April 1 to May 4, 2015. Structured questionnaires were used to collect the data. Then the data was entered and analyzed using the statistical package for social scientists version 20 (SPSS-20). Both descriptive and analytical statistics was applied. Correlation was done in order to determine relationship between dependent and independent with spearman's rho correlation coefficient.

Result: The study covered 404 diabetic patients. We found that median direct cost of caring for a diabetic patient per month was 459 birr. Of this 58.9% was medical cost. And total indirectly cost was median of 6 days (mean 17.29) both by patient and their caregiver in 6 months. Direct cost was significantly higher in those who had higher education, income, family income, frequently had laboratory test, source of medication cost from free to self and insurances in correlation degree of (0.1 to 0.6 or -0.1 to -0.6) at p- value < 0.05.

Conclusion and recommendation: From this study it can be concluded that diabetes mellitus was an expensive illness to treat and manage to individuals who had low income. Medical costs a major contributor to the direct cost of diabetes care. This is a need to increase awareness of these facts among patients, their families and all health professionals and stakeholder involved in the care of diabetes and health policy makers of these countries. Finally further investigation on intangible cost, catastrophic and impoverishments of Diabetes mellitus s on patients and their families. And any efforts should be done at providing medical cost at low cost and other cost reduction activities should be advocated.

Keywords: Economic burden, Diabetes Mellitus, Patients, Health Facilities.

Health Service

Abs 122

Level of Mental Health Integration in Primary Health Care Units in Debre Markos Town, Ethiopia, 2014.

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Introduction: Mental health disorders in low and middle income countries contribute to roughly 10% of the global burden of disease. In rural areas especially, lower access to care and lack of health services contributes to failure to get proper care and treatment for conditions such as schizophrenia, depression, anxiety, and even suicidal ideation. In settings where resources are low, mental health services from primary health care settings would allow for better detection and intervention strategies. Thus, this study aims to assess the current level of mental health integration in the primary care setting as a baseline for future improvement.

Methods: A cross sectional study design using a literature review was conducted on the current mental health status of Ethiopia as well as previous strategies for integration of mental health in primary care. Next, quantitative data was collected from 2 primary care units in Debre Markos town in order to determine mental health utilization under the current health strategies. Program information was collected from a health professional within each primary health care unit along with observational data and document review. Referral data from the Debre Markos reference hospital was also collected in order to assess referral utilization.

Results: Attempts for mental health integration into the primary care system are evident through policies of the Federal Democratic Republic of Ethiopia. However, the implementation is recent and the capacity for training and services is low. Low levels of mental health integration were recorded in the primary care setting. Areas of improvement include education and training for primary health care worker and communication between primary and secondary health care systems.

Conclusion and Recommendations: Training for mental health services in primary care units is poor. It is recommended greater education and training for the various disorders including epilepsy, substance abuse, and depression are addressed. In addition, funding is necessary to increase utilization, education, and to reduce stigma among mental health patients.

Keywords: Integration, primary health care, Debre Markos

One Health Approach and Pastoralism: A Systematic Review.

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Background: The health status of pastoral communities across the globe is usually poor. Similarly, the pastoral region of Ethiopia remains with extremely poor health status even a multiple interventions have been launched to improve the quality, access, and utilization of primary health care. However, the One Health concept linking humans, animals and their environment has good potential for diseases control in marginalized and resource poor settings. This calls to focus on the interactions of pastoralists, their livestock and the environment. This review was undertaken in response to the One Health approach that was launched and expressed the need for One Heath approach in the control and understanding of emerging and re-emerging diseases in Ethiopia.

Objectives: The main aim of this systematic review was to summarize the current research literature on one health approaches and pastoralism: Focused on its implication, pastoralist health threats at human, animal and environmental health interface; one health approach as disease prevention and control strategies.

Review methods: The methods of this review were based on recommendations for systematic review on Cochrane Health Promotion and Public Health Field and before initiating the search, research questions were drafted and validated with a previous review on one health approach to ensure practice relevancy. Peer-reviewed journals, books, online materials, reports and other relevant documents were used as the main sources of literature. PubMed, Mesh, Medline and Google search engine was used for retrieving relevant articles and governmental reports.

Results: The One Health approach emphasizes the relatedness of human, animal, and environmental health and the importance of trans-disciplinary efforts. According to this review, risk assessment, enhanced surveillance and event verification; Epidemiological investigation; Outbreak communication; and Logistic support and supplies are among the health issues that can be achievable via coordination at Human-Animal-Environment interface. It considers the role of changing environments with regard to infectious and chronic disease risks affecting humans and nonhuman animals. Recent published work indicates integrated approaches that consider human, animal, and environmental health components can improve prediction and control of certain diseases: the concept specified that only human, animal, and environmental health aspects of a disease issue be considered and assessed. Due of its detecting and addressing zoonosis; timely sharing of data for alert and response; early incident detection; and

identification of potential public health problems, it has been recognized as a major element of disease control and prevention strategies by international agencies, countries. Additionally, it proofs that the concept of One Health address health service issues through combined service delivery for human and animal health that can leverage existing health service delivery infrastructure in resource-poor settings.

Conclusion: Two main lines of research have emerged from these interests; the health of mobile pastoralists and, the control of zoonosis in developing countries. In particular, a policy research is needed to translate knowledge and/or new approaches from veterinary /agricultural related research to address human diseases (TB, respiratory infections, malaria, and parasitic diseases) as well food security to reduce malnutrition.

Pregnant Women's Intention to Use Health Facility for Delivery in Pastoralist Communities of Afar, Ethiopia: Perspective of Health Belief Model.

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Background: The rate of maternal mortality in Ethiopia is one of the highest in the world, even highest compared to Sub-Saharan countries. Promoting institutional delivery is one of the key strategies implemented to reduce maternal mortality. This study aimed at identifying determinants of intention to use health facility for delivery among pregnant women in Afar region of Ethiopia.

Methods: Community based cross sectional study using structured questionnaire was conducted over a period of one month (April 1 to 30/2014) among 412 pregnant women. Systematic sampling technique employed to select respondents from the randomly selected 12 kebeles in the zone 3 of Afar region. The data were analyzed by SPSS version 20.0 and multiple logistic regressions applied to identify factors associated with intention to give birth at health facility. Significant association was declare at 95% confidence interval and P-value less than 0.05.

Results: Three hundred fifty seven pregnant women were participated in the study and their median age was 26 years (SD=+4.3). Only 108(30.3%) of participants planned to use health institution for their current pregnancy. Pregnant women with household monthly income of ≥500 ETB (AOR=1.23; 95%CI:1.10-2.90; P=0.031),those attended ANC(AOR=1.41;95%CI:1.31-2.10;P=0.010), perceived susceptibility to delivery related complication(AOR=1.52;95%CI:1.30-2.70;P=0.010) and perceived severity of delivery related complications(AOR=1.66; 95%CI:1.12-2.31; P=0.038)) and perceived barrier to utilize institutional delivery (AOR=1.32;95%CI:1.29-2.10; P=0.026) were significant independent predictors of pregnant women's intention to give birth at health facility.

Conclusions: Most pregnant women still preferred home to health facility for birth attendance, and women's perception of susceptibility and severity to delivery related complication and perceived barriers to use health facility for birth are significant factors to use the service. Strengthening community based health education intervention and health facility based health information recommended.

The Somaliland Ehealth Stakeholder Usability Needs Survey: A Rapid Assessment on Readiness, for Formal Framework for Customized Ehealth Operations and Support System for A Fragile-State in an Armed-Conflict Region.

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Background: Technological advances (ICT, mobile & internet) are redefining the Public health approaches to HealthCare system - an essential aspect of human life and a major issue for governments. The internet has created new opportunities to complement the traditional approaches to health challenges. Like eComerce and eBanking, eHealth and mHealth is gaining popularity in developing world and "difficult" areas facing doctor-to-patient engagement challenges. The explosion of eHealth products is reminiscent of the dot.com phenomena; but like the internet, eHealth is a game-changer. So, how do we get into eHealth /mHealth market? How do we plug the users and stakeholders in war-torn regions into an architecture that is sound from a techno-business model perspective? The horn of Africa, plagued by over 2 decades of armed-conflict and instability, lies on the edge of health-catastrophe and the Achilles heel to Africa to meeting the SDGs targets and to reverse the poor health and developmental ratings.

Defined as "the use of information (data) and communication technologies for health processes either locally and at a distance (WHO 2005), E-health is an essential tool in ensuring equitable and quality health care in urban and rural settings and strengthening human capital in meeting health related SDG targets and health service coverage worldwide. It is a key to reversing the poor health and developmental ratings by bridging the barriers to "equal-access" in distributed health knowledge and to geographical barriers. However, utilization of e-health may only be possible in a Formal Framework for customized operations and support and were stakeholders have knowledge and positive attitudes towards e-health. This study aimed to determine the Stakeholder eHealth usability needs through a Rapid Assessment on Readiness, for Formal Framework for Customized eHealth Operations and Support. It specifically considered the healthcare professionals' attitudes towards e-health, level of ICT skills and potential e-Health use in healthcare delivery in government and private hospitals in Somaliland.

Methods: Cross-sectional survey design using rapid assessment technique was employed. Sixty-eight healthcare practitioner in three government hospitals and four private hospitals in Awdal region Somaliland participated in the study. A pretested self-administered questionnaire was used to collect the required data. Data was analysed using SPSS software Version 19.

Results: Out of the 58 respondents, 49 (84%) reported that "The eHealth System as Proposed caters for my interest, works for me and will enhance health care delivery, I would support its deployment for use in this region". Access to computer eHealth compatible gadgets was 52 (90%); workers who accessed Internet in the workplace 43 (74%); those who accessed Internet in at home 50 (86%). Positive attitudes towards e-health attributes stood at 54 (93%); high level of skills on eHealth 28 (48%); moderate level of skills on eHealth at 20 (34%) while low level of skills on eHealth was 10 (17%). Those who would learn eHealth technology when introduced were 52 (90%).

Conclusions: The findings suggest that Somaliland is Ripe for eHealth as an essential healthcare-information sharing tool incorporating both the traditional and online-internet-based health delivery modes. The results paved way for the design of a Formal Framework for eHealth Customized Operations and Support System in Somaliland.

Institutional Delivery Service Utilization and Associated Factors in Zala District, Gamo Goffa Zone, Southern Ethiopia, 2015.

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Background: Reducing maternal mortality is a global priority which is particularly relevant to developing countries like Ethiopia. The key to reducing maternal mortality ratio and improving maternal health is increasing attendance by skilled health personnel throughout pregnancy and delivery.

Objective: To assess the institutional delivery service utilization and associated factors among childbearing women who have delivered within one year prior to the study in Zala district, Southern Ethiopia.

Methods: A community-based cross-sectional study was conducted from March 18-30, 2015 in Zala District, Gamo Goffa Zone, Southern Ethiopia. Multistage sampling technique was used to select the study participants and total of 373 mothers who have delivered within one year prior to the study period were interviewed. Data was collected through face to face interviews using structured questionnaire. Analysis was carried out by using SPSS version 21. Bivariate and multivariate logistic regression analyses were carried out to examine the existence of association between the outcome variable and selected determinant factors. Statistical significance was considered at $p < 0.05$ and the strength of statistical association was assessed by odds ratios (OR) with 95% confidence intervals.

Results: The study indicated that only 19.8% of the respondents delivered in health institution. Among women who delivered at health institution, 13.9% deliveries were in health centers, 3.2% were in hospital and 2.7% at health posts. Factors that statistically significant association with institutional delivery service utilization in this study were; women who live in urban were approximately 4 times more likely to deliver in health institutions than rural dwellers (AOR = 3.64, 95% CI = [1.14,11.51]), women's education (AOR = 8.01, 95% CI = [2.07, 31.08]), antenatal care four and above visits during last pregnancy were 5 times more likely to deliver in health facilities (AOR = 5.29, 95% CI = [2.63, 12.96]) and mothers who were delivering their first babies were 13

times more likely to deliver in health facilities than those who had five and more deliveries (AOR = 12.98, 95%CI= [3.50, 28.13]).

Conclusion and recommendations: Institutional delivery service utilization was found to be low in the study area. Secondary and above level of mother`s education and antenatal care four and above visits were amongst the main factors that had an influence on health institution delivery. Increasing the awareness of mothers about the benefits of institutional delivery services is recommended.

Patient Satisfaction and Associated Factors among Private Wing Patients, Felege Hiwot Referral Hospital, North West Ethiopia.

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Objective: This study aims to assess patient satisfaction and associated factors among adult private wing patients at Felege Hiwot Referral Hospital, Amhara National Regional State, North West Ethiopia

Methods: Institutional based quantitative cross sectional study was conducted from March 12 to April 30, 2014 at Felege Hiwot Referral Hospital (FHRH) private wing on 384 service users using systematic random sampling technique. Data was collected by using "structured interviewer administered questionnaire', entered using EPI INFO version 3.5.3, and analyzed by Statistical Package of Social Science (SPSS) for windows version 20.0. Odds Ratio (OR), P-value and 95% Confidence Interval (CI) were computed to show the association of variables.

Result: Three hundred eighty four patients were interviewed, of which 70.3% were outpatients. The results of the study showed that overall patient satisfaction with the health services rendered at the private wing of the hospital in this study was 57.8% at 95% CI (52.8%-63.1%) computed from satisfaction measuring items. Among measuring items, satisfaction was reported to be highest (93.2%) to the cleanliness of the rooms, and least for availability of signs and directions to ease the way in the private wing (25%) to the scale satisfied. Being outpatient reduces satisfaction by 59% as compared with inpatients (AOR: 0.411(0.243-0.696).

Conclusion: Overall private wing patient satisfaction (57.8%) at 95% CI (52.8%-63.1%) is lower as compared with recent studies in public hospitals of Ethiopia. Age, occupation and patient department are significantly associated with patient satisfaction. Since patient views have been remarkably necessary inputs to strengthen and improve services, considering the findings of this study while planning intervention is worthwhile.

