

Ethiopian Public Health Association (EPHA)



EPHA Sponsored Master's Theses Extracts on HIV/AIDS

(Extract NO.7)

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(2009-Extract NO.7)**

**May 2009, Addis Ababa
Ethiopia**

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Binyam Ayele- MD, MPH
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EPHA

Abbreviations and Acronyms

| | |
|-------|--|
| AIDS | Acquired Immuno deficiency Syndrome |
| ANT | Ante Natal Treatment |
| ART | Ante Retroviral Therapy |
| ARV | Anti Retroviral |
| BSS | Behavioral Surveillance Survey |
| BCC | Behavioral Change Communication |
| CBO | Community Based Organization |
| CDC | Center for Disease Control and Prevention |
| DHS | District Health Services |
| DOTS | Directly Observed Treatments |
| EPHA | Ethiopian Public Health Association |
| ETB | Ethiopian Birr |
| EJHD | Ethiopian Journal of Health Development |
| FGD | Focused Group Discussion |
| GO | Governmental Organizations |
| HIV | Human Immune Deficiency Virus |
| HBC | Home Based Care |
| HAPCO | HIV/AIDS Prevention and Control Office |
| IEC | Information Education Communication |
| IGA | Income Generating Activities |
| KAP | Knowledge Attitude Perception |
| MTCT | Mother to Child Transmission |
| MoH | Ministry of Health |
| NGOs | Nongovernmental Organizations |
| OR | Odds Ratio |
| OVC | Orphan and Vulnerable Children |
| PLWHA | People Living With HIV/AIDS |
| PMTCT | Prevention of Mother to Child Transmission |
| PTB | Pulmonary Tuberculosis |
| PPS | Probability Proportional to Size |
| STIs | Sexually transmitted Infections |
| SPSS | Statistical Package for Social Science |
| SNNPR | Southern Nations and Nationalities People Region |

| | |
|--------|--|
| TB | Tuberculosis |
| TV | Television |
| UNFPA | United Nations Populations Fund |
| UNICEF | United Nations Children's Fund |
| UNAIDS | Joint United Nations Program on HIV/AIDS |
| VCT | Voluntary Counseling and Testing |
| WHO | World Health Organization |

Message from the EPHA President

It has been more or less over two decades since HIV/AIDS emerged as a very serious threat in Ethiopia causing devastating national crisis in various aspects of social, economical and political activities of the country. The Ethiopian Public Health Association (EPHA) has been occupied in the fight against the epidemic through different actions by involving its members and collaborative effort with several stakeholders. One of the major strategic directions of EPHA in fighting the epidemic and other public health problems is availing evidence based data for premeditated decision making at policy level and in program implementation through operational researches.

In view of the need for new data and documenting lessons learned from program implementations in the fight against the epidemic, EPHA through the technical and financial assistance of CDC-Ethiopia has been actively engaged in operational researches since 2003. In this diverse operational researches, the association is utilizing the skills of graduate students, its members and wider public health community. More importantly, findings of the operational researches are disseminated to a wider public health audience using the different publications of the Association and in its webpage (www.ethpa.org).

This document is one of the publications released as extract No. 7 from a series of publications on EPHA-CDC project research awards in the areas of HIV/AIDS. In the document the summary of findings of several public health information that incorporate issues such as the relationship between STI and HIV/AIDS, nutritional care and PLWHA, practices of PMTCT, MTCT and Women's reproductive age, attitudes and practice of Pulmonary Tuberculosis, and Knowledge and practice about VCT are built-in.

EPHA believes that the findings of the different studies will benefit policy makers and program implementers in their effort to prevent and control HIV/AIDS through behavioral change interventions, improving adherence to ART, and support to those infected and affected by the virus and availing user friendly RH and HIV/AIDS services to the public. For those interested in getting more information and in-depth look to the findings of the studies, EPHA in collaboration with the authors is willing to share detailed analysis and texts of the document.

At this juncture, I would like to thank CDC for their continued financial and technical support for the different project activities including publication of this extract. I would also like to congratulate the authors as well as all participants in the research activities for their important contribution without which the information for this extract could not be gained.

As a final point, I call upon all readers to use the findings and recommendations of those studies exhaustively in the implementation of programs which are aimed at curbing the problem of HIV/AIDS in Ethiopia and beyond.

Mengistu Asnake (MD, MPH)

EPHA President

INTRODUCTION

This is the seventh MPH theses published in the form of EXTRACT by the Ethiopian Public Health Association. It contains summaries of seven Master's theses studies conducted by postgraduates for partial fulfillment of the academic requirement in the School of Public Health, Gondar University. The post graduates have tried their best to examine critical programmatic issues on different HIV/AIDS disciplines. The main purpose of this publication is to augment utilization of evidence based decision making on HIV/AIDS program implementations. Each study has been presented as an item containing brief abstracts, followed by background, objectives, study design, results, conclusions and recommendations.

The first study, deals with prevalence of risky sexual behaviors and associated predisposing factors to STIs/HIV/AIDS Infections among in school and out school Youth. The objective of the study was to assess the prevalence of risky sexual behavior and associated factors for STIs/HIV infections. More specifically, the study attempts to determine and compare the prevalence of risky sexual behavior, to identify the most predictive variables of risky sexual behavior related to STIs/HIV and to identify factors that influence condom use among in school and out of school youth population in North Gondar zone.

The second study discusses the Assessment of Nutritional Care and Support for People Living with HIV/AIDS in Harar, Eastern Ethiopia. The intention of this study was to examine the existence of strategic planning and collaboration among the organizations in respect to various nutrition care and support activities for PLWHA, to assess the existing nutrition care and support services and to identify strengths and problems encountered in the provision of the services for PLWHA.

The third aspect of the text reveals knowledge, attitudes and practices towards prevention of mother to child transmission of HIV among antenatal care mothers in Mekelle, North Ethiopia. It is aimed at determining the knowledge, attitude and practice towards PMTCT of HIV/AIDS among pregnant women. It further tries to identify factors influencing prevention of mother to child transmission of HIV/AIDS among pregnant women.

The subsequent study is bond to take care of knowledge of women of reproductive age on MTCT of HIV and their attitude and practice towards its prevention in Gonder Town, Northwest Ethiopia. Similarly, this study intends to assess knowledge of women of reproductive age towards MTCT, to assess their attitude and practice towards PMTCT.

The fifth thesis discusses the knowledge, attitude and practice on pulmonary tuberculosis among adults in Arbaminch town and Arbaminch zuria woreda, Gamo Goffa Zone, SNNPR, Ethiopia. This study is mainly up to assessing adults' knowledge on signs and symptoms, cause, transmission, curability, severity, preventability of PTB. It further tried to review the attitudes of adults towards PTB patients and the disease, to assess practices on the prevention and control of PTB and to determine the relationships of socio-demographic factors and PTB knowledge.

The sixth issue is to reveal factors that influence adherence to antiretroviral therapy among adults living with AIDS at Bahir Dar town, North West Ethiopia. The study basically aims at determining the prevalence rate of adherence to antiretroviral medications and identifying factors that influence adherence in patients on ART. The last one deals with assessment of knowledge, attitude and practice of Voluntary HIV Counseling and Testing among 15-49 Years in Dessie town Administration, South Wollo Zone, North East Ethiopia. It has attempted to assess knowledge, attitude the extent of service utilization of people aged 15-49.

The EPHA –CDC Project is confident that the studies will provide comprehensive information for health professionals, program implementers, policy makers and other stakeholders working in areas of HIV/AIDS control. Hence, our goal is to avail evidence based information for program managers engaged in the health sector in order to improve HIV/AIDS program implementation.

THESIS-ONE

Prevalence of Risky Sexual Behaviors and Associated Predisposing Factors to STIs/HIV/AIDS Infections Among in school and out school youth in north Gonder Zone, Northwest Ethiopia.

Molla Tafete Ayele

ABSTRACT

Background: young people between the ages of 15 to 24 years are both the most threatened globally, accounting for half of all new cases of HIV, and the greatest hope for turning the tide against AIDS. Worldwide, many youth have sexual intercourse and are at risk of sexually transmitted infections (STIs), including HIV, and unintended pregnancy. Ethiopia is among the highly HIV/AIDS infected and affected countries in the world. Particularly the youth were indicated to be at risk of HIV infection despite high level of knowledge about HIV/AIDS.

Methodology: A cross-sectional survey was conducted from January to March 2007 to identify risky sexual behavior of youth related to STIs/HIV infections among in school and out of school youth in North Gondar Zone, Northwest Ethiopia.

Results: A total of 1681, (843 in-school and 838 out-of-school) youth participated in the study. About 49.7% were sexually experienced and 53.3% of them reported that they had two or more sexual partners. Self-reported risk perception to HIV infection was positively associated with number of sexual partners, alcohol consumption, and khat chewing. Out of the sexually experienced youth, 68.7% of the respondents did not use condom at the first time of their sexual intercourse, and 67.1% did not use condom during the last time they had sexual intercourse.

Conclusion and recommendation: despite their high knowledge on HIV/AIDS, the youth still engage in risky sexual behavior and their risk perception is low. Youth reproductive health programs should expand to motivate and support young people to delay sexual commencement, reduce number of sexual partners, avoid sex with commercial sex workers and use condom.

Key words: Youth, Risky sexual behavior, condom use, North Gondar

INTRODUCTION

Youth (age 15-24) is the period between the onsets of puberty to the completion of 24 years of age. It is the period when he/she attains maturity, gets employed, may get married, develops financial and psychological autonomy, stability, wisdom, reliability, integrity, and compassion (1, 2). Adolescents are faced with important choices about behaviors and risks with respect to a range of issues; alcohol use, tobacco use, early sexual activity (3, 4), etc.

There are 11.8 million HIV infected youth worldwide. African youth face fast growing rates of infection with HIV and STIs. In this region, most new HIV infections occur among people ages 15 to 24 and are sexually acquired. Some teens are unable to protect themselves because they lack the skills and power to negotiate abstinence or condom use (5).

Ethiopia is one of the highly HIV/AIDS affected countries in the world. As is the case elsewhere in Africa, transmission is almost exclusively through heterosexual contact. The adjusted national HIV prevalence in 2005 was 3.5; 3% among males and 4% among females. Alcohol and substance use are the most common predictors of adolescents' risky sexual behavior (6-7).

OBJECTIVE

General objective

To assess the prevalence of risky sexual behavior and associated factors for STIs/HIV infections among preparatory school and out of school youth, in North Gondar zone.

Specific objectives

- To determine and compare the prevalence of risky sexual behavior among in-school and out-of-school youth.
- To identify the most predictive variables of risky sexual behavior related to STIs/HIV.
- To identify factors that influence condom use among in school and out of school youth population in North Gondar zone.

MATERIALS AND METHODS

Study Design

A comparative cross-sectional study involving in-school and out-of-school youth was conducted between January and March, 2007.

Study area

The study was conducted in North Gondar administrative zone.

Source and study population

The source population included in-school youth enrolled in the six secondary schools and out-of-school youth residing in North Gondar zone age 15-24 years.

Study Population were all students grade 9th to 12th and out-of-school youth aged 15-24 years in North Gondar zone in the 4 randomly selected secondary high schools (grade 9-12) and out of school youth living in four kebeles respectively.

Sample size determination and sampling procedure

The sample size was estimated by applying formula for estimation of two population proportions with the following assumptions:

1. **For older out-of-school youth** non-condom use with last non-commercial partner (% of those who had sex in the last 12 months in the Amhara region was 48.7%) (8).
2. **For in-school youth** non-condom use with last non-commercial partner (% of those who had sex in the last 12 months in the Amhara region was 60.8%) (8).

Level of confidence =95 %

Power = 80%

Design effect= 3 (since the sampling procedure involved 3 stages).The overall sample size was found to be 1686($n_1=843$; and $n_2=843$).

Sampling techniques

Multistage sampling procedure was employed and out of the total 18 districts, four (Gondar town, Chilga, Gondar zuria and Dembia) were taken by simple random sampling for both in-school and out-of-school youth.

In-school youth, one section for some which contained adequate number and two sections in others were randomly selected from each grade (9-12) until the required number in that particular grade was obtained. Respondents were selected in each class room by systematic random sampling technique.

Out-of-school youth: one kebele from each district was taken using simple random sampling technique. Then the total households of the kebele were divided for probability proportional-to-size allocation of households to each selected kebele. Systematic random sampling method has been used to identify the required households based on the calculated sampling interval and one eligible was included from each household. Then, individual study subjects were drawn and interviewed.

Variables of the study

Dependent Variables

Sexual behavior: age at first intercourse, unprotected sex, multiple sexual partner, casual sex, condom use, knowledge to prevent HIV/AIDS, risk perception and history of STIs.

Independent variables

Individual factors: Sex, Age, marital status, schooling, religion, alcohol and khat use.

Family and Peer factors: Educational status of the families, employment status, parent-child monitoring, family communication on sexuality, peer pressure, and, pornographic film houses.

Socioeconomic factors: Income level of the family and living conditions.

Operational definitions

Risky sexual behavior: a behavior that includes unprotected sex, sex with multiple partners or casual sex that could possibly result in acquiring HIV and other sexually transmitted infections (STIs).

Out of school youth: youth within the range of 15-24 years who are not engaged in any formal education and other vocational trainings.

Youth: young people within the age of 15-24 years.

Adolescent: young people within the age of 10-19 years.

Commercial sex worker (partner): one who exchanges sex or in a pattern of sexual relationship with payment (from males)

Regular sexual partner: couples who are married or in a pattern of sexual relationship which is almost equivalent to marriage.

Informal employment: an employment that does not require qualification or a special training and skill.

Knowledge: In this study, those who responded correctly to 6 or less questions ($\leq 60\%$) rated as having poor knowledge while those who answered correctly 7 or more questions ($70\%-100\%$) were rated as knowledgeable.

Data collection technique

The data were collected using structured pre-tested questionnaire with open ended and closed type of questions prepared in English and then translated into the local language Amharic. Self administered questionnaire was used for in-school and for out-of-school youth, the data collection was also carried out by interviewing.

Data processing and analysis

Data entry and analysis was done using EPI16 and SPSS version12.0.1 packages. Association of predictor variables with the dependent variable was computed using logistic regression analysis at 0.05 level of significance and odds ratio with 95% CI was calculated to measure strength of association.

RESULTS

Socio-demographic characteristics

A total of 1686 youth participated in the study and the response rate was 99.7%. Eight hundred forty three (50.1%) out of school and 838(49.9%) in school youth participated and completed the questionnaire. The mean age of the study population was 18.7 ± 2.3 years and the median age was 18 years.

Four hundred forty (27.3%) respondents mentioned their family earn less than 100 Birr and 197(12.0%) earn more than 1000 birr (Table1).

Table 1: Socio-demographic characteristics of youth in North Gondar Zone, Amhara region, Northwest Ethiopia, April 2007(n=1681)

| Variables | OSY (n=843) | ISY (n=838) | |
|-------------------|-------------|-------------|-------------|
| Sex | | | |
| Male | 513(60.9%) | 434(51.8%) | 947(56.3%) |
| Female | 330(39.1%) | 404(48.2%) | 734(43.7%) |
| Age | | | |
| 15-19 | 411(48.8%) | 752(89.7%) | 1163(69.2%) |
| 20-24 | 432(51.2%) | 86(10.3%) | 518(30.8%) |
| Religion | | | |
| Orthodox | 654(77.6%) | 760(90.7%) | 1414(84.1%) |
| Muslims | 179(21.2%) | 65(7.8%) | 244(14.5%) |
| Others | 10 (1.2%) | 13(1.5%) | 23(1.4%) |
| Ethnic Group | | | |
| Amhara | 810(96.1%) | 819(97.7%) | 1629(96.9%) |
| Tigre | 23(2.7 %) | 19(2.3%) | 42(0.5%) |
| Other | 0(1.2 %) | | 10(0.6%) |
| Marital status | | | |
| Never Married | 843 (100%) | 751(89.6%) | 1594(94.8%) |
| Married | 87(10.4%) | | 87(5.2%) |
| Living with | | | |
| Father and mother | 257 (30.5%) | 454(54.2%) | 711(42.3%) |
| Mother only | 129 (15.3%) | 95(11.3%) | 224(13.3%) |
| Father only | 23 (2.7%) | 19 (2.3%) | 42(2.5%) |

| | | | |
|-------------------------|-------------|------------|------------|
| Relatives | 45 (5.3%) | 58(6.9%) | 103(6.1%) |
| Fiancé | 40 (4.8%) | 2(0.2%) | 42(2.5%) |
| Alone in a rented house | 349 (41.4%) | 70(20.3%) | 519(30.9%) |
| Spouse (husband/wife) | 0 (4.8%) | | 40(2.4%) |
| Family monthly income | | | |
| <100 birr | 221(26.2%) | 219(26.1%) | 440(26.1%) |
| 101-200 birr | 256(30.4%) | 213(25.4%) | 469(27.9%) |
| 201-500 birr | 166(19.7%) | 151(18.1%) | 317(18.9%) |
| 501- 1000 birr | 118(14.0%) | 144(17.2%) | 262(15.6%) |
| >1000 birr | 82(9.7%) | 111(13.2%) | 193(11.5%) |

❖ *Informal sector includes: house maid, local drink seller and daily laborer.*

Sexual history

Eight hundred thirty five(49.7%), (67.7% among out of school youth and 32.3% in-school youth) reported to have practiced sexual intercourse in the last 12 months preceding the survey. Youth sexual practices ranged 61.8% and 55.2% for out of school and in school boys and 38.2% and 44.8% for out of school and in school girls respectively. About 445(53.3%) respondents reported that they had sexual intercourse with two or more partners in the last 12 months.

In multivariate analysis, female youth were 1.5 times more likely to have had sex than their male counter parts, (OR=0.77, 95% CI=0.63-0.93). Older youth (20-24) were 7 times more likely to be sexually experienced than young ones (15-19), (OR=9.47, 95% CI=7.3-12.3). In-school youth were found to be less likely to have sexual intercourse than out of school youth. (Table2).

From the sexually experienced respondents, 144(17.2%) of the youth reported that they had signs and/ or symptoms of STIs. Of the sexually experienced female youth 134(40.1%) (62.7% among out of school and 37.3% among in school youth) reported history of abortion and 78 (23.4%) reported history of delivery. Most of the abortions (89.6%) were induced.

Knowledge about STIs and HIV/AIDS

Only 1138(67.7%) respondents had comprehensive knowledge. There was a statistically significant difference between condom use at the last sex and the reference category (OR=1.60, 95%CI=1.16-2.22) (annex 1). Moreover, respondents mentioned all the three possible methods of HIV/STIs prevention (abstinence, faithfulness, and condom use).

Table-2: Comparison of youth knowledge to prevent HIV in North Gondar Zone, Northwest Ethiopia. April 2007.

| Variables | knowledge to | | OR (95%CI) | | |
|-----------------------------|--------------|------|---------------------|---------------------|----------|
| | Prevent HIV | | Crude | Adjusted | P. value |
| | Yes | No | | | |
| Out of school youth | 589 | 254 | 1 | 1 | |
| In-school youth | 549 | 289 | 1.22(0.99, 1.50) | 0.85(0.551, 1.30) | 0.44 |
| Sex | | | | | |
| Male | 688 | 259 | 1 | 1 | |
| Female | 450 | 284 | 1.68(1.36, 2.06) ** | 1.44(1.04, 1.99) ** | .030 |
| Age | | | | | |
| 15-19 th | 775 | 388 | 1 | 1 | |
| 20-24 | 363 | 155 | 0.85(0.68, 1.07) | 1.01(0.73, 1.41) | .94 |
| Marital status | | | | | |
| Currently not married | 1089 | 505 | 1 | 1 | |
| Currently married | 49 | 38 | 1.67(1.08, 2.59) ** | 2.06(1.20, 3.56) ** | .009 |
| Educational status | | | | | |
| Illiterate | 35 | 28 | 1 | 1 | |
| Primary | 76 | 30 | 0.56(0.35, 0.97) | 0.56(0.30, 1.03) | .06 |
| Secondary | 485 | 1036 | 1.05(0.67, 1.63) | 0.71(0.41, 1.22) | .21 |
| Number of sexual partners | | | | | |
| One | 170 | 120 | 1 | 1 | |
| Two or more | 868 | 423 | 1.10(0.86, 1.4) | 1.08(0.79, 1.47) | .65 |
| Condom use at the first sex | | | | | |
| Yes | 192 | 73 | 1 | 1 | |
| No | 188 | 382 | 1.29(0.94, 1.79) | 0.86(0.54, 1.38) | .54 |
| Condom use at the last sex | | | | | |
| Yes | 207 | 68 | 1 | 1 | |
| No | 367 | 193 | 1.60(1.16, 2.22) | 1.67(1.04, 2.67) ** | .04 |
| Drink alcohol | | | | | |
| Yes | 589 | 271 | 1 | 1 | |
| No | 549 | 272 | 1.08(0.88, 1.32) ** | 0.85(0.59, 1.22) | .38 |
| Chew Khat | | | | | |
| Yes | 267 | 115 | 1 | 1 | |
| No | 879 | 428 | 1.14(0.89, 1.46) | 0.86(0.61, 1.21) | .37 |

** Statistically significant association

Condom use and risk perception

Out of the sexually experienced respondents only 31.7% reported that they had used condom at the first time they had sexual intercourse and only 32.9% had used condom during the last time they had sexual intercourse (table).

From those sexually experienced youth 49.3% were aware of themselves of being engaged in high risk practices for HIV infection. Marital status, condom use and number of sexual partners are significantly associated with self risk perception (table-3).