Keywords: Private wing, Hospital, Outpatients, inpatients, satisfaction**.**

Assessment on the Status of Immunization Mainstreaming Activity Implementation in Mekane Yesus Church System at Gambella Region.

Muluken Asres, Filimona Bisrat, MD/MPH; Yetnayet Kebede, MBA, Addis Ababa, Ethiopia, 2014.

Background: THE CORE Group Ethiopia has been trying to mainstream immunization messages in the church of Ethiopian Evangelical Church Mekane-Yesus (EECMY) in order to mobilize the communities to attain high routine immunization coverage in Gambella Region since 2012.

Objective: To assess the implementation status of the Immunization *communication and social mobilization mainstreaming activity in the Mekane Yesus church of* Gambella Region.

Methods: Community based cross sectional study of house to house survey using Lot Quality Assurance Sampling (LQAS) technique and was interviewed using structured questionnaires from five randomly selected Woredas. In addition In-depth interview also made for fourteen respondents who were project related workers and priests/ evangelists/pastors from each synod.

Result: In all the study areas 98.7% (95% CI =18.6%) were presented during preaching ceremony of which 62.7% (95%CI=15.2%) were attended on immunization education and during in house congregation activity of the church 50.4% (95% CI=13.9%) were also received immunization education. Of all respondents 38.4% (95% CI=12.4%) was able to mention three or more vaccine preventable diseases and 65% (95% CI=15.2%) correctly replied the appropriate age of newborn when to start immunization for the first time. The majority 83.8% (95% CI= 17.5%) respondents believed that immunization is not harmful to their children. The immunization coverage of OPV 0 and BCG confirmed by card were 85.6% and 90.8% respectively.
Itang Presbytery, John Ochang said; People should be vaccinated because for people to perform the work of God they need to be strong. If we are weak and not strong we can't worship God always. For this mothers and parents should vaccinate their children. We are giving this message through the church program for people coming to congregations and presbyteries.

Discussion: The majority of respondents received immunization message during church preaching ceremony and in house congregation activities. As a result this study it confirmed that more than 90% reached the coverage of polio birth dose and BCG which show improvement when compare with administration reports of two years back. Therefore, this strategy has to be strengthened with focused messages and expanded to other health programs in order to achieve good coverage.

Job Satisfaction and Factors Influencing it among Nurses Working in Jimma Zone Public Hospitals, Oromia Regional State, Southwest Ethiopia, 2014: A Cross Sectional Study.

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Background: Efficiency and productivity of human resources depends upon many factors, and job satisfaction is one of the most important factors. Nurses' job satisfaction plays an important role in the delivery of high-quality health care. Nurses play a pivotal role in determining the efficiency, effectiveness and sustainability of health care systems. Recent studies show that nurses are highly dissatisfied with their jobs, which in turn results in lower morale and seriously affects the quality of healthcare service. There is paucity of studies addressing job satisfaction among nurses in public hospital setting, including Jimma zone, the information obtained from this study would hopefully assist in identifying factors influencing job satisfaction among nurses working in Jimma zone public hospitals.

Objective: To assess job satisfaction and factors influencing it among nursesin Jimma zone public hospitals, Oromia regional state, Southwestern Ethiopia, 2014.

Methods: Institution based cross-sectional study was conducted from March 10-April 10, 2014. Census was employed. A structured self-administered questionnaire based on a modified version of theMcCloskey/Mueller Satisfaction Scale was used. Data was entered and analyzed using SPSS software. Mean satisfaction scores was compared by independent variables using an independent sample T-test and ANOVA. Bivariate and multivariable linear regression was done.

Result: A total of 316 nurses were included, a response rate of 92.67%. The overall mean job satisfaction was (67.43 ± 13.85). One third of the study participating nurses 33.5% (n = 106) had low level of job satisfaction. Working unit, mutual understanding at work, professional commitment and work load were significant predictor with the overall job satisfaction. Nurses were least satisfied from professional opportunities and extrinsic reward subscales while they were most satisfied from coworker relation.

Conclusion and Recommendation: Thirty three percent of nurses had low level of job satisfaction. Professional commitment, workload, working unit and mutual understanding at work predicted the outcome variable. Nurses were least satisfied from professional opportunities and extrinsic reward. Thus, health care administrators, including nursing administrators, should consider the factors that contribute to job dissatisfaction and try to reduce them by implementing supportive strategies to increase job satisfaction.

Keywords: Job satisfaction, Nurse, Nursing, Public hospital, McCloskey/Mueller Satisfaction Scale

The Role of Private Health Facilities in Maternal Health in the Capital City of Ethiopia.

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Background: The role of the private health sector in providing health care services is of great interest for countries in the developing world. These are often assumed that the private health providers will be more efficient and higher quality alternative to the public sectors and it also add up the overall resources available in the health sectors.

Purpose: The overall purpose of this survey is to quantify the private health sector contribution in maternal health in Addis Ababa City Administration . Because of the critical need for maternal health services in many developing countries, it is important to explore whether there is potential to increase their contribution to the overall maternal health services in the achievement of the country MDG goals 5.

Methods: A cross sectional descriptive study was conducted in the private health facilities in Addis Ababa city administration. All private hospitals and higher clinics and randomly selected medium clinics participated in the survey. A pre tested structured questionnaire was used in the data collection and administered by trained nurses (as data collectors).Health professionals practicing in the facilities, availability of the different type of services related to maternal health and number of client served during the 2005 Ethiopian physical year were the major ones . Their level of contribution was compared with the public health facilities in which the secondary data taken from the Addis Ababa city administration health bureau.

Results: A total of 2962 permanent and 1368 part time health professionals related to maternal health were available at private health facilities. 72 of them were Gynecologists and 60 general surgeons. In public health facilities, 4330 health workers were available, but only 59 of them were specialists of any category. Service availability information showed that nearly 50 % of the private facilities have ANC services, one-third of them have labour and delivery services and 13 % of them have procedures for complicated labour and delivery such as caesarian section. A one year retrospective data (EFY 2005) comparison of the public and private health facility revealed that 34 % of the new ANC attendee, 37 % of life births, 28 % of PMTCT services at ANC and 37 % of the PMTCT at Labour and delivery contributed by the private health facilities.

Conclusion: This study demonstrates that the contribution of private health facilities for maternal health services is significant, and can be increased further by leveraging the human resources of private health providers, especially specialists which are in short supply in the public sector. New regulatory standards set by the Ethiopian Government (FMHACA) which will be implemented in the near future will increase the overall quality of services including maternal care at the private health facilities.

What are the Immediate Threats to Expanded Program of Immunization and Surveillance Program when Polio Eradication Intuitive Recourses are Taken Away, in Gambella Region?

Solomon Zeleke, BSc, MPH, *Yemane Berhane, Professor, Addis Continental Institute of public Health, 2014.*

Background: Polio eradication initiative resource is contributing for Expanded Program of Immunization and surveillance. The main functions were strengthening EPI and surveillance program, many resources invested. However, the sustainability of polio initiative functions/ activities after completion of eradication campaign is not well known.

Objective: To explore the perceived immediate threats on Expanded Program of Immunization and surveillance program following the completion of the polio eradication campaigns in Gambella peoples Regional State, Ethiopia.

Methodology: Qualitative study was conducted in Gambella Peoples Regional state, Ethiopia in January 2014 GC. Data collected through in-depth interview from purposively selected 12 woredas surveillance focal persons, Expanded Program of Immunization (EPI) focal persons, and WHO surveillance focal persons working in the Region and Regional Health Bureau Surveillance and EPI officers. The data was analyzed by using open code computer software 4.02 Version and the quotes were sorted by manually.

Results And Discussion: The result of the study presented in five main thematic areas.

Effect on Routine Immunization/service delivery: In this study, the participants reflected that it has threat to routine immunization program mainly high dropout rate of immunization, cancellation of outreach immunization session and low demand from community due to lack of resource to reach hard reach areas and low awareness of the community respectively   may lead to low immunization coverage.

Effect on Communication and Advocacy: The study come up with it negative effect on communication mainly may lead to low coverage of campaign target and resistance of community for vaccine due absence of community volunteer who were the engine for social mobilization during polio supplementary Immunization Activities (SIAs). Similarly study in India showed that social mobilization toward eradication of polio by mobilizing and convincing the resistant village communities in large in India through Core Group polio project (CGPP)

Validated India toward eradication of polio. In addition to this, the performances of CGPP implemented areas were better than Non–CGPP implemented areas.

Effect on cold chain/Logistics: Refrigerator maintains for cold chain was unlikely happened when polio eradication initiative resources ceased due to lack of supplies of cold chain and technical competence of the service delivers. In this study, few the participants responded that rather than the resource; the stakeholder, health workers and lower level leadership have positive impact on cold chain maintains.

Effect on Surveillance and Monitoring: From the result of study, Surveillance will be very weak besides to this community based surveillance will stop and supportive supervision and technical assistance will be challenging due to resource shortage. Similar findings have been reported from Studies in India and Nigeria regarding surveillance-monitoring program, Vehicle availability was problematic in majority of the districts of surveillance being done that hindering supervision and outbreak investigation and contingency fund or budget needed for surveillance.

Effect on vaccine supply: Regarding the vaccine supplies, most of participants of the study reported that it would not have effect on introduction on new vaccine. They responded that it has effect on transportation Vaccine from Region to districts and up to kebele, also some the woredas are too wide, so this may lead to unable to reach the target antigen to up to health post level, hence it may leads to low coverage of immunization.

Conclusion: The presence of polio eradication resources is benefiting the EPI and surveillance program. whilst, this resources taken way it has significant effect in routine immunization, surveillance and monitoring, service delivery, communication and social mobilization due to lack of resource .

Recommendation: The Federal and Regional Government should be prepared to provide additional funding to cover essential costs of immunization and surveillance program in absence of external funding, such as polio eradication program.

The Beauty of Integration; Integrating Youth Friendly Services (YFS) within the Public Health Facilities in Ethiopia.

Worknesh Kereta, MPH, Adolescent and Youth Reproductive Health Advisor, Pathfinder International Ethiopia.

Description of intervention: In Ethiopia, young people aged 10-24 comprise one third of the population, and bear a disproportionate burden of poor sexual and reproductive health (SRH) outcomes. They face a range of barriers to health and stability, including a lack of educational opportunity, poverty, the presence of HIV and AIDS, STIs, harmful traditional practices, unwanted and mistimed pregnancies, risk of unsafe abortion, and gender based violence. Though their need for SRH services is dire, availability, accessibility, acceptability, and equity of quality Reproductive health services and information remains lacking.

Youth-friendly service (YFS) is an approach that mitigates these barriers and increases use of high-quality SRH services by young people. YFS have been implemented in a variety of cultural and regional contexts. The main objective of this program is to improve and protect young people's SRH and increase their access to contraception and HIV prevention, care and treatment, it is critical that YFS are scaled-up by integrating them into all public health facilities. Through the Pathfinder International/Integrated Family Health program (IFHP) in Ethiopia, is leading the integration of YFS within the public health system. To meet the need for quality YFS, Pathfinder International–in collaboration with the Federal Ministry of Health and its partners—integrated YFS within 248 public health facilities across six major regions. Using the socio-ecological model to address the individual, social, and structural drivers of youth SRH outcomes, IFHP sought to increase youth SRH service uptake across Amhara, Oromia, SNNP, Tigray, Beneshangul and Somali regions of the country—thereby providing the Ethiopian youth with timely and appropriate SRH services.

Results: Pathfinder/IFHP collaborated with local partners equipped and furnished the YFS facilities, train peer educators, sensitize the communities and health facility staffs to create favorable environment for young people to utilize the services without fear and shame. In addition, Pathfinder/IFHP worked with the regional health bureaus to train clinical service providers and make the service friendly and support 248 health facilities to implement YFS.

Since 20010, nearly 4,022405 young people had contacts to YFS for comprehensive SRH and other clinical services, including contraception and HIV and AIDS interventions and 10,878677 young people received information and counseling services through health care providers and peer educators. Pathfinder/IFHP continued supporting the government system by transferring

skills through close technical support, availing consumables and supplies. In addition, pathfinder/IFHP-supported YFS health facilities are currently operating as learning sites where IPOs, NGOs, regional health bureaus, and woreda health offices are visiting in order to replicate YFS in their respective health facilities beyond IFHP six target regions. The scale-up of YFS is limited by resource constraints. These constraints may be overcome at the health facility level as decentralization increases the power of the health facility to manage their own budgets.

The ecological model approach to integrate YFS through public health facilities has been successful in Ethiopia and service utilization indicates that young people are increasingly accessing services. The potential for scale-up is strong due, in part, to continuous efforts to build capacity of local government officials and generate buy-in from the health system and from communities. The experiences and lessons from implementation should be utilized to bring YFS to scale both in Ethiopia and other countries.

Human Resource for Health

Abs 133

Simulation Based Training on Management of Post-Partum Hemorrhage at Midwifery Teaching Institutions in Ethiopia.

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Introduction: In Ethiopia MMR is 676 per 100,000 live births, <30% mothers give birth with a skilled birth attendant. WHO recommends at each birth there should be a skilled birth attendant. If a woman gives birth with a skilled attendant it is anticipated that the majority (80%) of maternal deaths will be averted. Post-Partum Hemorrhage (PPH) is the leading cause of maternal death and is responsible for 1/4 of all maternal deaths. Skill training was given to 29 health professionals and midwife tutors at Universities and Colleges in Ethiopia to improve clinical management of PPH using Helping Mothers to Survive – Bleeding after Birth [HMS-BAB] curriculum from Laerdahl and Jhiepgo.

Objective: To assess midwife tutors confidence level in identifying different causes of bleeding and suggested clinical management of different types of PPH using the HMS-BAB curriculum.