Table-3: Logistics regression results in selected variables and youth risk perception, North Gondar Zone, Northwest Ethiopia, april.2007.

| Variables | Risk perception | | OR (95%CI) | | P. value |
|---------------------------|-----------------|------|----------------------|------------------------|----------|
| | Yes | No | Crude | Adjusted | |
| Out of school youth | 275 | 568 | 1 | 1 | |
| In-school youth | 137 | 701 | 0.40(0.32, 0.51) ** | 2.49(1.431, 4.34) ** | P<0.01 |
| Sex | | | | | |
| Male | 244 | 703 | 1 | 1 | |
| Female | 168 | 566 | 0.86(0.68, 1.07) | 0.93(0.61, 1.43) | 0.75 |
| Age group | | | | | |
| 15-19 | 188 | 975 | 1 | 1 | |
| 20-24 | 224 | 294 | 3.95(3.13, 4.99) | 1.05(0.67, 1.65) | 0.83 |
| Marital status | | | | | |
| Currently not married | 376 | 1216 | 1 | 1 | |
| Currently married | 34 | 53 | 2.06(1.32, 3.22) ** | 0.28(0.13, 0.56) ** | P<0.01 |
| Educational status | | | | | |
| Illiterate | 27 | 36 | 1 | 1 | |
| Primary | 36 | 97 | 0.40(0.24, 0.66) ** | 0.88(0.36, 2.15) | 0.78 |
| Secondary | 349 | 1521 | 0.51(0.33, 0.78) ** | 0.77(0.36, 1.64) | 0.49 |
| Number of sexual partners | | | | | |
| One | 104 | 286 | 1 | 1 | |
| Two or more | 308 | 983 | 0.86(0.67, 1.12) | 30.04(17.19, 52.48) ** | P<0.01 |
| Drink alcohol | | | | | |
| Yes | 306 | 554 | 1 | 1 | |
| No | 106 | 175 | 0.27(0.21, 0.34) ** | 0.72(0.45, 1.14) | .161 |
| Chew khat | | | | | |
| Yes | 167 | 215 | 1 | 1 | |
| No | 245 | 1054 | 0.30(0.23, 0.38) ** | 0.09(0.58, 1.45) | .701 |
| Condom use at first sex | | | | | |
| Yes | 37 | 228 | 1 | 1 | |
| No | 195 | | 1.84(8.03, 17.46) ** | 10.56(5.77, 19.32) ** | P<0.01 |
| Condom use at the | | | | | |

| | | | | | |
|----------|-----|-----|----------------------|-----------------------|-------|
| last sex | | | | | |
| Yes | 45 | 230 | 1 | 1 | |
| No | 367 | 197 | 9.71(6.75, 13.98) ** | 13.67(7.29, 25.66) ** | 0.003 |

** Statistically significant association

Table 4: Out of school and in school youth sexual behavior in relationship to selected socio-demographic variables, north Gondar, Northwest Ethiopia April 2007

| Variables | Ever practiced sex | | OR (95%CI) | | P. value |
|-----------------------|--------------------|-----|-----------------------|----------------------|----------|
| | Yes | No | Crude | Adjusted | |
| Out of school youth | 566 | 277 | 1 | 1 | |
| In-school youth | 269 | 569 | 0.23(0.19, 0.29) | 0.56(0.42, 0.74) ** | P<0.01 |
| Sex | | | | | |
| Male | 498 | 449 | 1 | 1 | |
| Female | 337 | 397 | 0.77(0.63, 0.93) ** | 1.56(1.11, 2.19) ** | .003 |
| Age group | | | | | |
| 15-19 | 403 | 760 | 1 | 1 | |
| 20-24 | 432 | 86 | 9.47(7.30, 12.30) ** | 7.10(4.92, 10.26) ** | P<0.01 |
| Educational status | | | | | |
| Illiterate | 50 | 13 | 1 | 1 | |
| Primary | 67 | 30 | 0.23(0.13, 0.43) | 0.50(0.24, 1.03) | .06 |
| Secondary | 718 | 803 | 0.40 (0.26, 0.62) | 0.81(0.41, 1.57) | .53 |
| Drink alcohol | | | | | |
| Yes | 601 | 259 | 1 | 1 | |
| No | 234 | 587 | 0.17(0.14, 0.21) ** | 4.97 (3.54, 6.97) ** | P<0.01 |
| Chew khat | | | | | |
| Yes | 315 | 67 | 1 | 1 | |
| No | 520 | 779 | 0.14(0.11, 0.19) ** | 6.38(4.30, 9.47) ** | P<0.01 |
| Marital status | | | | | |
| Currently not married | 751 | 843 | 1 | 1 | |
| Currently married | 84 | 3 | 31.43(9.89, 99.84) ** | 48.20(13.54, 171.65) | **P<0.01 |
| Video watching | | | | | |
| Yes | 422 | 143 | 1 | 1 | |
| No | 270 | 183 | 0.77(0.58, 0.91) ** | 2.15(1.44, 3.05)** | P<0.01 |

** Statistically significant association

DISCUSSION

From the total 1681 participants, almost half of them had sexual intercourse at least once in the 12 months prior to the study. Youth sexual practices ranged 61.8% and 55.2% for out of school and in school boys and 38.2% and 44.8% for out of school and in school girls

respectively. These figures are different when compared to the results of other studies, in Addis Ababa 52% for boys and 47.8% for girls (9), in Bahirdar 53% for females and 24% for males (10), and in Gondar the result ranged from 42% to 56.1% for both sexes (11), that ranged 31-59% in North Ethiopia (12), and in Southern Ethiopia 49% for both sexes (13).

Regarding sexual commencement, 56.7% of the female and 42.8% of the male respondents had reported that they experienced sexual intercourse before the age of seventeen, which showed early initiation of sex. Sexually active males were higher than females. However, the percentage distribution of males for out of school and in school youth were 61.8% and 54.7%, while female youth had constituted 38.2% and 45.3% for out of school and in school respectively. Out of 175 boys who had sex with commercial sex workers 109(62.3%) did not use condom and it is much higher than previous studies, such as 10.3% in Debrebirhan town (14), 27% in south Gondar (15), 21.4% in east Gojam (16), and 22.2% in Bahirdar (10).

The multivariate analysis also displayed that those who started sex at earlier age were two times more likely to have more than one sexual partner than the latter commencers. It was found that, alcohol intake and early age at first sex were significantly and positively associated for youth to have multiple sexual partners during the time of the survey. At most khat chewing was significantly and positively correlated with ever having sex (OR=0.14,95%CI=0.11,0.19 AOR=0.25,95%CI=0.17,0.35 and P<0.001).

CONCLUSION

Based on the findings of the study it could be concluded that high risk sexual behavior is much more prevalent among young.

- A large number of the youth populations are already sexually active.
- The age at sexual debut is very young.
- Many are indulged in risky sexual practices like unprotected sex, multiple sexual partnerships and with casual partners and commercial sex workers.
- Majority of the youth have comprehensive knowledge about HIV transmission and prevention.
- A large number of young people do not perceive themselves as being at risk of HIV acquisition.

- Alarming high number of youth reported being HIV positive and experiencing symptoms and signs suggestive of sexually transmitted infections.
- Consistent condom use is low among the youth.
- The number of sexually experienced out of school youth are twice the number of sexually experienced in school youth.

RECOMMENDATION

1. Information, Education and Communication and/ or Behavioral change communication programs should be established and a special emphasis on Reproductive Health and related issues in order to encourage the youth to delay sex and have skills to negotiate condom use.
2. Sexually active youth do not use condom as expected. This obviously led us to look for more accessible and effective ways of providing them the service. If condom is made available and accessible with affordable cost, this indispensably contributes to alleviate and relieve them from the fear of buying condoms from other exposing places.
3. Sensitize the community to encourage open discussion among family members in general and between parents and children in particular.
4. Encourage peer education programs
5. Educate and encourage the youth to use condom consistently. This can be done through government and non government organizations.

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THESIS-TWO

Assessment of Nutritional Care and Support for People Living With HIV/AIDS in Harar, Eastern Ethiopia.

Firehiwot Mesfin

ABSTRACT

Back ground: HIV/AIDS and malnutrition are inextricably interrelated. HIV compromises the nutritional status of infected individuals and, in turn, malnutrition worsens the effects of the disease by weakening the immune system. Nutritional management can, therefore, be used as part of the holistic HIV/AIDS care package to help the victims of pandemic improve their overall quality of life.

Objective: The main objective of this study is to assess the nutritional care and support for People Living with HIV/AIDS (PLWHA) in Harar town.

Methods: Qualitative community based study with FGD, in-depth interview and document review were utilized. Sampling was purposive that program coordinators, health workers, home based care providers and beneficiaries of the care and support services (PLWHA) were involved. Collected data coded by category, analyzed and presented using open code.

Result: Beneficiaries were receiving 10 kg of teff and one liter of cooking oil as well as financial support ranging from 50 to 200 Ethiopian birr per person per month to cover part of their living expenses. Shortage of budget for HIV nutrition care and support activities was mentioned at all levels of care and support providing organizations. The organizations had no well defined nutrition care and support strategic plan and mechanisms for tracking their performance.

Conclusions and Recommendations: The nutrition component though a major priority area of the care and support services it is not well addressed. The majority of the beneficiaries felt that the type of the socioeconomic support was inadequate. Clearly HIV-positive people are in need of improved nutrition through whatever means are appropriate and feasible.

INTRODUCTION

HIV compromises the nutritional status of infected individuals and, in turn, malnutrition worsens the effects of the disease by weakening the immune system. Nutritional interventions can help People Living with HIV/AIDS (PLWHA) manage symptoms, reduce susceptibility to opportunistic infections, promote response to medical treatment, and improve overall quality of life. The HIV/AIDS pandemic also significantly compromises the food security of affected households and communities, reducing the availability of productive labor, diverting income, depleting savings and productive assets, overwhelming social networks and safety nets, and impeding intergenerational knowledge transfers (1,2,3).

The majority of people with HIV/AIDS live in countries where health care, resources and drugs are scarce. For them, good nutrition is a positive way to respond to the illness. It can help maintain body weight and support the effective action of drug treatments (4).

Along with other benefits, nutritional care for individuals with asymptomatic HIV helps people to avoid nutrient deficiencies and maintain healthy body weights. Following effective nutritional care guidelines helps the symptomatic person living with HIV to improve their response to medications and to deal with metabolic changes. Clinical standards of care that include nutritional services will soon be the foundation for HIV disease management (6, 7).

An effective program of nutritional care and support promote well-being self-esteem and a positive attitude to life for people and their families living with HIV/AIDS. The objectives for such programs include: to Improve or develop better eating habits and diet among people with HIV/AIDS, build or replenish body stores of micronutrients, prevent or stabilize weight loss, prevent food-borne illnesses, manage AIDS- related symptoms that affect food consumption and dietary intake, and provide nutritious food for AIDS- affected families living in conditions of food insecurity (8).