Methods: Participants' confidence level was measured using a questionnaire to assess the impact of HMS-BAB and Helping Babies Breath [HBB] training session. It was administered just before (pre-training) and immediately after the sessions (post-training). The assessment evaluated participants' confidence in the performance of skills surrounding helping maternal survival including active management of the third stage of labor, retained placenta, PPH, bimanual compression of the uterus, and bag and mask ventilation of a non-breathing newborn. Twenty-nine Midwifery teachers from Ethiopian health institutions attended the whole session and completed the confidence assessment test before and after two weeks of professional education that included HMS-BAB and HBB. Five were subsequently excluded as they were not able to attend the whole session and/or did not complete the tests. Descriptive statistics and paired samples t-test were used for statistical analysis, setting significance at p<0.05.

Results: Participants demonstrated a significantly higher mean/median of post-training confidence level (20 vs. 23) and a significantly greater inter-activities confidence level progression (p<0.000). After completion of the continuing professional learning training overall

learner post-training confidence level was also significantly higher in managing: retained placenta, PPH, performance of bimanual uterine compression and ability to perform bag and mask ventilation of a newborn (P<0.000).

Conclusions: Teaching Midwives using simulation/hands-on techniques is very effective in significantly increasing their confidence in the performance of clinical activities that are part of Helping Mother Survive (Bleeding after Birth) and Helping Babies Breath.

The Role and Dynamics of Organizational Power on Employees' Job Satisfaction with in Public and Private Hospitals in Addis Ababa, Ethiopia, 2015.

Adiam Nega, *MPH, Addis Ababa University (College of Health Science, School of Public Health); Damen Haile Mariam, Professor.*

Background: In an organization, power is an influential tool in order to achieve organizational goals and keep human resource on the right place. In order for managers to achieve organizational goals and to contribute to employees' job satisfaction for better outcomes, they should use the best type of power base as an influential tool.

Methods: An institution based cross sectional study design was conducted among 586 health professionals (454 from public hospitals and 132 from private hospitals)in Addis Ababa from March to April 2015.Both quantitative and qualitative techniques were used for collecting the data for the study.

Results: Two hundred fifty six (56.4%) of the professionals within the public hospitals were dissatisfied with their jobs, while the corresponding proportion among those within private hospitals was 28%. The factors that affect employees' job satisfaction include: getting training and opportunities for further education; as well as conducive working hours and infrastructure. Those professionals who reported that their managers use information power were also more likely to be satisfied with their jobs than those that reported otherwise [AOR: 1.72; 95%CI: (1.19, 2.49)].

Conclusion: Using legitimate and information power have positive relationship to employees' job satisfaction.

Keywords: Powerbase, dynamic, job satisfaction.

Health Professionals' Intention to Leave from Public Health Facilities and Its Determinants in Gambella Region, Southwest Ethiopia.

Adugna Endale[1], Shimeles Ololo [2] and Fikiru Tafesse[2], 2012 [1]Dire-dawa University, College of Medicine & Health Sciences; [2]Jimma University College of Health Sciences.

Background: Although the number of health facilities in Gambella region had been increasing dramatically, there were shortages of health professionals in the health facilities besides their high turnover. In spite of the existence of such problem, its magnitude & determinants were not well known. The objective of this study was to determine the magnitude and determinants of health professionals' intention to leave from public health facilities in Gambella Region.

Methodology: Facility based cross-sectional study design was employed from April 12 to 27, 2012. Eleven health centers using simple random sampling technique and Gambella hospital purposefully were selected. All (256) health professionals working in the selected facilities were included in the survey. Self administered structured questionnaire was used to collect information. The data was entered and analyzed using SPSS version 16.0. Variables which showed association in multivariate analysis was considered as final predictors of intention to leave and strength of association was measured through adjusted odd ratio. Ethical approval was obtained from Jimma University.

Result: Among a total of 252 health professionals who responded to the questionnaire, 122(48.4%) had shown intention to leave their current workplace within one year. The magnitude of intention to leave was higher for those who were dissatisfied with their work (86.2%), staff (84.8%), salary (78.8%), management practice (75.8%), incentive mechanism (75.8%), educational opportunity (76.0%), working environment (76.3%), and those who perceived they were not participated in decision making process (76.0%). Final predictors of intention to leave were: educational level, satisfaction status with salary, satisfaction status with work, and perceived involvement in decision making (AOR = 2.08, 5.64, 4.51 and 2.44 respectively).

Conclusion: There is high level of health professionals' intention to leave from public health facilities which can enormously affect the coverage and quality of health services in the region. Health care policy makers and managers should develop and institutionalize evidence based retention strategies taking into consideration the predictors of health professionals' intention to leave.

Keywords: Intention to Leave, Health Professionals, Public Health Facilities, Southwest Ethiopia

Assessment of Inter-Professional Collaboration between Nurses and Physicians Working at Tikur Anbessa Specialized Hospital Addis Ababa, Ethiopia.

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Introduction: Collaboration between Nurses and Physicians is important in health institutions where most activities are team-performed. Ineffective nurse-physician collaboration affects patient outcome, nurses' job satisfaction and organizational cost and is challenged by personal, interpersonal and organizational factors.

Objective: The aim of this study was to assess inter professional collaboration between nurses and physicians working at Tikur Anbessa specialized Hospital.

Method: Institution based descriptive cross sectional study was employed from March to April, 2015 using self- administered questionnaire. Systematic random sampling technique was used to select 293 professionals. Data was entered using epi info version 3.5.3 and exported to SPSS version 20 for cleaning and farther analysis. Descriptive statistics was presented by frequency tables, percentages and measures of central tendency and dispersion. Student t-test was used to evaluate mean difference and p-value <0.05 was considered as significant.

Result: Nurses demonstrate more favorable total Jefferson scale of attitude than physicians (p–value 0.003)
with mean score of 49.18 (SEM 0.39) and 46.64 (SEM 0.89) respectively. Nurses demonstrate mo re frequent collaborative behavior than physicians with mean score of 76.79(SEM 1.09) and 73.49 (SEM 1.98) respectively but it was not significant (p - 0.12). There was no significance difference based on sex, age, and service year with regard to total Jefferson scale of attitude towards nurse-physician collaboration. The younger age group showed more frequent collaborative behavior compared to old age groups with mean value 78.61±16.70, 72.58±15.36 (p value - 0.002). And the respondents with short service year showed more frequent collaborative behavior compared to respondents with long term service year with mean value 80.00±17.28, 69.81±12.64 (t=5.44 and p value - 0.000).

Conclusion: This study identified that majority of the respondents have favorable total attitude towards nurse-physician collaboration and infrequent collaborative behavior in overall NPCS.As compared with physician nurses had more favorable attitudes towards collaboration specifically toward "shared education". And also as compard with physicians, nurses had more frequent colla borative behavior, in subscales of "Decision making process"

Realizing Partnership: Working Together to Empower Midwifery Education through an International and Collaborative Training Program in Ethiopia.
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Maternal and infant deaths have proven to be of concern in Ethiopia. If the rate of birth related deaths in Ethiopia equaled that of Canada, there would be approximately 150 maternal deaths as opposed to the 25,000 that occur every year. The objective of this project is to support Ethiopia in its efforts to address this harsh reality, by supporting the right to a successful birth by both mother and child. In 2012, two Canadian universities, and partners from Ethiopia designed a program called the Senior Midwifery Tutor Training Program (SMTTP). The program is funded by Global Affairs Canada (GAC; formally DFATDC) with its expressed goal to reduce child (under the age of 5) and maternal mortality rates by improving the psychomotor and pedagogical skills of registered midwives in Ethiopia. Using a narrative methodological approach, this session provides a brief overview of the SMTTP program and describes how vital the global Ethio-Canadian partnership has been in the implementation of the SMTTP.

Mental Health and Substance Abuse

Abs 138

Magnitude and Associated Factors of Aggressive Behaviour among Patients with Bipolar Disorder at Amanual Mental Specialized Hospital, Outpatient Department, Addis Ababa, Ethiopia:

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Introduction: Aggressive behavior is a challenging behavior among bipolar patients that causes high rate of violent crime and hospitalization but, there is no information   regards of the magnitude and contributing factors for aggressive behaviour among bipolar patients in sub-Saharan countries.

Objectives: This study was designed to assess the prevalence and associated factors of aggressive behaviour among patients with bipolar disorder who were attending at Amanual Mental Specialized Hospital, Addis Ababa Ethiopia, 2015

Method: An institutional based cross sectional study conducted at Amanuel Mental Specialized Hospital among 411 participants by selected with systematic random sampling technique and data was collected by interview technique with Modified overt aggression scale from May 1 to June 1, 2015. The coded data was checked and cleaned by entering into EPINFO version 3.5.3 and then exported into SPSS - 20 for analysis. Association was determined by using bivariate and multivariate logistic regression and the significance was determined by P-value < 0.05.

Results: A total of 423 participants satisfied the inclusion criteria and among these 411 were assessed with 97.1% of response rate. The prevalence of aggressive behaviour was 29.4% by using Modified overt aggression scale. The commonest associated factors for aggressive behaviour were, having two or more episode, previous history of aggression, depressive symptoms, psychotic symptoms, mania symptoms, medication adherence, social support and current use of substance.

Conclusion: Among bipolar patients the prevalence of aggressive behaviour was high and statistically significant predictors were number of episode, history of past aggression, mania, psychotic and depressive symptoms, medication adherence, social support and current use of substance. So clinicians should be alert to assess aggression among bipolar patients who have those predictors.
Keywords: Aggressive behaviour, Bipolar disorder, Ethiopia.

Prevalence of Depression and Associated Factors Amon G Somali Refugee at Melkadida Camp, Southeast Ethiopia: A Cross-Sectional Study.

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Background: Psychological distress, psychosomatic complaints and clinical mental disorders such as depression and post-traumatic stress disorder are highly prevalent among refugees than otherpopulations. Even though there were several studies done on mental health of refugees globally, there is very few in Ethiopia regarding the mental health of these vulnerable populations. Thus we aimed at determining the prevalence of depression and identifying determinants of depression among refugees.

Methods: A community based cross-sectional multistage survey with 847 adult refugees was conducted in May 2014 at Melkadida camp, Southeast Ethiopia. Data were collected by face to face interviews on socio demographic by using structured questionnaire, level of exposure to trauma by Harvard Trauma Questionnaire and depression symptoms by using Patient Health Questionnaire. Data entry and clearance were carried out by EpInfo version 7 and analysis was carried out by Statistical Package for Social Sciences version-20 software package. Data was examined usingdescriptive statistics and logistic regression, odds ratios and 95 % confidence intervals.Result: Over one third (38.3 %) of respondents met the symptoms criteria for depression. Gender, marital status, displaced previously as refugee, witnessing murderer of family or friend, lack of house or shelter and being exposed to increased number of cumulative traumatic events were significantly associated with depression among Somali refugees in Melkadida camp.

Conclusion: The study revealed a relatively high prevalence of depression episode among refugees. Being female, divorced, deprived of shelter and witnessing the murder of family are most determinants of depression in refugees. Strengthening the clinical set up and establishing good referral linkage with mental health institutions is strongly recommended.

Keywords: prevalence, depression, refugee

Prevalence and Associated Factors of Common Mental Disorders among Pregnant Women in Debrebirhan Town, North Showa Zone, Amhara Region, Ethiopia, 2014.

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Introduction: In low- and lower-middle income countries about one in six pregnant women are experiencing antenatal common mental disorders (CMD).

Objective: To assess prevalence and associated factors of common mental disorders among pregnant women in Debrebirhan Town, North Showa Zone, Amhara region, Ethiopia, 2014.

Methods: Community based cross-sectional study was employed among 569 study subjects. Data was collected using face-to-face interviews with Amharic version of Self Reporting Questionnaire (SRQ-20) from seven selected kebeles. Kebeles were selected by simple random sampling and individuals were selected using cluster sampling. Crude Odds Ratio (COR) and adjusted Odds Ratio (AOR) was analyzed using bivariate and multivariable logistic regression analysis and the level of significance for association was determined with 95% CI and at P- value < 0.05.

Result: A total 557 study participants were completed the interview and the prevalence of antenatal common mental disorder was found to be 45.2%. Loss of loved one (AOR=1.97; 95% CI: 1.19-3.27), history of chronic medical illness (AOR=6.57; 95% CI: 2.17-19.94), Unwanted pregnancy (AOR=2.13; 95% CI: 1.15-3.95), nulliparity (AOR=8.71; 95% CI: 1.58-47.94), one or less ANC consultations (AOR=0.22; 95% CI: 0.08-0.64), two-three ANC consultations (AOR=0.30; 95% CI: 0.11-0.83) and current obstetric complications (AOR=4.45; 95% CI: 2.21-8.99) were important factors significantly associated with antenatal common mental disorder.

Conclusion: The prevalence of antenatal common mental disorder (CMD) was high in this study that shows antenatal CMD is significant public health issue that requires a great emphasis. So, early screening and intervention for antenatal CMD should be integrated in primary health care and antenatal care service settings.

Socioeconomic Status in Mental Health Research: Are We Measuring the Same Thing? Systematic Review.

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Background: The measurement of socio-economic status (SES) is a critical concern in health research because SES is a very important factor for health differences among populations. Inconsistencies exist in the literature in terms of which components of SES influence which health outcomes. Some authors have recommended criteria against which the utility of SES indicators in health research, in general, could be judged. However, no attempt had been made to summarize the existing practice of measuring SES and to make specific comments on the selection of components that measure SES in mental health research. The purpose of this review was to summarize the common practice (s) of measuring SES in mental health research and to discuss on the merits and demerits of the common practices.

Methods: An internet literature search was made on the PubMed using eleven search terms. The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) guideline was followed to select and present the studies retrieved. The inclusion criteria were: authors have reported that they have measured SES to examine its relationship with mental health outcomes, the specific variable (s) measured to reflect SES were clear, and whether authors have used composite scores or not was clear. Year of publication was not considered as criteria for this study.

Results: A total of 278 articles were retrieved covering the years 1968-2015 and 72 articles were selected for critical analysis. Nineteen (26.39%) studies reported to have measured SES when they actually measured a single variable: occupation, education, or income. On the other hand, other 15 studies (20.83%) have used all the three variables at the same time. Still other 19 (26.39%)) studies have combined only income and education, and 13 (18.06%) studies used only education and occupation. Only one study was found to combine only income and occupation. Of the 54 (75%) studies that have used multiple variables, 27 (50%) have used composite scores in their analysis. With the exception of two studies that have used principal components analysis, the issue of weighting in the computation of composite scores was either not mentioned or not considered.

Conclusions and Recommendations: The commonest components of SES in mental health research are income, education, and occupation either in any combination or just one of them. In all cases the term SES has been used. This is undoubtedly confusing because we are not measuring the same construct. Future researchers need to make the specific variables measured and the method of weighting used, if any, when computing composite scores clear.

Prevalence and Correlates of Depression and Anxiety among Patients with Tuberculosis Attending Wolaita Sodo University Hospital and Sodo Health Center, Wolaita Sodo, South Ethiopia, Cross Sectional Study.

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Background: Anxiety and depression are the most frequently and highly occurring mental disorders in Tuberculosis patients. When depression and anxiety co-morbid with Tuberculosis, leads to poor adherence to anti TB medication which is important barrier to global control of the disease & increases the risk of morbidity and mortality from TB diseases.

Objective: The objective of study was to assess prevalence and correlates of depression and anxiety among patients with TB at Wolaita Sodo University Hospital and Sodo Health Center, Wolaita Sodo, Ethiopia.

Methods: Institution based cross-sectional study was conducted in 2015. A total of 417 TB patients, who had regular follow up at Wolaita Sodo University Hospital and Sodo Health Center, Wolaita Sodo, South Ethiopia, were recruited using systematic random sampling technique to assess depression and anxiety and its associated correlates. Depression and anxiety were assessed through face to face interviews by trained psychiatry nurses using the hospital anxiety and depression scale (HADS). Correlates for depression and anxiety were assessed using a structured questionnaire, Oslo social support scale and TB stigma Scale.

Results: The prevalence of depression and anxiety among patients with TB were 43.4 % (181) and 41.5 % (173) respectively. When we adjusted for the effect of potential confounding variables, patients who had co-morbid HIV infection [AOR = 5.90, (95 % CI: 2.34, 15.93)], poor social support [AOR = 18.06, (95 % CI: 11.21, 25.45)] & perceived TB stigma [AOR = 10.86, (95 % CI: 10.26, 23.47)] were more likely to have depression as compared to their counter parts. Patients who had co-morbid HIV infection [AOR = 9.61,(95 % CI:3.56, 25.96)], poor social support [AOR = 8.93,(95 % CI: 5.01,15.94)], perceived TB stigma [AOR = 3.11,(95 % CI:1.78,5.42)], being female [AOR = 1.72 (95 % CI: 1.06, 2.95)], current substance use[AOR = 4.88, (95 % CI: 1.79, 13.28)] and being on intensive phase of TB treatment [AOR = 1.91, (95 % CI:1.08, 3.39)] were more likely to have anxiety as compared to individuals who had no co-morbid HIV infection, good social support, no perceived TB stigma, being male and being on continuous phase of TB treatment respectively.

Conclusion: Prevalence of depression and anxiety was high. Developing guidelines and training of health care workers in TB clinics is useful to screen and treat depression and anxiety among TB patients.

Prevalence of Common Mental Disorder and Associated Factors among HIV Infected Individuals at HIV Care and Support Clinic of Debre Markos Referral Hospital, 2014.

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Background: The presence of HIV/AIDS increases the risk of development of mental disorders and the presence of mental illness affects disease progression. The resulting co morbidity complicates help-seeking, diagnosis, quality of care provided, treatment and its outcomes, and adherence. Despite the fact that developing countries carry huge burden of both HIV/AIDS and mental illness, no data about the co-occurrence/link and factors associated is available in local setting. The findings of this study might add a body of knowledge about the prevalence rate of common mental disorder and factors associated among HIV/AIDS infected individuals in Debre Markos Referral Hospital.

Objective: the aim of this study was to assess the prevalence of common mental disorders and associated factors among Patients Receiving HIV Care at ART Clinic of Debre Markos referral Hospital, 2014.

Method: An institution-based cross sectional study was conducted. A total of 412 clients were included in the study. A face-to-face interview with the Amharic version of the Self Reporting Questionnaire (SRQ) was used among participants selected by systematic sampling. Ethical clearance was obtained from Institutional Review Board of Debre Markos University. Informed consent was obtained ensuring privacy and confidentiality throughout the data collection process. The collected data were coded, entered and analyzed using EPI data and SPSS version 16 software packages. The association between variables was analyzed using logistic regression.

Result: A total of 412 HIV infected individuals were participated, yielding a response rate of 95.1%. Mean age was 37.9 years ± 10.05 years. Hundred (24.3%) of participants were positive for common mental disorder. Significant associations were found for common mental disorders like past psychiatric illness (AOR=5.16, 95% CI 1.05, 25.1), ART regimen EFV based (AOR=0.05, 95%CI (0.01, 0.24)), marital status, HIV/AIDS disclosure and perceived stigma.

Conclusion and Recommendation: There was a significant burden of mental illness among HIV-infected individuals in this setting. Clinicians should give due attention for divorced HIV patients, for mental health prevention education, screening, treatment regimen with TDF-3TC-EFV should further studied and should be preferable regimen. Patients should be encouraged to disclose for close relatives/ spouse, case managers and patients education and awareness creation to reduce stigma should be strengthened.

Abs 144

Khat Use in People Living with HIV: a Facility-based Cross-sectional Survey from South West Ethiopia.

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Background: Khat is an evergreen plant with leaves containing the amphetamine-like compounds cathinone and cathine. Many people in the Horn of Africa use khat on a regular basis. Adverse health and social consequences of khat use have been described but little is known about the use of khat in people living with Human Immunodeficiency Virus (PLHIV) in Ethiopia. This study aimed to assess the prevalence of khat use and factors associated with khatuse among PLHIV who are in contact with HIV services in a hospital in south-west Ethiopia.

Methods: A cross-sectional study was conducted among 389 PLHIV who attended HIV services at Jimma University Specialized Hospital in September 2012. A structured questionnaire, translated into the local languages, was used to ask about the frequency of khat use and potential risk factors and consequences of khat use in this patient group. Logistic regression analysis was used for bivariate and multivariable analysis.

Results: The overall prevalence of current khat use among people living with HIV was 23.0%. The prevalence was 18.3% in females and 33.6% in males. Christians were less likely to use khat when compared to Muslims (adjusted Odds Ratio (aOR) 0.26, 95% CI = 0.13, 0.55). There was a positive association between khat use and mental distress (aOR 1.84, 95% CI = 1.01, 3.36), smoking cigarettes (aOR 21.21, 95% CI = 7.19, 62.51), alcohol use disorders (aOR 2.16, 95% CI = 1.10, 4.21), CD4 count ≤200 cells/mm3 (aOR 3.46, 95% CI = 1.60, 7.50) and missing at least one dose of antiretroviral medication in the preceding month (ART) (aOR 4.2, 95% CI = 1.80, 5.75).

Conclusion: In this study there was a high prevalence of khat use among people living with HIV which was associated with poorer adherence to ART. There is a need to adapt and evaluate feasible and acceptable interventions to reduce khat use in people living with HIV.

Keywords: Khat use, HIV, Mental distress, Ethiopia, 'ART adherence', Substance use disorder, Sub-Saharan Africa

The Hidden Burden of Shisha (Water Pipe) Use among Adolescents of Ethiopia: A Mixed Method Study in Hawassa and Jimma Town, Ethiopia.

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Background: Shisha use accounts for a significant and growing share of tobacco use globally. In Ethiopia, its spread is rising at alarming rate among adolescent population of the country. However the magnitude, pattern, and its predictors are not well understood in Ethiopia. Therefore, this study was aiming to describe the magnitude and associated factors of shisha smoking among adolescents in Ethiopia.

Method: A mixed method study using cross sectional survey was employed among school adolescents from grade 9th – 12th and in the age category of 13 – 19 years. The quantitative study was carried out to determine the magnitude of Shisha smoking among adolescents. For these, 1704 students were selected from a total of 12 public and private high schools from Hawassa and Jimma town, Ethiopia. A two-stage stratified sampling technique was employed to select the schools and the final sampled students were enrolled using systematic random sampling by using list of students from school register as a sampling frame. Data were collected by using self-administered global youth tobacco survey questionnaires and descriptive statistics, bivarate and multivariate analysis were done. The qualitative study was targeting to describe the pattern, perception and their attitude towards shisha smoking among adolescents.

Result: The prevalence of Shisha smoking among adolescents were found to be 12.6%, 95% CI (11.2 – 14.2), which is 20.6% among boys and 5.3% among girls. Among the Shisha users, 73.2% of them are also current smokers of cigarette. In the multivariate analysis, being male (AOR = 2.57, 95% CI 1.67 – 9.84), alcohol use (AOR = 3.77, 95% CI 1.34 – 14.28), khat chewing (AOR = 2.3, 95% CI 1.63 – 8.36), parent smoking (AOR = 9.01, 95% CI 3.48 – 36.1), peer smoking (AOR = 7.5 , 95% CI 3.1 – 17.68), and not discussing in the class about danger of smoking (AOR = 5.95, 95% CI 2.42 – 26.04) were seen significantly associated with shisha smoking among adolescents.

Conclusion and Recommendations - the burden of Shisha smoking among adolescents is increasing in its spread, and it is unacceptably high. Therefore the government of Ethiopia should legislate, enact, and enforce laws that control tobacco spread in any form. Moreover adolescents of the country should be enriched with the knowledge on the dangers of tobacco use.

Keywords: tobacco use, Shisha smoking, adolescents, waterpipe, global youth tobacco survey

Abs 146

Substance Use and its Association with Students' Academic Performance among Wolaita Sodo University Students, 2015.

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Introduction: Use of psycho active substances like khat, tobacco products and alcohol have become major public health and socio-economic problems worldwide.

Objective: this study was aimed at assessing the magnitude of substance use and its association with academic performance among Wolaita Sodo university regular students.

Methods: cross sectional study design was conducted among Wolaita Sodo University students. A sample of 747 students were selected by using cluster sampling technique. Data were examined using descriptive statistics and linear regression, regression coefficient (B) and 95% confidence intervals.

Result: total of 725 participants were involved in the study. The 12 months prevalence of substance use was 28.6%. The most frequently consumed substance by the students was alcohol, followed by khat and tobacco products respectively. The variables with significant association to academic performance were; male gender (B= 0.35, 95% CI: 0.19, 0.52), urban residence (B= -0.19, 95% CI: -0.32, -0.06), current smoking (B= -0.27, 95% CI: -0.46, -0.09), chewing khat at least weekly (B= -0.24, 95% CI: 0.44, -0.04), having intimate friend who uses substance (B= -0.17, 95% CI: -0.31, -0.03), and drinking alcohol in daily base (B= -0.51, 95% CI: -0.79, -0.23).

Conclusion: Substance use was high among Wolaita Sodo University students. Male gender was significantly and positively associated with good CGPA score while current smoking, khat chewing, drinking alcohol, having intimate friend who uses substance, and urban residence were significantly associated with poor CGPA score. The high prevalence of substance use and its association with poor academic performance demands the universities to have a good control of substance and to implement youth friendly activities to bring behavioral change on their students

Anxiety and Associated Factors among Prisoners in North West of Amhara Regional State, Ethiopia.

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Background: Mental illness is more common among the prison population than the community is. However, the attention given to mental health illness is very low in developing countries in general and for prisoners in particular. Therefore, the aim of this study was to determine anxiety and associated factors among prisoners in prisons of North West, Amhara regional state.

Methods: Institutional based cross-sectional study was employed from February to March 2015 by taking a sample size of 700 prisoners. The multistage simple random sampling method was employed to select three prisons from 10 prisons found in the North West region. Generalized Anxiety Disorder 7-item (GAD-7) was used to assess prisoners' anxiety. The receiver- operator characteristic (ROC) curve was used to estimate the cutoff point with high sensitivity and specificity. Structured and pretested interview administered questionnaire was used to collect the required information. Data were checked, coded and entered by using Epi Info version 7 and analyzed using R version 3.2.0. Bivariable and a multivariable logistic regression model were fitted to identify factors associated with anxiety. Odds ratio with its 95% confidence interval was used as a measure of association. Akaike's Information's Criterion (AIC) was used to check model fitness.

Result: Data were actually collected from 649 prisoners. The overall prevalence of Anxiety was found to be 36.1% (95%CI: 32.7, 39.9). The odds of Anxiety is 2.49(95%CI: 1.38, 4.55) times higher among prisoners who were lead happy life before they become prisoner. However, the odds of anxiety is 0.38 (95%CI: 0.15, 0.92) times lower among current non-smokers, D/Tabor prisoners 0.11 (95%CI: 0.06, 0.20) and Gondar prisoners 0.43 (95%CI: 0.28, 0.67).

Conclusion: The prevalence of anxiety is found to be very higher among prisoners in North West of Amhara regional state. The odd of Anxiety is higher among prisoners who were lead happy life before they become a prisoner and among current smokers. However, it is lower among D/tabor and Gondar prisoners. Therefore, exclusive intervention is crucial for these neglected citizens by focusing on the identified risk factors.

Keywords: Anxiety   cross-sectional study Prisoner

Neonatology, Infant, Child and Adolescent Health

Abs 148

Individual and Community Level Factors Associated with Defaulting of Immunization among 12-59 Months Children in Ethiopia: A Multilevel Modeling Analysis of Using 2011 Ethiopia Demographic and Health Survey Data.