In Ethiopia, the government policy on HIV/ AIDS is geared towards the implementation of preventive programs and the provision of rehabilitative service to those already infected and affected by the virus. The care and support system constitutes the core of the rehabilitation component of the policy. Currently, various governmental and non- governmental agencies as well as community based organizations (CBOS) are actively involved in providing some form of care and support services (9).

Nutritional intervention studies conducted in some communities in Africa suggested that early intervention to improve the energy and protein intakes of people living with HIV help build their reserves and reduce their vulnerability to weight loss associated with diarrhea and other opportunistic infections (10).

Qualitative research that was conducted in Kenya indicate that: food support intervention to the most vulnerable patients on treatment and their households, plays an important role in the emotional well-being of clients by lowering stress caused by insufficient access to food. Many patients in the supplementation program also self-report recovery of physical strength that allowed them to return to productive life and greater adherence to treatment (11).

A study conducted on HIV/ AIDS – food security and nutritional interface, and rapid assessment of the state of nutritional care and support services for PLWHA observed that, the number of PLWHA deserving comprehensive care and support services is growing and the demand for care and support services is yet unmet. Ongoing services for PLWHA are uncoordinated, inadequate and more focused on irregular handout of food, finance, and clothing.

Care / service providers though highly dedicated are not sufficiently trained, lack manuals and guideline. There is no uniformed and standard training manual and guideline on nutritional care and support for PLWHA. Available training manuals for care providers are deficient on basic nutritional component. The household food availability of PLWHA is very low and their demand for food aid is vivid (13).

The study conducted in Addis Ababa to assess the need of care and support of PLWHA indicate that nutritional support for PLWHA is more complex than the mere supply of adequate and regular provisions. FGD participants pointed out that current dietary provision are inconsistent and minimal. In addition current nutritional provisions, which are mainly in the form of wheat, cooking oil, teff and fafa rations, may not represent the felt nutritional needs of the recipients (9).

Nutritional management can therefore be used, as part of the holistic HIV/AIDS care package to help people living with HIV/AIDS remains healthy, economically productive, and improving the quality of their lives.

Little systematic information is available on HIV/ AIDS nutritional care and support services in Ethiopia. On the basis of information from organizations providing care and support services for PLWHA, this study tried to answer the following questions. What type of nutritional care and support exist in the town? What is the nutritional care need of PLWHA and their families? What challenges do PLWHA face in accessing the existing care and support networks? Predominantly, the answers to these questions would facilitate the provision of affordable, effective and holistic care and support services to PLWHA and their families.

OBJECTIVES

General objective

To assess the nutritional care and support services for PLWHA in Harar town.

Specific objectives;

- To examine the existence of strategic planning and collaboration among the organizations in respect to various nutrition care and support activities for PLWHA.
- To assess the existing nutrition care and support services for PLWHA.
- To identify strengths and problems encountered in the provisions of nutrition care and support services.

METHODS

Study design: A qualitative community based study was carried out at Harar town between January and April 2007.

Study area: The study was conducted in Harar town, which is the capital city of Harari People National Regional state. The town is located in the Eastern part of the country, 515 kms away from the capital, Addis Ababa. According to the 2006 AIDS report, in Ethiopia there are 5236 PLWHA, 3008 AIDS orphans and 1080 PLWHA taking ART in Harai region.

Study population: Beneficiaries of the care and support services (PLWHA) and home based care providers were the study population for the focus group discussion. Heads of the organizations, coordinators of the program of care and support services and trained nurses in the clinical area (ART, PMTCT clinic) were interviewed in-depth.

Sample size and sampling procedure

Purposive sampling was employed to select key informants and participants for group discussion.

A total of six FGD, two from home based care providers and four FGD from PLWHA, (two from each category; male and female) were included. Each focus group contains 6-8 participants. Fourteen key informants were selected from care and support organizations, management and coordinating office and clinical areas for in-depth interview. Participants were selected based on the proximity of the individual for the issue, and being involved in the provision of care and support for PLWHA.

Data collection procedures

Data was collected via in-depth interview with key informants and focus group discussion with HBC and beneficiaries (PLWHA). Properly designed interview guide and semi structured questionnaire was used to collect data from both service providers and program coordinators. The major variables included in the questionnaires were demographic factors, responsibilities of the organizations, any documented strategic plan and allocated budget, problems encountered and suggestions to improve nutrition care and support. The FGD mainly addresses issues like; types of socioeconomic support existed for PLWHA, type of home- based nutrition care provided, linkage of HBC program with other care and support organizations, problem faced in accessing the nutrition care and support and adequacy and variety of food supply.

In-depth interview was conducted before the focus group discussion to help in generation of adequate information.

Data collectors were recruited from the respective study area and were trained about data collection method. They were particularly trained on ways of conducting the interview and managing focus group discussion. All discussions were audio taped and short notes were taken while the discussion is in progress. All data collection activities supervised by principal investigator and any problems faced were discussed.

Data processing and analysis

Debriefing was carried out immediately after each focus group discussion. Data were translated, sorted and categorized by using open code. Finally the core categories and themes were identified and translation and description of the findings were carried out. Systematic comparison was made between groups and individual interviews.

Ethical considerations

Initially letter of ethical approval and permission was obtained from the University of Gondar Research and Publication Office and the Ethiopian Public Health Association (EPHA). Further permission was obtained from Harari HIV/ AIDS Prevention and Control Office. Before the data collection, verbal consent was also obtained from each individual. The participants of the study were given adequate explanation about the purpose of the study and they were informed that the information collected would be kept anonymous and participation was totally voluntary.

RESULTS

According to AIDS in Ethiopia sixth report there are 5236 PLWHA and 3008 AIDS orphans in Harari region. At the time of the study there were 320 PLWHA (6.1%) and 361(12%) AIDS orphans and OVC registered under the Dawn of Hope and OSSA for care and support services. Forty (12%) PLWHA were involved in the study.

The total number of the study participants was 54; of these 53.8 % were females. Of the total number of respondents, 48% were beneficiaries, 25.9% were home based care provider and the rest from care and support providing organizations. Their socio-demographic characteristics presented in Table 1. Most of the respondents were young adults (65.4%), Protestant in religion (80.8%), married (38.5%), grade 1-8 (53.8%), house wives (46.2%) and daily laborer (46.2%).

Care and support service providing organizations

Ten care and support service providing governmental and non- governmental organizations were included in the study. The Harari Regional Health Bureau and HIV/AIDS Prevention and Control Office (HAPCO) were coordinating the HIV care and support activities in Harari.

Care and support services provided by the organizations were: HBC programs, socioeconomic support, food support, medical support, nutrition education and counseling and support of AIDS orphans and other vulnerable children. Clinical nutrition care was given mostly by the hospitals while NGOs were focusing mainly on HBC and socioeconomic support. (Table 2)

Two of the organizations have been operating for over 10 years, 2 were between 5 and 9 years and 6 were 1-4 years.

Table 1: Socio-Demographic characteristics of the study subjects in the focus group discussion and in-depth interview in Harar, 2007

| Variables | FGD participants | | In depth-interview participants | |
|---------------------|-------------------------|-------------------------|---------------------------------|------------------------|
| | Beneficiaries N = 26 | HBC providers N = 14 | Program coordinators N = 10 | Trained nurses N= 4 |
| Sex | | | | |
| Male | 12 (46.2%) | 0 (0.0) | 8 (80.0 %) | 2 (50%) |
| Female | 14 (53.8%) | 14 (100%) | 2 (20.0%) | 2 (50%) |
| Age in years | | | | |
| 18-30 | 17 (65.4%) | 11 (78.6 %) | 4 (40%) | 4 (100%) |
| 31-64 | 9 (34.6%) | 3 (21.4%) | 6 (60%) | - |
| 64+ | - | - | - | - |
| Marital status | | | | |
| Married | 10 (38.5%) | 6 (42.9%) | 7 (70%) | 2 (50%) |
| Widowed | 6 (23.1%) | 4 (28.6%) | - | - |
| Divorced | 4 (15.4%) | - | - | - |
| Unmarried | 6 (23%) | 4 (28.6%) | 3 (30%) | 2 (50%) |
| Religion | | | | |
| Orthodox | | | | |
| Protestant | 21 (80.8%) | 7 (50%) | 8 (80%) | 1 (25%) |
| Muslim | 2 (7.7%) | 6 (42.9%) | - | 1 (25%) |
| Catholic | 3 (11.5%) | 1 (7.1%) | 2 (20%) | 2 (50%) |
| Others | | - | - | - |
| Education | | | | |
| Illiterate | 6 (23.1%) | 2 (14.3%) | - | - |
| Read and write | 3 (11.5%) | - | - | - |
| Grade 1-8 | 14 (53.8%) | 4 (28.6%) | - | - |
| Grade 9-12 | 2 (7.7%) | 8 (57.1%) | - | - |
| Grade > 12 | 1 (3.8%) | - | 10 (100%) | 4 (100%) |
| Occupation | | | | |
| Government employee | 2 (7.7%) | 1 (7.1%) | 10 (100%) | 4 (100%) |
| | | 4 (28.6%) | - | - |

| | | | | |
|---------------|-------------|-----------|---|---|
| Daily laborer | 12 (46.2%) | 6 (42.9%) | - | - |
| House wife | 10 (38.5%) | 3 (21.4%) | - | - |
| Student | - | - | - | - |
| Others | 2 (7.75%) | | | |

Table2. Type of care and support services provided by the government and non-government organizations in Harar town 2007

| Name of organizations | Nutrition education and counseling | Nutritional assessment | HBC | IGA | Socioeconomic support | ART | PMTCT |
|---|------------------------------------|------------------------|-----|-----|-----------------------|-----|-------|
| Hiwot Fana Hospital (GO) | √ | √ | | | | √ | √ |
| Misrak Arbegnoch Hospital (GO) | √ | √ | | | | √ | √ |
| Dawn of Hope Ethiopia (NGO) | √ | | √ | √ | √ | | |
| OSSA (NGO) | | | √ | √ | √ | | |
| Lutheran Church Child development (NGO) | √ | | √ | | √ | | |
| Finote Selam AAC | | | √ | | √ | | |
| Tsenat AAC | | | √ | | √ | | |
| Zeimana Weldach Mugad Association (NGO) | | | | | √ | | |
| Edir and Afocha (CBO) | | | | | √ | | |
| Social and Labor Affairs | | | | | √ | | |

Existence and use of strategic plans to implement HIV/AIDS intervention activities

Though the Harari Health Bureau and the Harar HAPCO had documented strategic plans for HIV/AIDS activities; they did not include nutrition care and support activities. Of the ten care and support providing organizations, only three had strategic plans for HIV/AIDS care and support services and of these only two were implementing HIV/AIDS interventions according to their strategic plans. Some organizations had the plans that were not being implemented. The rest of the organizations had no documented strategic plans. The management and coordinating level organizations lacked the necessary follow-up and effort to monitor their activities and mechanisms for tracking their performance.

Collaboration and networking

It was learned that the collaboration took place in terms of sharing of resources, training of HBC providers, financial support to community based organizations, information exchange and reporting, capacity building and clinical care.

Some of the organization representatives were generally satisfied with the existing level of collaboration while the others were not. It was mentioned that poor networking existed among organizations implementing HIV/AIDS care and support activities and the coordinating and supervisory bodies. The involvement of the Harari Regional Health Bureau in HIV/ AIDS care and support activities was below what was expected of it.

Nutrition education and counseling that include advice to consume locally available food, to avoid eating uncooked food, and to eat small and frequent meals during illnesses and the management of common side effects were provided at the ART clinic, during home based care. Respondents emphasized the need for increased vigor in HIV/AIDS nutrition information and education in particular, its approach and materials needed to be tailored to the needs of PLWHA. Some participants mentioned that HIV nutrition education and counseling should not be a once-in-a-life time experience, as is the case often currently. They suggested that the service should be provided more frequently and consistently. It was found out that only health workers at the clinical care institutions (PMTCT and ART clinic) used the guideline to provide nutrition education and counseling.

Home-based nutrition care

The major type of care and support service provided by organizations for PLWHA was home-based care (HBC). This care was provided for PLWHA who were bedridden because of AIDS and for HIV infected children. Organizations used mainly volunteers; PLWHA female care

providers, ranging from 4-20 HBC providers/ organization. Trained home care agents, including individuals with and without the virus were responsible for this care. HBC providers said that the program had linkages with other care and support service-providing institutions, mainly with hospitals, the Dawn of Hope and OSSA or CBOs to some extent.

Major challenges facing HBC nutrition programs as described by HBC providers were an increased demand for services, inadequate funding and food supplies, and lack of training on nutrition and HIV and transport problems. All HBC providers emphasized that shortage of food items at the house hold level affected this program. The other problem reported by HBC was rejection of referred clients by care and support providing organizations.

Socioeconomic support

The types of socioeconomic support provided by the organizations were food, follow-up & counseling, legal support and financial & medical.

Members reported that the care and support organizations provided them with food including; rations of teff, wheat, edible oils and fafa. Each month, they had been receiving 50.00 – 200.00 Ethiopian birr per head to cover part of their living expense. The majority of socioeconomic support service beneficiaries commented on the inadequacy of the services they received covers their living expenses.

Beneficiaries of care and support reported that they were receiving medical support. The support involved the reimbursement of medical expenses or direct provision of free medical services to the beneficiaries by the organizations. The beneficiaries receiving medical support complained that the amount of support was inadequate because important medicines were in short supply at government health institutions.

Support for orphans and other vulnerable children (OVC)

Orphan care and support was the major type of service offered by care and support organizations. For HIV infected orphans nutritional support, school lunch, house rent and medical care were provided. For OVC the service included financial support, food support, and provision of clothing, medical support, supplies of educational materials, vocational training, counseling, housing, and legal support.

Arrangements were made for major holidays, such as Christmas, Easter, New Year and Id Ul-Fitr (the Muslim festival marking the end of Ramadan).

Problems encountered by PLWHA in accessing nutrition care and support services

The major problem singled out by male and female FGD participants was the practice of withholding services from individuals who were already receiving support from the Dawn of Hope and OSSA.

They pointed out that their HIV/AIDS status forced them to become heavily dependent on what they could procure from the care and support networks.

The main expectations involved psychosocial stress over where to get enough food to meet their nutritional needs, balancing competing food needs with other household resource requirements, and having less food available, when they further perceive their deteriorating living conditions and the outcome would be a decline in their strength and health status.

Perceived strengths and encountered problems

Management and service provision level organizations reported their perceived strengths as availability of dedicated, motivated and committed staff, existence of HIV/AIDS policy in Ethiopia, training given for HBC providers, networks with other organizations for care and support activities and community involvement in support and care activities.

Encountered problems

The care and support provision level organizations identified an assortment of problems related to nutrition care and support. Problems related specifically to service provision include, lack of resources, increased demand for services and lack of training. All the service provision level organizations including NGOs, all government hospitals and CBOs, said that they faced budgetary constraints for their HIV care and support activities. These constraints were affecting program implementation, staff training, HBC providers' incentives, and program expansion.

One of the key informants from care and support organization noted: "Because of the high demand for support we cannot handle the situation. As a result, most of the time we are forced to close our office."

The other problems reported by the organizations were lack of well defined strategies for nutrition care and support and lack of nutrition training for caregivers & volunteers.

Additional problem reported from clinical care institutions by health workers were lack of guidelines and educational materials to provide nutrition education for HIV positive pregnant mothers and rejection of clients by care & support providing organizations

DISCUSSION

The aim of this study was to assess the nutrition care and support for People Living with HIV/AIDS, and to identify problems encountered in provision of the services.

Though different organizations were involved in the provision of care and support activities, focus group discussion showed that only Dawn of Hope and OSSA rendered the largest proportions of HIV/AIDS nutrition care and support services. As a result, the existing nutrition care and support services remained inadequate in the face of growing demand.

This finding is supported by the findings of the previous studies (8, 9). PLWHA craved social acceptance and empathy to help them deal with the traumatic nature of their situation. They also demanded that the government give greater attention to PLWHA so that the conditions they faced could be better addressed and their various requirements are duly satisfied. Despite the presence of a national HIV/AIDS policy with specific provisions for PLWHA, the general feeling expressed by individual and group discussion participants was that these measures did not go far enough and the Participants felt that rehabilitation aspects of the policy had received only marginal attention (9).

Though the management and coordination level organizations reported that as they had a documented HIV/AIDS strategic plan in their offices, nutrition care and support activities were not included in their plan. Some of care and support providing organizations had strategic plans for HIV/AIDS nutrition care and support services and tried to implement activities according to their strategic plans. The rest of the organizations had no documented strategic plans.

This finding is supported by the previous study result (13). In dealing with an epidemic such as AIDS, a strategy is a very important tool in the implementation of a well-planned response.

In this study the respondents indicated that high proportion of organizations lacked mechanisms for tracking their performance. This finding is in agreement with the result of previous study findings (9,13). Ongoing evaluation and analysis of the impact of previous

care and support activities was required to correct mistakes and introduce the necessary improvements.

This study finding identified that Informal networking existed amongst organizations implementing HIV/AIDS activities and the coordinating and supervisory bodies. The involvement of the Regional Health Bureau in HIV/AIDS care and support activities was less than what was expected. Previous studies have also confirmed similar findings (19,10,13). Providing comprehensive and effective care and support for people affected by HIV is a concern of all organizations working on the area to reduce the impact of AIDS.

This study result revealed that nutrition education was provided late when the patients had started ART or registered for care and support services. The universal provision of nutrition education to all patients regardless of whether they were on ARV treatment or not was one measure to address patient's needs. To allow maximum benefit and cost-effectiveness, nutritional intervention and education should start at the time of initial HIV-positive diagnosis and continue throughout the disease process (5).

Home based nutrition care seems to be one solution to the problem of providing care for AIDS patients. Of course, networking with medical care and socioeconomic support is crucial if HBC nutrition programs are to be effective and capable of referring patients when the need arises. The organizations used mainly trained PLWHA female care providers. It was felt that care-providers living through the same experience as the beneficiaries would show special sympathies to their fellows.

Even though HBC providers were involved in nutrition care and support activities, FGD showed that they had capacity limitation in terms of resources, sufficient training on nutrition and HIV and guideline. The numbers of patients addressed by the program were less as compared to the progressively increasing number of AIDS patients.

Almost all of the socioeconomic support service beneficiaries commented on the inadequacy of the services they received. Supplies were not only inadequate but they also lacked variety; for example, supplies often consisted of only one type of food, such as wheat, teff, or cooking oil. This is supported by the results of previous studies (9, 10, 12, and 13)

It has been proven medically that the amount and quality of nutrition a person can obtain has a direct bearing on his or her longevity and capacity to withstand the debilitating effects of HIV. According to WHO, asymptomatic PLWHA are recommended to increase energy intake by 10 percent while symptomatic individuals should increase their intake by 20-30 percent (5).

When knowledge of each specific guideline was considered amongst the organizations providing that specific service, only health workers who provide PMTCT and ART knew that

national guidelines existed and used them. The study results indicated that there was lack of national guidelines to be used at the service provision level in the HIV nutrition care and support activities. This finding is in agreement with the previous study results (12, 13).

This study revealed that the care and support provision level organizations mentioned an assortment of problems relating to nutrition care and support. Problems included; a lack of budget, well defined strategies for nutrition care, increased demand for services, problems with the referral process and lack of training. This finding is in agreement with the previous study result (22). These budgetary problems are surprising since a lot of donating agencies had allocated sufficient funding for HIV/AIDS activities.

The other important issues that should not be overlooked with regard to nutrition care and support program is its sustainability.

Members of formal and informal networks may initially support people when they are sick, but their long-term ability and willingness to support, as the needs of the individual with HIV may wax and wane over the course of the disease, is uncertain. The food supplementation program further demonstrates the need to promote linkages and external partnerships based on comparative advantage. Taking a broader perspective on nutrition security, it is critical to address who can and will fill this role after the short-term intervention ends. Even a comprehensive and currently well-funded program cannot create and maintain a system of social protection for patients that spans the duration of their care. This study also suggests ways of improving nutrition care and support services for PLWHA. For example, Increase involvement of community-based organizations, develop income generating activities and increase focus on HIV care and support services. This may build the capacity of PLWHA groups so that they become less dependent on instructive players in response to AIDS.

Conclusions and Recommendation

Conclusion

In conclusion the nutrition component as a major priority area of care and support services is not well addressed. Ongoing services for PLWHA are uncoordinated, inadequate and more focused on irregular handout of food, finance, and clothing.

On the other hand, the number of PLWHA deserving comprehensive care and support services was growing and the demand for care and support services was yet unmet.

Recommendation

- To this end, it is recommended that clearly HIV-positive peoples are in need of improved nutrition through effective means that are appropriate and feasible.
- The importance of integrating nutrition care and support into existing HIV/ AIDS program objectives is being increasingly recognized.
- Although HIV/AIDS is the concern of all, the Regional HAPCO has to assume leadership in the coordination, collaboration, monitoring and evaluation of care and support activities for PLWHA.
- As some of the components of HIV intervention activities are linked with health facilities, the Regional Health Bureau is also expected to involve in the response actively.

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Thesis-Three
**Knowledge, Attitudes and Practices towards Prevention of Mother to Child
Transmission of HIV among
Antenatal Care Mothers in Mekelle, North Ethiopia.**

Solomon G/Kidan

ABSTRACT

Background: HIV/AIDS is currently a major public health problem in Ethiopia and Mother-to-child transmission (MTCT) is by far the largest source of HIV infection in children below the age of 15 years. For women to take advantage of measures to reduce transmission, they need to know their HIV status.