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Introduction: In 2012, 22.6 million children under one year of age who received first dose of (DPT1) did not receive third dose of (DPT3) vaccine. Out of this 70% of children live in ten countries and Ethiopia is one of those countries.

Objective: The aim of this study was to explore individual and community level factors associated with defaulting of immunization among 12-59 months children in Ethiopia Demographic and Health Survey Data of 2011.

Methods: The source of data for this study was 2011 Ethiopia Demographic and Health Survey Data (EDHS 2011); particularly the child recode. The EDHS 2011, used a population based cross sectional survey. It was a two-stage cluster sampling designs with urban-rural as strata. The current study focused on a sample of 6,666 weighted children living in 592 clusters was included. Multilevel model assumes dependency between observations. Possible model diagnostic tests were addressed while building the model. It includes; checking confounding and interaction effect, checking goodness of fit test, treating multicolinearity problem, assessing predicting ability of the model and Akaike's Information Criteria were used for model comparison.

Results: The current study found that more than three-fourth (78%) of children among age group of 12-59 months were missed one or more doses of recommended vaccine. Adjusted multilevel regression model found that perceiving distance as a problem to reach a health facility were 24% [AOR=1.24; 95% CI: 1.01, 1.53] and mothers non-exposure to media were 52% [AOR=1.52; 95% CI: 1.21, 1.93] higher odds of defaulting of child immunization as compared with those mothers no problem related with distance and exposed respectively. With regard to the community-level factors, communities living in Affar region were 8.7 times [AOR=8.66, 95% CI: 4.32, 17.38] and in Oromia region were 3.8 times [AOR=3.85, 95% CI: 2.31, 6.43] higher odds of defaulting of child immunization as compared with communities living in Addis Ababa, when other individual and community level factors were controlled simultaneously

Conclusion: According to this study, defaulting is 8 times higher in Ethiopia as compared with WHO accepted level. There are both individual and community-level factors that had significantly association with defaulting of child immunization. Thus, efforts to decrease the proportion of defaulter rate better to focus both on individuals and communities.

Keywords: Community-level factors, individual-level factors, two-level mixed effects, cluster

Prevalence and associated factors of intestinal parasites among school children in Arba Minch town, Southern Ethiopia.

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Background: Intestinal parasitic infections are still quite common in developing countries including Ethiopia, particularly in children. They are mostly associated with unsafe and low quality of drinking water, poor personal and environmental sanitation. Thus, the objective of this study was to assess the prevalence and determinant factors of intestinal parasites among school children.

Methods: A cross sectional study was conducted in March, 2014, among 498 students selected from three governmental elementary schools in Arbaminch- town, Southern Ethiopia using stratified multistage sampling method. Structured questionnaire was used to identify environmental, socio demographic and behavioral factors. Stool specimens were collected from all study subjects and were examined for intestinal parasites using direct smear (mount examination) and Formal-ether concentration techniques. Finally, data entry and analysis was done using Epi-info and SPSS statistical soft ware respectively. Bivariate and multivariate logistic regression analyses was done. P value less than 0.05 was considered as statistically significant.

Results: A total of nine parasites were detected .The overall prevalence of intestinal parasites was 27.7% (95% confidence interval (CI): (23.8-31.6%)). The predominant parasite was *E.histolytica/dispar* 64(12.9%) followed by *A.lumboricoids* 53(10.6%), *H.nana* 21 (4.2%) and *G.lamblia* 21 (4.2%). Hand washing practice before meal [AOR = 5.7; 95% CI (3.4, 9.7)], nail hygiene AOR= 2.6 ; 95% CI (1.5, 4.4)], and children's mother educational level [A OR =3.5; 95% CI (1.01, 11.4)] showed statistically significant association with high rates of intestinal parasitic infections.

Conclusion and Recommendations: The prevalence of intestinal parasites is high in the study area among school children .Thus, it indicates the need of interventions like health education regarding to personal hygiene and mass treatment.

Keywords: Intestinal Parasites, School Children, Prevalence, Determinant Factors, Ethiopia

Low Birth Weight among Neonates Born at Felege Hiwot Referral Hospital, North West Ethiopia. *Teje Adane and Berihun Assefa Dachew.*

Background: Low birth weight (LBW) is one of the public health problems in the globe and it is an indicator of the health of the newborn survival and the mother's nutrition and health status. LBW newborn has a greater risk of illness or death. This study was aimed to determine the prevalence and factors of associated with low birth weight among mothers who gave birth at Bahir Dar Felege Hiwot referral hospital.

Methods: A cross-sectional facility based study was conducted from March 18 to May 18 / 2015. A total of 662 mothers were selected using systematic sampling and included in the study. Data were collected by using an interviewer administered questionnaire, medical records and measurements. The data was checked for completeness, coded, and entered and analysis using SPSS version 20 software and anthropometric measurements explained by using WHO standard guidelines. Binary and multivariable logistic regression was used to identify factors associated with low birth weight.

Results: The prevalence of low birth weight was found to be 11.6%. Age of the mothers 20-34 years [AOR= 0.4(95% CI: 0.19—0.93)], low income [AOR=2.6 (95%CI: 1.16—6.05)], gestational age < 37 weeks [AOR=18.2 (95% CI: 9.26—35.94)], MUAC<23 cm [AOR =3.4 (95%CI: 1.38-8.60)] and pregnancy induced hypertension [AOR=6.5 (95%CI: 3.06-14.00)] were factors associated with LBW.

Conclusion: The prevalence of Low birth weight was found to be high. The age of the mother, income, preterm pregnancy, MUAC < 23 cm and induced hypertension were independently associated with low birth weight. Nutritional counseling to pregnant mothers and early detection and management of pregnancy induce hypertension is recommended.

Keywords: Low birth weight, Prevalence, Northwest Ethiopia

Assessment of Factors Associated with Low Immunization Coverage in Children 12 to 23 Months, 2015, Enemay Woreda, North-western Ethiopia.

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Introduction: Immunization is an important means of controlling diseases and has been considered as one of the most cost effective health intervention. Study was conducted to assess child immunization coverage and identify influencing factors in Enemay district, East Gojjam Zone, Amhara region, 2015.

Methods: We conducted community-based cross-sectional study on 625 children aged 12–23 months, Enemay district. A systematic random sampling method was used and data were collected using a pre-tested semi-structured interviewer administered questionnaire. Data were entered into EPI info version 3.5.1 coded and analyzed using SPSS 16.0 versions.

Result: A total of 625 mothers/care givers were interviewed. The mean age of respondents was 30.5 ($SD \pm 6.4$) years with a range of 18-49 years. Whereas the mean age of children was 16.9 ($SD \pm 3.7$) months. According to the mother's recall 527(84.3%) of children were fully vaccinated and 62(9.9%) children were not vaccinated. But using vaccination card fully immunized children were 397(63.5%) and not vaccinated children rise to 166(26.6%). Mothers'/caregiver's ability to recall at least one of child vaccines [AOR (95%) =2.4(1.6-3.5)] and convenience of immunization sessions [AOR (95%) = 1.8(1.04-2.98] were factors associated with fully immunization.

Conclusion and Recommendations: Fully vaccination coverage among children aged 12–23 months remains very low in the district. Mothers'/caregiver's ability to recall at least one child vaccines and convenience of immunization sessions were factors associated with fully immunization status of children. Therefore; improving awareness of mothers/care givers on vaccination and selection of immunization session with agreement is mandatory.

Keywords: Fully Vaccination Coverage, Associated factors

Anaemia and Malaria among Children 6 to 59 Months Old in South Central Ethiopia: A Community Based Study.

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Introduction: Malaria and anaemia are common cause of childhood illness in developing world. Community based data on spatial distribution and association between malaria and anaemia could be useful for devising effective strategies to control malaria and anaemia.

Objectives: To assess anaemia occurrence, geographical distribution and its association with malaria among children 6 to 59 months old in Adami Tulu district south central Ethiopia.

Method and Materials: This is an on-going cohort of 3011 children enrolled since August 2014. Here, we present a preliminary finding from 4 months follow up (August to December 2014). Baseline data on households' geographic coordinates, socio-demographic and malaria prevention practices were collected. We did weekly home visit in addition to self report to find fever cases, and malaria was diagnosed using rapid diagnostic tests. Haemoglobin (HB) concentration data was collected in December 2014, and children with HB < 11 g/dl were classified as having anaemia. Pure spatial analysis was done to identify clustering of anaemia and malaria using SatScan v9.4. Logistic regression model was fitted to find out predictors of anaemia.

Results: The prevalence of anaemia was 28.2% (843 of 2992 children with complete HB data) with mean HB value of 11.6 g/dl (95 % CI 11.5 - 11.7 g/dl). Overall malaria incidence rate was 7.4 (95 % CI 5.5 - 10.0) episodes per 10, 000 person weeks of observation, and malaria incidence rate was 2 times higher among children having anaemia. P. _falciparum_ accounts for 24 of 44 (54.5%) of all malaria cases. The risk of anaemia was higher among children less than 36 months. Malaria episode was significantly associated with anaemia in crude analysis but not observed when adjusted for maternal educational status. Spatial clustering of malaria and anaemia was observed at household level.

Conclusion: This study showed high prevalence of anaemia and malaria incidence among children aged 6 to 59 months. Both malaria incidence and anaemia showed spatial clustering.

Abs 153

Assessment of Vaccination Status and Factors Associated with Non-Immunization in Dendi District of West Shewa Zone, Oromia, Ethiopia, 2015.

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Introduction: Vaccination has been shown to be one of the most effective public health interventions worldwide, through which a number of serious childhood diseases have been successfully eradicated. Thus, the main focus of this study was to assess fully vaccinated and associated factors among children aged 12–23 months in Dendi district of Oromia Region west Shewa zone, Ethiopia.

Methods: A cross-sectional community based and Institutional study was conducted in 7 rural and 1 urban kebeles from May to August 2015. Quantitative data were collected from care givers. 12–23 months aged children representative households were collected using experienced data collectors. Data were coded and entered into Epi info version 7.1.1 and further analyzed with SPSS 20.0 versions. Bivariate and multivariate logistic regression analyses were done to assess factors associated with vaccination status of children. Those predictor variables with p-value < 0.05 were considered significantly associated with the outcome variable

Results: A total of 711 care givers who have 12-23 month aged children with a response rate of 96.6% were participated in the study. It was showed that 328(46.13%) of children aged 12–23 months were fully vaccinated by card and mother's recall. Being monthly Income of the household greater 451ETB/month (AOR : 2.59, 95% CI: 2.14-4.05), Received at least a single dose of any Vaccine (AOR : 2.59, 95% CI: 2.14-4.05) Educational Status of the Mother (AOR:1.1, 95% CI, 1.08 -1.3), Institutional Delivery (AOR:1.23,95% CI, 1.03 -1.79), Age of mother below 18 years of age (AOR:1.4,95% CI, 1.2-1.95) were those factors significantly associated with the complete immunization programme. There was no statistical significant difference in the socio-demographic characteristics of both vaccinated and unvaccinated children's in the district.

Conclusion and Recommendation: Fully vaccination coverage among children aged 12–23 months remains very low compared to the administrative coverage in the district. Health institution delivery, Possession of communication facilities, Educational status of mother's those complete primary and above level of education were found to be factors those improve fully child vaccination status of children in the district than their counterparts. Therefore both HEWs and other staff members of health centers should be improve awareness of the care givers by designing proper health education targeting the mother on vaccination is critical important.

Keyword: Expanded Immunization programme (EPI), Dendi District, Immunization

Prevalence of Diarrheal Diseases and Related Factors in Under Five Children among Health Extension Model and Non Model Families in Gozamin District, Northwest Ethiopia, 2015.

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Background: Globally, diarrhea is the second leading cause of mortality and morbidity among children under the age of five years. According to the World Health Organization (WHO) and UNICEF, there are about two billion cases of diarrheal disease worldwide every year. In Ethiopia, diarrhea plays great roll for the increasing of child mortality and it attribute 20%.These problems are clear at East Gojjam Zone Dejen district where childhood diarrheal disease prevalence is 23.8%. The aim of this study was to assess prevalence of childhood diarrheal diseases and associated factors in the rural community of Gozamin district, northwest Ethiopia, 2015.

Method: A community based comparative cross-sectional study design was employed in 2015 at Gozamin district. Multi-stage sampling technique was employed to select 159 model and 317 non-model households that had at least one under-five children. Data was collected using structured questioner by trained data collectors. A summery descriptive, binary and multivariate logistic regression was computed. Possible associations were measured using odds ratio at 95% CI and data were presented using appropriate tables.

Result: The two weeks diarrhea prevalence in under-five children was16.5% on which the prevalence among health extension model and non-model households were 15.5% and 17%, respectively. The independent predictors of childhood diarrhea were the following: maternal occupation, number of under five children in the house and sex of the index child were the risk factors of diarrheal diseases while water source of the family, method of water transportation, water storage cover, refuse disposal method and separate house use for animals live were the preventive factors of childhood diarrheal diseases.

Conclusion: Diarrheal disease in under-five children is high in this district. Therefore, strategies, and interventions should be further strengthened.

Magnitude and Associated Factors of Diarrhea among Under-Five Children in Laelay-Maychew District, Northern Ethiopia: A Cross-Sectional Study.

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Introduction: diarrheal diseases are the leading cause of preventable death, especially among children under-five in developing countries. Worldwide and nationwide (Ethiopia) diarrheal disease is the second leading cause of death in under-five year children.

Objectives: The aim of this study was to determine the magnitude and associated factors of under-five diarrhea in Laelay-Maychew district.