Objective: the objective of the study was to assess knowledge, attitude and practice of the PMTCT of HIV among antenatal care mothers.

Methods: A health institution based cross-sectional study was conducted in Mekelle zone from January to April 2007. A total of 461 pregnant mothers were interviewed from three health centers and one hospital. Proportional distribution of samples was carried out to attain the required sample size. Data were entered and processed into the computer using EPI info version 6 and SPSS version 10 statistical packages.

Results: almost all the 457(99.1%) respondents had heard about HIV/AIDS of which, 419 (92.7%) mentioned the major routes of transmission and 437(94.8%) knew that HIV could be transmitted from an infected mother to her baby. Most of the respondents 433 (93.9%) knew that MTCT of HIV is preventable. Four hundred fifty seven (99.1%) of the pregnant mothers have positive attitudes towards VCT, 323(84.6%) of the mothers were tested for their current pregnancy and among 301 (78.8%), reason for testing was to protect "my" child from HIV. Pregnant women with two to three and more than three visits were less likely accepting PMTCT as compared to only first visit [OR=0.10, 95% CI 0.03,0.36], [OR=0.12, 95% CI 0.04,0.38] respectively.

Conclusion and Recommendation: most mothers knew that HIV could be transmitted from Mother to her fetus and its preventive methods. Health education targeted on male partners, and community at large on PMTCT and VCT would have paramount importance using different sources.

Key words: Mekelle zone, knowledge, PMTCT

Introduction

Mother-to-child transmission (MTCT) of HIV remains a major public health problem worldwide, especially in resource-constrained countries, to more than 95% of all people living with HIV/AIDS [1].

Globally, 37.8 million people are at present living with HIV/AIDS, of which 17.0 million are women and 2.1 million are children under 15 years old. Most of the infections in children younger than 15 years old occur through MTCT of HIV [2]. The risk of acquiring the virus from an infected mother to a baby ranges from 15% to 25% in industrialized countries to 25 - 35% in developing countries largely due to breast-feeding practice [3]. Mother to child transmission is causing great social problems producing orphans after the death of one or both parents due to AIDS [4].

Seventy Seven percent of all women living with HIV reside in Sub Saharan Africa [5].The overall unadjusted HIV prevalence among pregnant women attending ANC clinic was 5.3%. HIV prevalence for Tigray Region was estimated to be 4.2% for the year 2005 [6, 7].

In Ethiopia, only 3.03% of HIV positive pregnant women receive a complete course of antiretroviral prophylaxis to reduce the risk of mother to child transmission of HIV [8]. VCT provides people with an opportunity to learn and practice about their serostatus in confidential environment. Pregnant women who are aware of their status can prevent transmission to their infant (MTCT) [9].

1.2 Literature Review

Rate of transmission of HIV from mothers to children have varied in different parts of the world as 12-30% in the United States and Europe, 25-52%) [10] in Africa and Haiti and in Ethiopia, it ranges from 29-47% [11].

In a study done in India in 1999, about 81% of the 269 study subjects heard about HIV/AIDS. About 54% reported that they did not know ways of spread, 39% reported sexual contact, 18% mentioned injection, and 8% through blood, 4% mentioned commercial sex workers and only one person said MTCT. In Ghana, majority of mothers agreed that the virus could be transmitted during pregnancy (49%), delivery (91%) and breast-feeding (86%). About 40% of the participants indicated that MTCT could not be prevented and another 14% did not know how to curtail MTCT [12,13] while in Jimma 38.8% had sufficient knowledge about MTCT and PMTCT of HIV (41.8%) and 84% of mothers visited health institutions for antenatal care out of whom 35.7% used VCT services during their last pregnancy [14].

In Zimbabwe among 186 women attending an ANC, only 23% of women consented to VCT. A similar result was observed in Botswana [15]. In Gambella town, only 4.5% of the participants did not have heard of HIV/AIDS. The commonly reported modes of transmission were unprotected sex (79.8%) and unsafe blood transfusion (64.2%) and less than 1% reported that they know MTCT of HIV

The prevalence of HIV/AIDS in Tigray in 2005 estimated to be 4.7% and 5.7% among pregnant mothers.

The KAP of the pregnant mothers related to PMTCT of HIV/AIDS was not assessed. Therefore, this study investigated the Knowledge, Attitude and Practice related to PMTCT of HIV/AIDS among pregnant women in Mekelle zone to improve use of services, design and implement appropriate behavioral change communication (BCC) strategies.

OBJECTIVES

General objective:

To assess knowledge, attitude and practice of prevention of mother to child transmission of HIV/AIDS and its factors influencing among the pregnant women who attend antenatal care services.

Specific objectives:

It is to determine knowledge, attitude and practices towards PMTCT of HIV/AIDS among pregnant women.

To identify factors influencing Prevention of mother to child transmission of HIV/AIDS among pregnant women.

METHODS

Study Design

A cross-sectional study to assess knowledge, attitude and practice of the mothers attending ANC towards PMTCT was conducted from January to April 2007 in Mekelle zone, North Ethiopia.

Study Area

The study was conducted in Mekelle town 783 km north of Addis Ababa, in Tigray administrative region. A total of 2490 pregnant women visited antenatal care clinics in the same year. There were five VCT and four PMTCT centers.

Study Population

The study subjects were pregnant women attending ANC for their current pregnancy in Mekelle Hospital, Semien H.C, Mekelle H.C, and Kasech H.C.

Inclusion criteria

Pregnant women attending Antenatal care service and volunteer for interview.

Exclusion criteria

Communication problem is considered.

Sample size determination

Sample size was calculated using Epi-info software using the 70% proportion (70 % of respondents in BSS 2002 in Tigray knew that an HIV infected mothers can transmit the virus to their baby through breast-feeding (18).Using single population proportion formula, the minimum sample size required for the study was obtained [22].

$$\text{Formula } n = \frac{z^2 p (1-p)}{d^2}$$

Where n= the required sample size

p = the estimated prevalence rate (0.7)

z (1- alpha) = the value of standard normal distribution corresponding to a significant level of alpha. (1.96)

d= Margin of error (0.04)

Since the study population (N=2490) was less than 10,000, we reduced the sample size by calculating $n = (n/1+n/N)$. The calculated sample size was 419. Non-response rate in this study was estimated to be 10 % i.e. 42, and hence an overall sample size of 461 pregnant women was taken.

Sampling procedure

Based on the number of clients who visited each health institution of the last year, proportional distribution of samples was carried out to attain the required sample size.

Variables of the study

Dependent variables

Knowledge about MTCT and PMTCT of HIV/AIDS

Attitudes towards VCT for PMTCT of HIV/AIDS

Practice towards VCT for PMTCT of HIV/AIDS

Independent variable

- Socio-demographic factors like age, ethnic group, religion, educational status, occupation of pregnant women, marital status, monthly family income, number of pregnancies, number of antenatal care visits and occupation of her husband/partner.

- Risk perception of HIV

Operational definitions.

Knowledgeable: -those study participants who scored points equal to and more than the mean score out of the 4 and 6 items transmission and prevention question.

Not knowledgeable: those study participants who scored less than the mean score out of the 4 and 6 items transmission and prevention question.

HIV/AIDS, VCT and PMTCT.

Data collection procedures

Closed and open-ended questions were developed in English and then translated to Tigrinya and then back to English to check for its consistency. Eight individuals who completed high-school were trained for two days by the principal investigator and nurses were recruited for supervising. The supervisors were checking filled questionnaire for completeness.

The interview was administered in the health institutions at one corner of the MCH unit after a women completed the antenatal follow up examination.

Data processing and analysis

Data entry and cleaning was done on EPI info version 6 and SPSS version 10. The data analysis was done using frequency, percentage, measures of central tendency and measures of dispersion when it was appropriate. Odds ratio was also used with 95% confidence intervals.

Ethical considerations

Ethical clearance was obtained from the University of Gondar, research and publication office. Permission was obtained from the Tigray Regional Health Bureau, Mekelle Zonal Health Bureau and Health Institutions. The purpose of the study was explained for the study participants in order to get informed verbal consent. A written consent form was read to each respondent to obtain their agreement.

To maintain confidentiality of the subjects, names were not registered on the questionnaire.

Results

A total of 461 pregnant mothers were interviewed at the antenatal follow up of Mekelle Hospital and the three health centers involved in the study.

Mean age of the mothers was 25.33 ± 5.58 years. For most respondents, occupation of male partners/husbands was private employees 141(30.5%) followed by Government employees 140(30.4%) (Table-1)

Table 1: Socio-demographic characteristics (n=461) of pregnant women attending antenatal care, Mekelle zone, North Ethiopia, January –April 2007.

| Variables | | | |
|-------------------------------------|-------------------------|-----|------|
| Age group | 15-19 | 62 | 13.4 |
| | 20-24 | 169 | 36.7 |
| | 25-29 | 127 | 27.5 |
| | 30-34 | 64 | 13.9 |
| | 35 and above | 39 | 8.5 |
| Ethnic group | Tigray | 446 | 96.7 |
| | Amahara | 15 | 3.3 |
| Religion | Orthodox | 400 | 86.8 |
| | Muslim | 57 | 12.4 |
| | Catholic/Protestant | 4 | 0.9 |
| Educational status | No formal education | 99 | 22.2 |
| | Primary | 190 | 50.3 |
| | Secondary | 137 | 36.2 |
| | Tertiary and above | 35 | 9.3 |
| Occupation of pregnant women | Government employee | 48 | 10.4 |
| | Private employee | 40 | 8.7 |
| | House wife | 320 | 69.4 |
| | Student | 18 | 3.9 |
| | Tella seller | 15 | 3.3 |
| | Other | 20 | 4.3 |
| Family income | <100 ETB | 6 | 1.3 |
| | 101-300 ETB | 44 | 9.5 |
| | 301-500 ETB | 92 | 20.0 |
| | >500 ETB. | 285 | 61.8 |
| | Did not mention | 34 | 7.4 |
| Marital status | Married | 413 | 89.6 |
| | Single/widowed/divorced | 48 | 10.4 |
| Parity | Primipara | 158 | 34.3 |
| | Multi gravida | 286 | 62.0 |
| | Grand multipara | 17 | 3.7 |
| ANC visit | First visit | 58 | 12.6 |
| | Two to three visits | 165 | 35.8 |
| | More than three visits | 238 | 51.6 |
| Profession of husband | Government employee | 140 | 30.4 |
| | Private employee | 141 | 30.5 |
| | Merchant | 45 | 9.8 |
| | Construction worker | 63 | 13.7 |
| | Driver | 26 | 5.6 |
| | Soldier | 15 | 3.3 |
| | Other | 31 | 6.7 |

Almost all the 457 (99.1%) respondents reported to have heard about the disease HIV/AIDS. 437 pregnant women (94.8%) knew that HIV can be transmitted from a mother to her child, of these, 419 (95.9%) knew during child birth, 409(93.6%) knew during pregnancy and 400(91.5%) knew during breast feeding.

Pregnant women who had two to three and more than three visits have OR= 0.41 and 0.54 less knowledge about MTCT of HIV than those only on first visit [OR= 0.41, 95%CI 0.21, 0.83], [OR= 0.54, 95%CI 0.31, 0.91] respectively(Table2).

Partner/ husband of pregnant women private employed had 2.28 times more knowledge about PMTCT of HIV as compared to Government employed [OR=2.28,95% CI 1.10, 4.75].

Table2. Knowledge of pregnant women on the possibility of MTCT of HIV vs. Socio-demographic variables , Mekelle zone, North Ethiopia, January –April,2007.

| Variables | | Knowledge on MTCT of HIV | | |
|-------------------------------|---------------------|--------------------------|--------------------|------------------------|
| | Yes | No | Crude OR, 95%CI | Adjusted OR** 95%CI |
| Age group | 15-19 | 48 14 | 1.00 | 1.00 |
| | 20-24 | 140 29 | 0.59(0.12,3.27) | 0.46(0.20,1.07) |
| | 25-29 | 103 25 | 0.91(0.23,3.67) | 0.64(0.31,1.33) |
| | 30 and above | 90 12 | 0.32(0.08,1.24) | 0.55(0.26,1.16) |
| Ethnic group | Tigray | 369 77 | 1.00 | 1.00 |
| | Amahara | 12 3 | 0.001(0.00,4.90) | 1.198(0.33,4.3) |
| Religion | Orthodox | 324 76 | 1.00 | 1.00 |
| | Muslim | 53 4 | 0.003(0.00,6.48) | 0.01(0.00,7.4) |
| | Catholic/Protestant | 3 1 | 0.02(0.00,5.14) | 0.03(0.00,2.3) |
| Educational status | No formal education | 14 2 | 1.00 | 1.00 |
| | Primary | 155 35 | 22.0(1.71,283.92) | 2.42(0.46,12.8) |
| | Secondary | 118 19 | 8.88(2.26,34.90) | 1.53(0.66,3.56) |
| | Tertiary and above | 26 9 | 9.99(2.52,39.58) | 2.15(0.87,5.28) |
| Occupation of pregnant | Government employee | 43 5 | 1.00 | 1.00 |

| | | | | |
|------------------------------|-----------------------------|-----------|------------------|------------------|
| women | Private employee | 31 9 | 5.19(0.50,53.75) | 1.72(0.37,8.08) |
| | House wife | 260 60 | 1.36(0.17,10.93) | 0.69(0.16,2.92) |
| | Other | 15 3 | 0.82(0.13,5.14) | 0.87(0.24,3.09) |
| Family income | <100 ETB | 27 13 | 1.00 | 1.00 |
| | 101-300 ETB | 29 15 | 0.31(0.08,1.19) | 0.33(0.16,0.69)* |
| | 301-500 ETB | 79 13 | 0.15(0.04,0.57) | 0.31(0.15,0.62)* |
| | >500 ETB. | 246 39 | 0.86(0.29,2.55) | 0.96(0.49,1.90) |
| Marital status | Married | 343 70 | 1.00 | 1.00 |
| | Single/widowed/ divorced | 37 8 | 1.33(0.32,5.63) | 0.94(0.42,2.11) |
| Number of pregnancy | Primipara | 130 28 | 1.00 | 1.00 |
| | Multi gravida | 237 49 | 0.65(0.05,9.48) | 0.99(0.27,3.70) |
| | Grand multipara | 14 3 | 0.73(0.06,9.80) | 1.04(0.29,3.74) |
| Profession of husband | Government employee | 125 15 | 1.00 | 1.00 |
| | Private employee | 114 27 | 4.34(1.38,13.68) | 4.17(1.84,9.45)* |
| | Merchant | 6 3 | 2.09(0.74,5.92) | 2.11(1.00,4.46) |
| | Other | 30 15 | 0.71(0.08,6.15) | 1.00(0.22,4.56) |
| ANC visit | First visit | 43 15 | 1.00 | 1.00 |
| | Two to three visits | 130 35 | 0.88(0.28,2.73) | 0.41(0.21,0.83)* |
| | More than three visits | 208 30 | 0.34(0.15,0.77) | 0.54(0.31,0.91)* |

* Significant at p-value <0.05, ** Adjusted for selected socio-demographic variables.

Seventy nine (17.1%) did not tested and the reason of the majority was inability to deal with stress of being positive, fear of rejection by partners /Husbands and the community (Table4).

Table-4 Attitude towards VCT for PMTCT of pregnant women attending antenatal care in Mekelle Zone, North Ethiopia, January-April, 2007.

| Variable and response | Frequency | % |
|---|-----------|------|
| Preferred Site VCT for PMTCT* | | |
| Hospital | 142 | 37.2 |
| Health center | 382 | 100 |
| Private clinic | 47 | 12.3 |
| Preferred sex of counselor | | |
| Male | 66 | 17.3 |
| Female | 125 | 32.7 |
| Both can be | 191 | 50 |
| Preferred way to obtain HIV test result* | | |
| Face to face (verbally) | 349 | 91.4 |
| Secretive letter | 53 | 13.9 |
| Through relative/family | 5 | 1.3 |
| Through my partner | 12 | 3.1 |
| Through telephone | 3 | 0.8 |
| Talk to our partner/husband before HIV test? | | |
| Yes | 237 | 62 |
| No | 145 | 38 |
| Reason for testing (n=382) * | | |
| To protect my child from HIV | 301 | 78.8 |
| To protect my partner | 16 | 4.2 |
| To take necessary protective measure(future life) | 127 | 33.2 |

*Multiple responses

Pregnant women with two to three and more than three visits were less likely to accept PMTCT as compared to only first visit [OR=0.10, 95% CI 0.03,0.36], [OR=0.12, 95% CI 0.04,0.38] respectively.

Those who have 101-300 ETB, 301-500 ETB and greater than 500 ETB family income were less likely accepting PMTCT of HIV as compared with those who have less than 100ETB [OR=0.05,95% CI 0.005, 0.51], [OR=0.06,95% CI 0.01, 0.42] and [OR=0.06,95% CI 0.01, 0.36] respectively. (Table8)

Table7. Practice related to PMTCT in the study population vs. Socio-demographic variables, Mekelle zone, North Ethiopia, January –April 2007.

| Variables | Practice towards VCT for PMTCT | | | |
|-------------------------------------|--------------------------------|-----------|----------------------|-----------------------|
| | Yes | No | Crude OR, 95% | Adjusted OR 95%CI |
| Age group | 15-19 | 5 45 | 1.00 | 1.00 |
| | 20-24 | 28 115 | 0.98(0.30,3.20) | 2.52(0.57,11.13) |
| | 25-29 | 13 92 | 2.16(0.93,5.00) | 1.57(0.27,9.23) |
| | 30 and above | 8 71 | 1.25(0.49,3.19) | 2.60(0.39,17.58) |
| Ethnic group | Tigray | 53 310 | 1.00 | 1.00 |
| | Amahara | 1 13 | 0.45(0.06,3.51) | 0.00(0.00,5.6) |
| Religion | Orthodox | 47 275 | 1.00 | 1.00 |
| | Muslim | 6 45 | 0.56(0.4,8.50) | 2.69(0.77,9.39) |
| | Catholic/Protestant | - 3 | 0.17(0.01,2.91) | 0.001(0.00,8.43) |
| Educational status | No formal education | 3 9 | 1.00 | 1.00 |
| | Primary | 21 134 | 0.47(0.12,1.88) | 0.35(0.05,2.57) |
| | Secondary | 24 95 | 0.76(0.19,3.02) | 1.19(0.16,9.07) |
| | Tertiary and above | 4 27 | 0.44(0.83,2.37) | 0.50(0.04,5.82) |
| Occupation of pregnant women | Government employee | 5 37 | 1.00 | 1.00 |
| | Private employee | 3 31 | 0.72(0.16,3.24) | 0.97(0.14,6.81) |
| | House wife | 38 217 | 1.30(0.48, 3.51.) | 2.90(0.69,12.07) |
| | Other | 1 16 | 0.46(0.05,4.28) | 0.58(0.36,9.36) |
| Family income | <100 ETB | 9 17 | 1.00 | 1.00 |
| | 101-300 ETB | 3 32 | 0.18(0.04,0.74) * | 0.05(0.005,0.51) * |
| | 301-500 ETB | 9 68 | 0.25(0.09,0.73) * | 0.06(0.01,0.42) * |
| | >500 ETB. | 33 206 | 0.3(0.13,0.74) * | 0.06(0.01,0.36) * |

| | | | | |
|-----------------------------------|-----------------------------|-----------|----------------------|-------------------|
| Marital status | Married | 52 291 | 1.00 | 1.00 |
| | Single/widowed/ divorced | 2 30 | 0.37(0.09, 1.61) | 0.00(0.00,1.80) |
| Number of pregnancy | Primipara | 24 116 | 1.00 | 1.00 |
| | Multi gravida | 28 198 | 0.68(0.38,1.24) | 0.78(0.27,2.20) |
| | Grand multipara | 2 9 | 1.07(0.22,5.29) | 0.00(0.00,1.6) |
| Profession of your husband | Government employee | 23 102 | 1.00 | 1.00 |
| | Private employee | 18 95 | 0.84(0.43,1.65) | 0.64(0.23,1.76) |
| | Merchant | 1 3 | 1.48(0.15,14.86) | 1.00(0.06,18.07) |
| | Other | 6 27 | 0.99(0.37,2.66) | 1.55(0.39,6.16) |
| ANC visit | First visit | 12 29 | 1.00 | 1.00 |
| | Two to three visits | 15 108 | 0.34(0.14,0.79) * | 0.10(0.03,0.36)* |
| | More than three visits | 27 186 | 0.35(0.16,0.77) * | 0.12(0.04,0.38) * |

* Significant at p-value <0.05, ** Adjusted for selected socio-demographic variables.

DISCUSSION

Four hundred thirty seven (94.8%) women in this study knew that HIV can be transmitted from an infected mother to her unborn baby. But, in a study done among pregnant women in Arba Minch by Mesfin Haddis, et al, 2003, awareness about perinatal transmission of HIV was 80%, which is different from our study area [23]. This could be due to the situation that the current study was conducted three years after the initiation of Prevention of Mother to child transmission program in the hospital and three health centers.

In a previous study done in Tigray (Sameness, 1992) Northern Ethiopia, among 60 patients with Sexual transmitted diseases and those in reproductive age groups (15-45 years), one-third of whom were women, awareness of the existence of HIV/AIDS was found to be 93%, but only 8.3% knew the vertical transmission of HIV. It is evident, therefore, that awareness on mother to child transmission has increased in the past decade in the region since different organizations advocating on HIV/AIDS, especially on PMTCT of HIV/AIDS.