Methods: A community based Cross sectional study was conducted from February 01- February 15, 2015. A two stage stratified sampling method was done to select the eligible households. Data was collected by trained data collectors using standard questionnaire and observational check list tested previously which was prepared based on EDHS and WHO core questionnaires related to diarrhea. Data was entered in to a computer using Epi Info 3.5.3 software and exported to SPSS V.21 statistical software for further analysis. Binary Logistic regression analysis was used to determine OR and 95% CI. Variables with p-value <0.2 in the bivariate analysis were entered in to multivariate analysis and variables with p-value <0.05 in the final model were considered as significant.

Result: The two weeks period magnitude of diarrhea among under-five children was 17.7% [95% CI (14.5-20.8)] which was associated with children being rural residence [AOR: 1.52, 95% CI(1.26,4.87)], female child [AOR: 3.85, 95% CI(1.8,8.22)], education of mothers [AOR: 0.02, 95% CI(0.01,0.12)], households with improved water source [AOR: 0.18, 95% CI(0.02,0.39)], households with ≤20L per capita per day water consumption [AOR: 1.53, 95% CI(1.12,1.97)], and mothers who wash their hand with water and soap/ash [AOR: 0.52, 95% CI(0.24,0.42)].

Conclusion and Recommendation: The two weeks period magnitude of under-five diarrhea was high and residence, educational status of the mothers, water source of the households, per capita water consumption of the households, and hand washing methods of the mothers/care takers were significant predictors. So, Females' education at least to complete primary school, constructing improved water source and giving health education to the community about hand washing methods to use soap at recommended times were recommended.

Keywords: Under five children, Predictors of diarrhea, Ethiopia

Childhood Mortality; Trends and Determinants in Ethiopia from 1990 to 2015: A Systemic Review.

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Background: Ethiopia is a low-income country in the drought prone Horn of Africa with over 94 million people. The nation is one of the high burden countries in childhood mortality. Millennium Development Goal 4 calls for reducing under-five mortality rate by two-third between 1990 and 2015. As global momentum and investment for accelerating child survival grow, monitoring progress at the global and country levels has become even more critical. Generating accurate estimates of under-five mortality poses a considerable challenge because of the limited data available for many developing countries like Ethiopia. Therefore the aim of this systematic review was to assess the trend of childhood mortality and its determinants from 1990 to 2015 in Ethiopia.

Methods: A computer based literature search was conducted in the databases of HINARI, Ovid databases, EBASE, Medline, African Journals Online, Google Scholar, the Cochrane Library and national medical journals and documents. The literature search was further strengthened by searching the websites of major publishers and by searching the reference lists of retrieved articles. No study design limit was imposed on the search. Documents on original research conducted entirely or in part in Ethiopia, included a primary outcome variable of childhood mortality, written in English and published between 1990 and 2015 was identified. Ascertained relevant articles were appraised and the findings were integrated into a systematic review.

Result: Childhood mortality has declined in Ethiopia over the past 15 years and this decline is more pronounced over the last 10 years. Under-five mortality is 21% lower now than it was five to nine years ago, with the pace of decline in infant mortality (25%) somewhat faster than for child mortality (18%). The corresponding decline in neonatal and post neonatal mortality over the same period was 29% and 21% respectively. Parental socio demographic, socioeconomic and behavioral variables; nutritional, environmental and sanitary factors have been identified to affect child survival.

Conclusion: Ethiopia has achieved the millennium development goal 4 to cut the mortality rate for children under the age of five. Among proximate determinants maternal age at first birth, preceding birth interval, marital status of the mother, birth order, breast feeding, health care and family income are important determinants of childhood mortality.

Abs 157

Magnitude of Anemia and Associated Factors among Pediatric HIV/AIDS Patients Attending Zewditu Memorial Hospital (ZMH) Art Clinic, Addis Ababa, Ethiopia.

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Background: Anemia is one of the most commonly observed hematological abnormalities and an independent prognostic marker of HIV disease. The aim of this study was to determine the magnitude of anemia and associated factors among pediatric HIV/AIDS patients attending Zewditu Memorial Hospital (ZMH) ART Clinic in Addis Ababa, Ethiopia.

Methods: A cross-sectional study was conducted among pediatric HIV/AIDS patients of Zewditu Memorial Hospital (ZMH) between August 05, 2013 and November 25, 2013. A total of 180 children were selected consecutively. Stool specimen was collected and processed based on standard operating procedures whereas hemoglobin and CD4+ T cell counts were determined by Cell-Dyn1800 and FACSCalibur, respectively. A structured questionnaire was used to collect data on Socio-demographic and associated risk factors. Data were entered into EpiData 3.1.1. And analyzed using SPSS version 16 software. Logistic regressions were applied to assess any association between explanatory factors and outcome variables. P values < 0.05 were taken as statistically significant.

Results: The total prevalence of anemia was 22.2% where 21(52.5%), 17(42.5%) and 2(5.0%) had mild, moderate and severe anemia. There was a significant increase in severity and prevalence of anemia in those with CD4+ T cell counts below 350 cells/μL ($P<0.05$). Children with advanced immunosuppression had moderate and severe anemia while mild anemia was high in patients with mild immunosuppression. Majority (70%) of the anemic patients were infected with intestinal parasites ($P<0.05$). Comparatively anemia was more significantly prevalent and severe in HAART naïve patients (31.7%) ($P<0.05$). Having intestinal parasitic infections (AOR=2.7, 95%CI, 1.1-7.2), lower CD4+ T cell count (AOR=3.8, 95%CI, 1.6–9.4) and being HAART naïve (AOR=2.3, 95%CI, 1.6-9.4) were identified as significant predictors of anemia. **Conclusion:** Anemia was more prevalent and severe in patients with low CD4+ T cell counts, infected with intestinal parasites/helminthes and HAART naïve patients. Therefore, public health measures and regular follow up are necessary to prevent anemia and intestinal parasitic infections in order to make pediatric HIV/AIDS patients' life better.

Keywords: Anemia, Pediatric HIV patients, Ethiopia

Non-Communicable Disease

Abs 158

Prevalence of Oral Health Related Illness and Associated Factors among Working Adults in Addis Ababa, Ethiopia; Longitudinal Survey with Cross-Sectional Baseline Assessment.

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Problem Statement: Oral health is an important contributor to overall health for individuals and the population. Oral disease, such as dental caries, periodontal disease, tooth loss, oral mucosal lesions, oropharyngeal cancers, oral manifestations of HIV/AIDS, necrotising ulcerative stomatitis (noma), and orodental trauma, is a serious public-health problem and it is the fourth most expensive disease to treat. According to WHOs' oral health data base of Ethiopia 71% of the population among age group of 35-44 years are affected by oral disease. The percentage of population affected with dental caries in the age group of 21-24 years and 35-44 years is almost similar having a prevalence of 2.6 and 2.7% respectively. In spite of these facts, in Ethiopia, prevention and treatment of oral health related illnesses received little attention.

Objectives: The main objective of this study is to determine the magnitude of oral health related illness and factors associated with oral health problems among Bank employees and Teachers in Addis Ababa, Ethiopia.

Methods: This study used the secondary data of Non Communicable Diseases Survey among Bank employees and Teacher in Addis Ababa, Ethiopia in 2010. The parent study was conducted among permanent employees of the CBE and teachers in government schools in Addis Ababa. The study sites were Commercial Bank of Ethiopia (CBE) and public schools in Addis Ababa. Sample size for the survey was calculated using WHO STEPS approach. Multistage sampling was used and stratification by institution was employed. A sample proportional to the population of each institution was distributed. After thorough cleaning for incomplete records available data of 2144 individuals were used for this study extracted from 2010 NCD surveillance data set carefully based on the proposed study objectives. The extracted data were analyzed using SPSS 20.0.

Result: The prevalence of oral health related illness among 2144 study subjects is found to be 16.4% [95% CI: 0.15 – 0.18] (three hundred fifty two). This proportion of the participants had complained to have any pain or discomfort of their teeth, gums and/or mouth. Persons in older age categories (i.e. 55 years and older) were about 1.7 times more likely to have oral health related illness than those in the younger (≤ 24 years) age category (AOR= 1.738; 95% CI: 1.051 –

2.874). Study subjects from Commercial Bank of Ethiopia were found 1.4 times more likely to develop oral health related illness than those study subjects from school (AOR= 1.405; 95% CI: 1.037 – 1.903). Similarly, Study subjects who found to have Mental Distress were 1.5 times more likely to have oral health related illness than those who don't have (AOR= 1.552; 95% CI: 1.105 – 2.180) (P-value<0.05).

Conclusion: Oral health illness prevalence among bank and school employees is high. Therefore, more effort should be employed towards healthy practices like regular health care visit, oral hygiene practices and frequent screening for co-morbidities like mental distress as they significantly hinder the oral health of an individual.

Cervical cancer: Ethiopia's Outlook.

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Globally, cervical cancer accounted for an estimated 528,000 new cancer cases worldwide and for 266,000 deaths in 2012. In Ethiopia, 35.9 new cases of cervical cancer are diagnosed and 22.6 die from it, per 100,000 women annually. The objective of this review was to demonstrate Ethiopia's stance on incidence, mortality, factors associated, screening and treatment of cervical cancer in Ethiopia.

There are many factors associated with cervical cancer in Ethiopia such as Human Papilloma Virus (HPV), cultural factors, Poverty, Co-infection and lack of awareness. Ethiopia has no standard policy or protocol for cervical cancer screening rather it is patchy or inconsistent.

Ethiopian women typically present for cancer care at a late stage in the disease, where treatment is likely ineffective. To produce significant decrease in incidence and mortality, barriers should be addressed as well research studies should be strengthened in the areas of cervical cancer.

Keywords: Cervical Cancer, Screening, Outlook, Ethiopia

Abs 160

Lack of Maternal Formal Education and Ancylostomiasis are Associated with Anemia during Pregnancy in West Ethiopia: A Cross-Sectional Study.

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Background: Anemia is a global public health problem associated with increased morbidity and mortality during pregnancy. However, despite the wider scope of the problem, there is paucity of information in Ethiopia on its magnitude and correlates across the regions. The main objective of this study was to assess the prevalence of anemia and associated factors among pregnant women attending antenatal care clinic at Aira Hospital in West Ethiopia.

Methods: A facility based cross-sectional study was conducted on 712 pregnant women from January 01 to February 28, 2014. All eligible pregnant women who came for Antenatal care services during the study period were interviewed using structured pretested questionnaire. The stool samples were checked for intestinal parasitic infection and hemoglobin concentration was determined using cyanmethemoglobin method. Odds ratio along with 95 % Confidence interval was estimated to identify factors associated with anemia using multivariable logistic regression with backward stepwise elimination method. The level of statistical significance was declared at p – value of ≤ 0.05.

Results: The magnitude of anemia was 15.6%, 95 % CI (13.1%, 18.5%). Anemia was more common among mothers who have no formal education [(AOR =2.77; 95 % CI (1.49, 5.16)] compared with their counterparts and among those who were infected with hook worm (ancylostomiasis) during the study period [(AOR = 2.44; 95 % CI (1.41, 4.22)].

Conclusion: Anemia was found to be a mild public health problem among the study participants in the study area. Absence of maternal education and intestinal parasitic infection were significantly associated with anemia during pregnancy. Hence, appropriate nutritional oriented and non-nutritional interventions should be designed to curb the burden of anemia during pregnancy in Ethiopia.

Keywords: Aira, Anemia, Ethiopia, pregnant women

Determination of Prevalence of High Blood Pressure and its Determinants among Adults in Harar Town.

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Background: Hypertension is an important public health problem worldwide. Growing evidence suggests that hypertension constitutes the basis for the cardiovascular disease epidemic in sub-Saharan Africa. The prevention and control of high blood pressure or other cardiovascular diseases has not received due attention in many developing countries. Reliable epidemiological data are useful for the design and implementation of effective strategies for the prevention and control of hypertension. There are, however, limited data on the epidemiology of hypertension and its control in many sub-Saharan African countries. Lack of reliable epidemiological data on high blood pressure is a problem in Ethiopia as a country and in regions of the country too. Similarly, there is no study done on the prevalence of High Blood Pressure in Harar Twon, Eastern part of Ethiopia.

Objective: The objective of this study is to determine prevalence of high blood pressure and its determinants among adults in Harar town to avail the reality to every stakeholder and lay the ground for surveillance interventions from January 1, 20 14 to January 30, 2014.

Methods: Adult males and females, 25–64 years of age residing in Harar town were participated in this study. Data was collected from these participants using structured questionnaire and physical measurements. Population based cross sectional survey was employed using the World Health Organization instrument for stepwise surveillance (STEPS) of chronic disease risk factors. The sample size of this study is determined by using a formula which is used to estimate a single population proportion and the total sample size was calculated according to the World Health Organization recommendation. Logistic regression analysis was performed to determine the risk factors for high blood pressure among the socio-demographic and behavioral characteristics, and physical measurements.

Results: After cleaning the data, 612 of the Harar town study units (out of 717 total sample size) were included in data analysis. These 612 study units were those with all essential variables are completely available. In this study, the prevalence of hypertension in Harar town is 35.9 %. From these hypertensive subjects only 37(16.8%) of them know that they have high blood pressure. This shows that there is a silent epidemic of high blood pressure in Harar town. Moreover, in multivarate analysis, sex (p = 0.011, OR (95% CI) = 1.686 (1.129- 2.516)), age(p<0.0001, OR(95% CI) = 1.031 (1.015-1.049)), history of currently smoking any tobacco products (p =0.004, OR (95% CI)

= 2.280 (1.303-3.992)), BMI (p < 0.0001, OR(95% CI) = 1.095 (1.053-1.138)) and waist circumference (p < 0.0001, OR(95% CI) = 1.048 (1.030-1.066)) were found to be statistically significantly associated with high blood pressure.

Summary Measures: this study has revealed that there is silent epidemic of high blood pressure in Harar town and there are also multiple associated risk factors. Accordingly, we are recommending that immediate interventions should be started urgently to alleviate this problem.

Knowledge and Attitude about Diabetes Mellitus and its Associated Factors among People in Debre Tabor Town, Northwest Ethiopia.

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Background: Diabetes mellitus is recognized as one of the emerging public health problems in developing countries. However, people's knowledge and attitude about diabetes mellitus have not been efficiently investigated in Ethiopia.

Objective: This study was conducted to assess the knowledge and attitude about diabetes mellitus and its associated factors among people in Debre Tabor town, Northwest Ethiopia.

Methods: A community based cross-sectional study design was conducted among people age 18 years and above in Debre Tabor town during June 10 to August 20, 2014. A total of 832 participants were selected by Systematic random sampling technique. Data were collected using a pretested structured Interviewer administered questionnaire and Epi info 6 for data entry and SPSS version 20 for analysis used. Bivariate and multivariate analyses were used.

Results: Among 832 respondents, 408 (49%) participants had good knowledge and 329 (39.5%) participants had good attitude about diabetes mellitus. Educational status (Grade 1-8 AOR=2.6, 95% CI: 1.22-5.22, Grade 9-12 AOR=3.49, 95%CI: 1.68-7.22, and Certificate and above AOR=5.58;95%CI:2.73-11.44), family income per month (501-800Birr AOR=1.59,95%CI:1.07-2.40),801-1450Birr AOR=1.61;95%CI:1.05-2.48, and ≥1451 Birr AOR=2.14; 95%CI:1.36-3.36) and family history of diabetes mellitus (AOR=3.89,95%CI :1.27-11.88) were significantly associated with good knowledge about diabetes mellitus. Educational status (Grade 1-8 AOR =2.53, 95 %CI: 1.24- 5.16, Grade 9-12 AOR=2.17, 95 % CI: 1.08-4.31 and Certificate and above AOR=3. 39, 95 % CI: 1.78-6.47) was significantly associated with good attitude towards diabetes mellitus.

Conclusion and Recommendation:-This study revealed a limited status in good knowledge and low in good attitude about Diabetes Mellitus. Comprehensive community based health education program about diabetes mellitus is necessary to improve this situation.

Keywords: Diabetes Mellitus, Knowledge, Attitude

Outbreak and Surveillance

Abs 163

The Epidemiology of Rubella Disease in Southern Region, Ethiopia 2006-2013.

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Background: Rubella is a common cause of maculopapular rash illness with fever. Infection in pregnancy can lead to miscarriage, stillbirth, or an infant born with congenital rubella infection. In Ethiopia including South Nation Nationalities and People's Region (SNNPR), Rubella and congenital rubella syndrome (CRS) not recognized as a public health problem and the information on epidemiology of Rubella is very limited. This study designed to identify the magnitude and trend of Rubella disease and propose possible control measures in SNNPR.

Method: We conducted descriptive cross sectional study in SNNPR from January 2006-December 2013. Rubella disease reported through measles patients based surveillance system for laboratory conformation of Measles and Rubella IgM antibody report. The case-based surveillance data are regularly report by the Ethiopia Health and Nutrition Research Institution (EHNRI) to WHO country office and different region. We analyzed the epidemiology of Rubella disease in SNNPR. The data were analyzed by Epi-Info7 and Excel.

Results: Among 4798 samples tested for rubella IgM, 518 (10.8%) were positive for rubella IgM. The most frequently affected age group was 5-14(64.9%). We observed high number of patients from March to June. Within the eight years period, the annual incidence of Rubella patients increased 78% from 0.3/100,000 in 2006 to 0.9/100,000 in 2013. Hawassa Town administration is 32(11/100,000), Basketo sp.woreda 6(9.6/100,000) and South Omo zone 44(7/100,000) contributed height number of patients.

Conclusions: Rubella disease widely distributed throughout the region and the incidence increased periodically. Mainly occurs among school age children. It occurred seasonally with pick from March to June. I recommend that Rubella disease should include in Integrated Disease Surveillance Report (IDSR) and Rubella immunization program be considered for the prevention of the disease and CRS.

Keywords: Rubella, CRS, Ethiopia

Assessment of Risk Factors for Measles Outbreak in Mota Town, East Gojjam, Amhara, Ethiopia, May 2015: A Case Control Study.

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Background: Measles is one of the leading causes of death among young children. In Africa, about 13 million cases and 650,000 deaths occur annually, with sub-Saharan Africa having the highest morbidity and mortality. In 2014/15, 4833 cases and 40-suspected deaths reported in Amhara region. Increase in vaccination coverage leads lower incidence in younger children. The aim of the investigation was to determine risk factors and guide prevention and control measures.

Methods: We applied the case definition, a maculopapular rash and fever with coryza, conjunctivitis or cough, to select cases of measles. We conducted 1:2 unmatched case-control study from May 2-10 /2015. Data was collected using structured questionnaire. Analysis was made using Epi Info and SPSS software. Then, Odds Ratio, 95% CI and P-value used to measure the significance of association in bivariate and multivariate analysis.

Results: Of 143 reported cases, half of them were females. The median age of cases was10 (Q1=4, Q3=19) years while that of controls was 9 (Q1=5, Q3=15) years. The overall attack rate (AR) was 218/100,000. It was higher among 15-44 years (471/100,000). No death reported throughout the outbreak. Absence of vaccination (AOR: 5.1; 95% CI: 2.5-10.4 P: 00.00001), contact history with cases (AOR: 6.2; 95% CI: 2.3-16.4, P < 0.0001), travel history with in 7-21 days prior to onset of illness (COR: 6.19; 95% CI: 3.11-12.33; P< 0.0000014) were significantly associated with measles infection.

Conclusion: Adults and children greater15 years old were more affected. Absence of vaccination and contact with cases and travel history to affected areas were found to be risk factors. We searched cases house to house and provided case management to stop the epidemic. Strengthening the routine surveillance activity, case management and EPI program were recommended.

Keywords: Measles, Mota, Case control, outbreak

Assessment of Five Years Trend of Malaria in Fnote Selam Town, Northwest Ethiopia, 2015.

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Background: Malaria is mosquito-borne infectious disease of human being caused by parasitic protozoan belongs to the genes plasmodium which transmitted by the bite of mosquitoes. An estimated 190–330 million malaria episodes and 1.5 million malaria deaths occur worldwide annually. Currently 90% of all malaria deaths occur in sub-Saharan Africa. It is the fourth leading cause of death in children under the age of five years in developing countries. Three forth of the land Ethiopian is assumed to be malarious. The epidemiological pattern of malaria transmission in the country is generally seasonal and highly unstable due to variations in topography and rainfall patterns. The country is working by planning different malaria control and prevention programs in the past six years in the study area though there were no documented evidences showing malaria burden through time. Hence the current study would fill this gap which might use for scaling up and to design effective communication strategies to combat malaria.

Objectives: To assess the five years trend of malaria in Fnote selam town, northwest Ethiopia, 2015.

Methods and Materials: a trend study was conducted from 2009to 2014/15 in Fnote selam town trough reviewing reported documents. All patients that were recorded as malaria cases from 2009 to 2014/15 were our study population. Data collection tool was developed from data recording system of Finote selam town health office. Data quality assurance was done at field level, during data entry and after data entry. Data analysis was done using SPSS version 16 statistical package. Result of the study was presented using proportions, line and bar graphs.

Result: This study examined records of 47,299 malaria cases registered over 5 years. The minimum (3595) and maximum (13748) microscopically confirmed cases of malaria were reported in 2009 and 2012/2013 respectively. The trend was increased from 2009 and to 2012/2013consistently and then reduced from 2012/2013to 2014/15. The highest peak of malaria cases occurs in almost all years was observed from September to November and the minimum malaria cases were observed from December to February seasons. Regarding the identified plasmodium species, both species of plasmodium were reported in each year with *Plasmodium falciparium* being the predominant species. The respective proportion of *Plasmodium falciparium* and *Plasmodium vivax* morbidity were

40.2% and 33.9%. The trend *Plasmodium vivax* was increased from 2009 and to 2012/2013 consistently while *Plasmodium falciparium* was increased from2009 to 2010/2011 and then reduced in consecutive years.   The cases were more prevalent in males, 25.460 (53.8%) than females, 21,839(46.2%).

Conclusions: malaria is not still reduced from baseline year 2009 onwards and P. *falciparium* was most predominant. The maximum number of malaria case occurs in 2012/2013 budget year, from September to November months and among males. Therefore, prevention and control activities should be continued in a strengthened manner.

Abs 166

Malaria Outbreak Investigation in Abashiga District, Gurage Zone, Southern Region, Ethiopia, 2012.

Mekdes Demisse, MSc, Hawassa South Nation Nationalities and People's Region; Yishetila Mogessie, MSc; Jemal Hassen, MSc.

Introduction: Southern region is among the few regions with unstable malaria transmission. Consequently, malaria epidemics are serious public health emergencies. In most situations, malaria epidemics develop over several weeks. In October 2012 malaria patients were report from the Abashiga District. We investigated to identify the possible risk factors and recommend control measure.

Methods: We defined malaria any person with suspected case confirmed by Rapid Diagnostic Test living in the affected communities in Abeshige district from October –November, 2012. We identified confirmed patients in health facilities. We described the outbreak by time, place and person. We conducted 1:1unmauched case-control study to determine the possible risk factors for malaria. Data analyzed by Epi info7.

Results: We identify 40 confirmed cases (Attack rate: 1.5/1,000 pop highest among person age 15–29 years, with one death). Malaria was isolated by microscopy and 70% is P. falciparum. The data cross the threshold during the time of 19th August, 2012, peaked twice (during the first week of September and the last week of October) and continued until 15th November, 2012. Insecticide Treated Nets (ITNs) were worn out in 54% of cases and 16% of controls with an OR 6.13 [95% CI. 2.47-15.2]. Individuals that lived within 1 km of stagnant water are 3 times more likely to get malaria than those who lived away (odds ratio =3 [95% CI. 1.25-7.02].

Conclusion: The investigation suggested that an initial malaria outbreak propagated due to the use of worn out ITNs and presence of stagnant water near residential areas which are the potential for mosquito breeding sites. We recommend that replace the worn ITNs and mobilize the community to draining breeding sites and applying Indoor Residual Spraying (IRS).

Keywords: Malaria, Investigation, Ethiopia

Pharmacology and Drug Use

Abs 167

In Vivo Antihypertensive and in Vitro Vasodilator effects if the Crude Extracts and Fractions of Moringastenopetala (Baker F.) Cufod. Leaves in Rodents.

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Background: *Moringastenopetala* (Baker f.) Cufod.is a medicinal plant that has been used in Ethiopian traditional medicine as a remedy for treatment of hypertension and diabetes.

Objective: The aim of this study was to evaluate antihypertensive and vasodilatory effect in fructose induced hypertensive rats and in pre-contracted isolated whole spirally-cut strips thoracic aorta of guinea pigs, respectively.

Methods: Rats were randomly divided into control and treatment groups (n=6). Treatment groups were given daily extracts (250, 500, and 1000 mg/kg) orally with fructose. Whereas, positive, negative and normal control received captopril (20 mg/kg/day with fructose), only fructose (66% w/v *ad libitum*) and distilled water *ad libitum* for 15 days, respectively. The blood pressure was measured every 5th day using tail cuff blood pressure analyzer, and on the 16th day the blood was sampled to evaluate antidyslipidemic effect using clinical chemistry analyzer. A guinea pig was sacrificed by gentle cervical dislocation and the thoracic aorta ring was removed, cut spirally and mounted in an organ bath containing $37^{O}C$ maintained Kreb'sHenseleit physiological solution aerated with carbogen (95% O_2 and 5% CO_2) for experiment. The vasodilatory activity of cumulative doses (1.25, 2.50, 5.00 and 10.00 mg/ml) of *Moringastenopetala* (Baker f.) Cufod.extract and fractions were evaluated on endothelium intact and denuded isolated whole spirally-cut strips thoracic aorta of guinea pigs pre-contracted with (80 mM) potassium chloride, (1 μM) epinephrine, (10 μM) methylene blue and (10 μM) glibenclamide using Polygraph.

Results: The study showed that aqueous and 70% ethanol extracts significantly prevented blood pressure increment in a dose dependent manner comparable to that of the standard drug. Similarly, the extracts suppressed increment in lipid profile (cholesterol, glucose and

triglycerides) compared with negative control. The biochemical test revealed that extracts produced a rise in liver but no effect on kidney function indicators compared with normal control. All extracts showed a relaxant effect in pre-contracted isolated whole spirally-cut strips thoracic aorta of guinea pigs in a dose dependent manner. Whereas, the greater percent relaxant effect was shown on addition of crude extracts in (80 mM) potassium chloride and (1 µM) epinephrine pre-contracted isolated whole spirally-cut strips thoracic of guinea pigs. Hence, the possible mechanism of relaxation is might be mediated through blockade of Ca^{2+} influx both receptor-operated and L-type voltage dependent Ca^{2+} channels.

Conclusion: These findings revealed that both crude extracts of *Moringastenopetala* (Baker f.) Cufod. Possess antihypertensive and antidyslipidemic effect. The aqueous extract showed more significant *in vitro*vasodilatory effect than its fractions and 70% ethanol extract.

Keywords: *Moringastenopetala, in vivo,* Vasodilatory, Antihypertensive, Fructose, Aortic strips, Mechanism of action

Which Adherence Measure-Self-Report, Clinician-Recorded or Pharmacy-Refill- is Best Able to Predict Detectable Viral Load in a Public ART-Program Where Routine Plasma Viral Load Monitoring is Unavailable?

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Background: Combination antiretroviral therapy (cART) suppresses viral replication to an undetectable level if a sufficiently high level of adherence is achieved. We investigated which adherence measurement best distinguishes between patients with and without detectable viral-load in a public ART-program where routine viral-load monitoring is unavailable.

Methods: We randomly-selected 870 patients who started cART between May-2009 and April-2012 in 10 health-care facilities in Addis Ababa, Ethiopia. Six-hundred sixty-four (76.3%) patients who were retained in HIV-care and were receiving cART for at least six months were included and 642 had their plasma HIV-1 RNA concentration measured. Patients' adherence to cART was assessed according to self-report, clinician-recorded and pharmacy-refill measures. Multivariate logistic regression model was fitted to identify the predictors of detectable viremia.

Results: Fifty-nine (9.2%) and 35 (5.5%) of the 642 patients had a detectable viral-load of ≥ 40 and ≥ 400 RNA copies/mL, respectively. In the multivariate analyses, younger age, lower CD4-cell count at cART initiation, being illiterate and widowed, and each of the adherence measures were significantly and independently predictive of having ≥ 400 RNA copies/mL. The receiver operating characteristic (ROC) curve showed that these variables altogether had a likelihood of more than 80% to discriminate correctly between patients with a plasma viral load of ≥ 400 RNA copies/mL from those without.

Conclusions: Adherence to cART was remarkably high. Self-report, clinician-recorded and pharmacy-refill non-adherence were all significantly predictive of detectable viremia. The choice for one of these methods to detect non-adherence and predict a detectable viral-load can therefore be based on what is most practical in a particular setting.

Drug Therapy Problems and their Predictors among Hypertensive Patients on Follow up in Dil Chora Referral Hospital, Dire-Dawa, Ethiopia.

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Background: Despite the development of many effective anti-hypertensive drugs, patients with hypertension are at increased risk for experiencing drug therapy problems for several reasons including concurrent medications, comorbidities and other factors. Thus, this study was designed to assess drug therapy problems and their predictors among hypertensive patients on follow up at Dil Chora Referral Hospital, Dire-Dawa, Ethiopia.

Methods: Hospital based cross-sectional study involving medical record review was conducted from February to April 2015 using a structured questionnaire and this was complemented by a face-to-face interview. Adult hypertensive patients aged ≥18 years who were on follow-up for at least three months were enrolled in the study. Multiple logistic regressions were fitted and odds ratios with 95% confidence interval were calculated to identify associated factors.

Results: The study included 271 hypertensive patients. Mean age was 57.73±12.13 years old and the age ranged from 25 to 94 years. One hundred sixty three (60.1 %) were females. More than half of the respondents (50.55%) had comorbid condition and diabetes was the most common. More than 71% of patients were found to have at least one drug therapy problem and the mean number of drug therapy problems per patient was 1.39±1.28. Need additional drug therapy (62.43%) and non-adherence (32.8%) were the two most common drug therapy problems. Presence of comorbidity (AOR=5.74, 95%CI; 2.49-13.00), taking 3 or more medications per day (AOR=7.04, 95%CI; 2.33-21.25), and uncontrolled blood pressure (AOR=7.68, 95%CI; 3.70-15.90) were factors associated with drug therapy problems.

Conclusions: Drug therapy problems are common among hypertensive patients on follow up and the most common were need additional drug therapy and non-adherence to medications. Pharmacist interventions in drug therapy would help physicians in early identification and prevention of drug therapy problems so that a joint effort between physicians and pharmacists should be made.

Keywords: Hypertension, Drug therapy problems, Dil Chora Referral Hospital, Ethiopia

Adherence to Treatment and Factors Affecting Adherence of Epileptic Patients at Yirgalem General Hospital, Southern Ethiopia: a prospective Cross-sectional Study.

Temesgen Yohannes, B.Pharm; Tigestu Alemu, MSc in Clinical Pharmacy, School of Pharmacy, Jimma University.

Background: Non adherence of epileptic patients to antiepileptic medication often leads to an increased risk of further seizures and substantial worsening of disease, death and increased health care costs.

Objective: to assess adherence to treatment and factors affecting adherence of epileptic patients at Yirgalem General Hospital, Southern Ethiopia

Methods: A cross-sectional study was conducted on adult epileptic patients at Yirgalem General Hospital, Sidama Zone, Southern Ethiopia from February 9 to 22, 2015. Out of a total of 210 participants, 194 had complete data and studied. The data was collected from patients ≥18 years old using a structured interview questionnaire and the eight-item Morisky medication adherence scale. All consecutive patients coming to epilepsy clinic during the study period were interviewed until the desired sample size was obtained. Data collected included patient demographics, attitude and belief about epilepsy and adherence to medication(s). To examine factors affecting medication adherence, we used a multivariate logistic regression model. Statistical significance was considered at $P < 0.05$.

Results: Out of a total of 210 participants, 194 were willing to participate and studied. Of the 194 participants, 109 (56.2%) were males. The mean age of the participants was 33.62±11.44 year; range 18 to 66 years. More than half, 121 (62.27%), of the participants reported that their epilepsy was not controlled after starting treatment. The majority, 123(63.41%), of the participants were on two antiepileptic medications. The majority, 132(68%), of the participants were no-adherent to their medication(s).The commonest reported reasons for non-adherence were forgetfulness, 49(75.4%) and run out of pills, 7(10.8%). Factors that affect medication adherence are epilepsy treatment for <1 year (AOR =11.3, 95%CI: 1.8-72.8, P=0.011), epilepsy treatment for 1-3 years (AOR=6.1, 95%CI: 2-19.1, P=0.002), epilepsy treatment for 3-5 years (AOR=5.3, 95%CI: 1.6-17.6, P=0.007),being married (AOR=6.3,95%CI: 1.7- 23.2, P=0.006), grade 9-12 education (AOR=6.3, 95%CI: 1.2- 34.2, P=0.028), college or university education (AOR=13.3, 95%CI: 2.5- 70.1, P=0.002) and absence of co-morbidity (AOR=6.3, 95%CI:1.6- 24.7,P =0.008).

Conclusions: The rate of adherence observed in this study was low. The majority of patients reported that their epilepsy is not controlled after starting treatment. Factors that affect adherence are epilepsy treatment for <1 year, epilepsy treatment for 1-3 years, epilepsy treatment for 3-5 years, being married, grade 9-12 education, college or university education and absence of co-morbidity.

Keywords: Epilepsy, Adherence, Morisky-Medicaion Adherence Scale

Adherence and Determining Factors to Anti Hypertensive Therapy among Hypertensive Patients Attending Selected Hospitals in Harari Region, Eastern Ethiopia 2014 GC. *Atnafu Nega Nadewu, Wolaita Sodo University.*

Background: Hypertension is an overwhelming global challenge with high morbidity and mortality rates. Around 26.4% of the world adult population in 2000 had HTN, and predicted to be 29.2% in 2025. Although there is scarcity of study on prevalence of HTN in Ethiopia, around 6 % of Ethiopian population has HTN. Research has shown that non-adherence to AHT is the most important reason for poorly controlled HTN.

Objective: objective of this study was to determine the status of adherence to AHT and affecting factors.

Methods: Institution based cross sectional study was conducted from February 13 to March 16, 2013 at Hiwot-Fana and Jegol hospitals, among hypertensive patients of age 18 years and above receiving antihypertensive treatment for at least a year. A single population proportion formula was used to estimate the total sample size of 422 study subjects. By SRS method (Every other patients coming to hospital) 422 were invited to participate,401 were responded. Eight item MMAS Scale & as WHO STEPS Instrument, prepared questionnaires were used to label patient as adherent and non-adherent to medication & healthy life style respectively. Initially, bi-variate logistic regression then multivariate logistic regression were carried out to check effect of independent variables on adherence with P- value < 0.05 at 95% CI.

Result: adherence to antihypertensive medication & adherence to lifestyle was 65.6% &61.2% respectively. Age, distance, family history, knowledge of hypertension, visit to facilities and Khat chewing significantly affect adherence to antihypertensive drug. Marital status, educational level, distance, Bp control, visit and Khat chewing were significantly affect adherence to recommended lifestyle.

Conclusion: both antihypertensive medication and life style adherence were low in this study.

Recommendation: The especially emphasis should be given on the awareness creation service coverage

Keywords: hypertension, adherence, controlled hypertension, Healthy Lifestyle, MMAS

Abs 172

Assessment of Drug Utilization Practice in Ophthalmology Department of University of Gondar Referral and Teaching Hospital, North West Ethiopia.

Eshetie Melese Birru; Mohammedbrhan Abdulwahab; Department of Pharmacology, College of Medicine and Health Sciences, University of Gondar.

Introduction: Currently there are a plenty of pharmaceuticals which have made it possible to manage many clinical disorders. However, in many circumstances drugs are not used rationally and this will negatively affect the benefits and safety of those pharmacotherapeutic agents. Accordingly this study is designed to assess the rationality of drug utilization practice among outpatients in the ophthalmology department of University of Gondar referral and teaching hospital, North West Ethiopia.

Methods: A descriptive, prospective, cross-sectional study was conducted on 846 outpatients of Ophthalmic Pharmacy of University of Gondar teaching hospital in Gondar, Ethiopia. Data was collected by interviewing patients and/or caregivers who were visiting the ophthalmic pharmacy unit and from their ophthalmic drug prescription from March to May, 2014. The data was entered and analyzed using SPSS version 21 statistical package.

Result: The mean number of drug per prescription was 1.71. Percentage of prescriptions containing ≤ 2 drugs per prescription was 92.44%. About 86.48% of the drugs were prescribed with their generic name. In more than 50% of cases the dose and duration of therapy supposed to be taken was determined incorrect as per the standard treatment guideline. In this study there was statistically significant association between post-dispensing knowledge of the subjects and age and number of drugs per prescription.

Conclusion: According to this study the most frequently prescribed ophthalmic drugs were found antibiotics and most of the prescribing information was inadequate and incomplete indicating the need of improving the prescribing practice. Most of the prescribing indicators were below the recommended WHO standards and furthermore the understanding of the subjects on their medications was also poor which seeks immediate amendment due to the more sensitive nature of eye care.

Keywords: Eye care, rational drug use, prescribing practice, Post-dispensing knowledge

Drug Therapy of Epileptic Seizures in Adult Epileptic Outpatients of University of Gondar Teaching Hospital, Gondar, North West Ethiopia.

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Objective: To assess antiepileptic therapy prescription patterns and treatment outcomes in adult epileptic outpatients, University of Gondar Teaching Hospital, Gondar, North West Ethiopia.

Methods: Institution based, retrospective cross-sectional study was conducted on the medical charts of 336 adult epileptic patients on follow-up at the outpatient of Neurology Department of University of Gondar Teaching Hospital from May 2014, April 2015. Reviewing follow-up information on medical cards was used to evaluate AED prescribing pattern and treatment outcome. Data was collected by using data collection format and analyzed using SPSS software version 16.

Results: The common type of seizure diagnosed was generalized tonic clonic seizure, 245 (72.91%). Monotherapy with AED accounted for 80.35% of the cases, whereas dual therapy and polythearap with three AED combinations accounted for 16.37% and 3.28%, respectively. The most frequently prescribed AED was phenobarbitone (62.47%) followed by carbamazepine (17.91%). From the total epileptic cases, 277(82.4%) were having well-controlled seizure status in the last three consecutive months.

Conclusion: Most of the patients were maintained on monotherapy and largely this was covered by the older antiepileptic, phenobarbitone as per the standard treatment guideline. And this may need the revision of the treatment regimen as well as the treatment guideline considering the efficacy, safety of the drugs as well as the patients' adherence to those prescribed medicines.

Keywords: Anti-epileptics, epilepsy, treatment outcomes, prescription patterns

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Bekesho Geleta

Belay Bezabih

Belete Biadgo

Bereket Duko

Berhan Tassew

Berihun Assefa

Besratemariam G/Amlak

Bethlehem Tsegaw

Birhanu Jikamo

Birhanu Kenta

Canaan Negash

Daniel Bogale

Daniel Getachew

Dawit Jember

Dawit Siraw

Debela Amente

Demiss Nigussie

Dereje Bayissa

Dereje Geleta

Dereje Oljira

Dereje Tsegaye

Derese Mekonnen

Desalegn Markos

Desta Haftu

Dube Jara

Eshetie Melese

Eshetu Molla

Eskedar Awlachew

Eskezyiaw Agedew

Fanos Tadesse

Fekede Asefa

Fekede Bekele

Fentie Ambaw

Fetuma Feyera

Frehiwot Legesse

Gebrekiros Gebremichael

Gebreselassie Demeke

Getachew Arage

Getahun Asebe

Girma Beressa

Girma Demissie

Girma Mulisa

Girmay Tsegay

Habtamu Mellie

Habte Belete

Hamid Yimam

Haregewoyin Kerebih

Hiwot Abebe

Hunachew Beyene

Hylemariam Mihiretie

Kefyalew Dagne

Kelemework Adane

Kelemu Tilahun

Konjit Kassahun

Legese Alemayehu

Lidiya Tsegay

Liyew Mekonen

Mamusha Aman

Manaye Yihune

Matiwos Soboka

Mebratu Wondirad

Mekdes Demisse

Mekuria Asnakew

Melaku Tilahun

Melese Girmye

Melkamu Dedefo

Merga Dheresa

Mesele Damte

Meseret Ekubay

Mesfin Eshetu

Mikru Shiferaw

Misganaw Ayalew

Mossie Tamru

Moti Tolera

Mulubirhan Assefa

Muluken Asres

Muluken Azage

Muluken Birihanu

Nagasa Dida

Nebiyu Dereje

Netsanet Shiferaw

Netsanet Abera

Nigus Bililign

Niguse Tadele

Nigussie Tadesse

Nurilign Abebe

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Tegene Legese

Tekilil Amdesilassie

Teklehaymanot Huluf

Teklit Angesom

Teklu Shiferaw

Temesgen Tilahun

Tenaw Yimer

Tesfa Mekonen

Tesfahun Mekene

Tesfalidet Tekelab

Tesfaye Honja

Tigistu Alemu

Tilahun Belete

Tinsae Alemayehu

Tizazu Zenebe

Tsedeke Wolde

Tsigie Gebretsadik

Walelegn Worku

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Yakob Gebregziabher

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