The knowledge of pregnant women about MTCT of HIV during delivery, pregnancy and breast-feeding was 95.9%, 93.6% and 91.5% respectively. The result of this study is consistent with the findings from rural Zimbabwe, J.orne-Glieman et-al, 2004 among

women attending health services, was aware of the risk of MTCT during delivery (78%) than during pregnancy (90.6%) and breast feeding (82.6%) from a total of 351 mothers [24]. This could be due to the situation that the current study was conducted three years after the initiation of PMTCT.

In this study, majority of pregnant women (93.9%) knew that MTCT of HIV could be prevented, 90.9% of pregnant women mentioned by abstaining from breast-feeding, 58.9% by giving prophylactic anti-retroviral drugs and 2.6% Cesarean section delivery, these results are higher than the results obtained in studies conducted in Burkina Faso by O Ky-Zerbo, et al, 2004 in which 14% of pregnant women and women consulting healthy infant clinics mentioned use of Anti-Retroviral drugs and 11% by best practices of infant feeding [25]. This shows the integration of counseling and testing in ANC and educating pregnant women on PMTCT of HIV/AIDS in the health institutions in each subsequent visit were better.

Despite high knowledge of VCT and PMTCT, there was less association between the number of ANC visit and VCT testing for PMTCT of HIV. Pregnant women with two to three and more than three visits were 0.10 and 0.12 times less likely to do VCT test for PMTCT as compared to only first visit. A study conducted in Addis Ababa found two and more visit was associated with test VCT for PMTCT of HIV than who were only first visit ($p < 0.001$) (26). This could be due to their husbands/partner as a primary decision maker in issues like voluntary HIV counseling and testing for PMTCT of HIV, unlike those pregnant women whose husbands/ partner live away or due to the reluctance of individuals to apply their knowledge to exercise positive behavior and a factor to change a behavior.

In addition, monthly family income was not significantly association with accepting VCT for PMTCT unlike in a study from Tanzania where association of higher socio-economic status showed significant increase for refusal of HIV testing.

Our study showed that 79(17%) pregnant women refused testing because HIV testing and subsequent knowledge of HIV status can bring inability to deal with stress of being positive, and fear of rejection by partner/husband the community. Similar findings witnessed in Zimbabwe, South west Ethiopia.

STRENGTH AND LIMITATION

Strength of the study

- This study adopts standard questionnaire from BSS survey with reasonable modification to meet local conditions.
- Intensive training and day-to-day supervision were conducted for data collectors.

Limitation of the study

- As in other behavioral surveys, respondents may not reply openly to sensitive and private questions.
- The sample size was used with precision of 4%.
- It was institution based.

CONCLUSION

- ❖ All pregnant women knew HIV transmitted to their children during pregnancy through, childbirth and breast-feeding.
- ❖ Most of pregnant women knew that it is possible to prevent mother to child transmission of HIV.
- ❖ Majority of the study participants knew about VCT, PMTCT and had tested.
- ❖ As a result of fear of rejection by partner and the community and due to the difficulty of dealing with stress when positive, few pregnant women were not tested in the PMTCT program.
- ❖ Most of the study participants expressed their intention to have counseling and testing for HIV to protect mother to child transmission of HIV/AIDS.

RECOMMENDATION

- ❖ Empowerment of women to make informed choices about VCT for PMTCT which ensure easy access for prevention, treatment, care and support.
- ❖ Intensify coordinated and targeted IEC program to convince pregnant women in order to utilize VCT.
- ❖ Address stigma and discrimination through strong IEC.
- ❖ Promote couple counseling.
- ❖ Strengthen post-test counseling and care and support services for pregnant women.
- ❖ Develop a strategy for monitoring and evaluation of the program.

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Thesis-Four

Knowledge of Women of Reproductive Age on MTCT of HIV and their Attitude and Practices towards its Prevention in Gonder Town, Northwest Ethiopia, Sentayehu Tsegaye

ABSTRACT

HIV affects more than half a million children each year, mainly via MTCT of HIV. Considering this threat, the World Health Organization recommended four strategies of PMTCT to reduce vertical transmission of the epidemic.

This study was conducted to assess Knowledge of women of reproductive age on MTCT of HIV and their attitude as well as practices to its prevention. A cross-sectional survey complemented with qualitative study was conducted from January 25 to March 30, 2007, in Gondar town. A total of 1148 Women from randomly selected households of the town participated in the quantitative part of the study. In-depth interviews of 34 women used to complement the study. About 90% and nearly 85% of the women were aware of MTCT of HIV and its prevention respectively. However, more than 80 % of the study participants had relatively poor comprehensive knowledge, attitude and practice status towards MTCT of HIV and its prevention. Properly designed IEC and BCC programs on PMTCT, extending the PMTCT entry point beyond ANC clinics and integrating family planning counseling with other HIV/AIDS activities were some of the recommendations.

INTRODUCTION

Since the first two AIDS cases reported in 1986, the virus continued to spread at a rapid pace sparing no part of Ethiopia unaffected by the virus (1). In 2003 alone 90,000 adults and 25,000 children died of AIDS. This makes the cumulative total of 900,000 deaths leaving 539,000 orphans, by the end of 2003 (2, 3). The main HIV transmission mechanisms are sexual contact, peri-natal transmissions, blood transfusions, and unsafe injections (4).

HIV remains one of the major causes of infant and maternal mortality in resource-poor settings (6). More than 600,000 children infected each year, mainly via MTCT (7, 8), with most of the infections occurring in Africa (9)

In the absence of specific interventions, the estimated rate of MTCT of HIV ranges from 14 to 25% in developed countries compared to 13 to 42% in the developing world (10) indicating MTCT of HIV remains a major public health problem worldwide, especially in resource-constrained countries. According to UNAIDS globally in 2002 more than 90% of the 800 000 HIV infections occurred in children under age 15 are attributed to mother-to-child transmission (12).

The above mentioned literature reviews are consistent with an article which stated that HIV Infections and AIDS are threatening the gains made in child survival through the use of child immunization, improved case management of diarrheal diseases and acute respiratory infections (13). Considering this threat, the United Nations set the goal of reducing the proportion of infants infected with HIV in 20% in 2005 and by 50% by 2010 starting from 2001 (14). To reach these goals, a number of program elements need to be in place. WHO recommends four strategic approaches: 1) primary prevention of HIV infection; 2) prevention of unintended pregnancies among HIV-infected women; 3) prevention of HIV transmission from HIV-infected women to their infants; and 4) provision of care and support to HIV-infected women, their infants and family (15). In order to implement the strategies in a way that can achieve the desired goal, awareness, attitude and practice of women about MTCT and its prevention is essential. In the WHO-UNAIDS-UNICEF technical guide line, it was clearly stated that appropriate information, education and communication (IEC) activities will be important at all levels by raising awareness and giving people a positive image (16). There are few studies on awareness and attitude towards PMTCT which are institutional. There is no study that specifically addressed knowledge, attitude and practice of women towards MTCT and its prevention in this study area at community level. This study is therefore undertaken to assess the awareness, attitude and practice of women in reproductive age of Gondar town towards MTCT of HIV and its prevention. The study is aimed to generate significant and practical information regarding MTCT of HIV and its prevention.

OBJECTIVES OF THE STUDY

General Objectives

- To assess Knowledge, attitude and practice of women in the reproductive age group towards MTCT and its prevention (PMTCT) in Gondar town.

Specific Objectives

- To assess knowledge of women of reproductive age towards MTCT in the town
- To assess attitude of women of reproductive age towards PMTCT in the town
- To find out practice of women of reproductive age towards PMTCT in Gondar town

METHODS

A cross sectional survey complemented with a qualitative component was conducted among women of reproductive age in Gondar Town from January 25 to March 19, 2007. Gondar town is located about 750 kilometers northwest from the capital Addis Ababa and has 12 administrative areas. A total sample size of 1,175 women was targeted to be included in the quantitative study using the formula for a single population proportion. A list of households was

obtained from the respective administrative areas and served as a sampling frame to get a woman randomly from each household as a study participant.

In-depth interview was conducted among 34 participants moderated by the principal investigator. In-depth interview was found to be suitable as the study require personal and sensitive issues to be discussed. Some of the questions in quantitative component of the study may requires further probing to complement the actual response of the study participants. The level of saturation of information was used to decide the number of interviews.

Ten female enumerators (who have completed 12-grade) who attended a two-days training completed the interview. To ensure the quality of data, two well trained diploma level supervisors and the investigator directed and monitored the entire data collection processes. Five percent of volunteer respondents re-interviewed by supervisors and principal investigator to enhance the reliability of the study.

Ethical clearance was obtained from RPO of the University of Gondar. Gondar town administration office gave official permission to conduct the study in the town by writing letter of support to each administrative area under it. A written consent form was read to each respondent to obtain his/her agreement. For those women aged 15 to 18, the heads of the households or care givers gave consent, after explaining the purpose of the study. There was no personal identification on the questionnaire and the collected data were kept with the principal investigator, to ensure anonymity and confidentiality.

RESULTS

Quantitative study

Overall, a total of 1148 women responded to the questionnaires making a response rate of 97.7%. This result is presented in three main sections, namely; socio-demographic characteristics of respondents, Knowledge assessment section and attitude & practice section.

1. Socio-demographic characteristics of respondents

The median age of respondents was 24 years (the mean being 26.1 ± 8.5 years). As shown in table 1, majority of the study participants were students (33.9%) followed by housewives (32.2%). Ninety six percent (96.3%) of the respondents were Amhara by ethnicity and 88.6 % were Orthodox Christians by religion. Six hundred thirty (54.9%) of them were literate to level of secondary school and above. Regarding marital status of the respondents, 49.3% of them were never married and 50.7% were ever married with 52.4% of them did not have a child.

2. Knowledge of respondents to MTCT and prevention methods

One thousand one hundred forty (99.3%) of the respondents reported that they heard of HIV, while 1138 (99.1%) of them claimed to know some ways of HIV transmission. Of the respondents who have heard of HIV, 20.6% mentioned all the major routes of HIV transmission namely unsafe sex, blood contact (sharp objects prick, and blood transfusion) and MTCT. About 61% of them mentioned two, and the 17.7% mentioned one mode of HIV transmission. Unsafe sex mentioned as one of the ways of HIV transmission by 99.7% of the respondents and prick with contaminated sharp objects by 77.1%. Only 22.4% mentioned MTCT of HIV as mode of HIV transmission. However, Vertical transmission of HIV was known by 1041 (91.3%) of the women, when asked particularly about MTCT of HIV.

Nine hundred sixty five (84.6%) of the respondents were aware that mother-to-child transmission of HIV is preventable, of which 76.7% mentioned ART as a way of preventing infection. ABCs of HIV prevention, avoiding breast feeding, and contraceptive methods were mentioned as ways of prevention of MTCT by 5.6%, 11.6% and 22.1% of the respondents respectively. Only three women (0.3%) mentioned care and support to PLWHA help in reduction of MTCT of HIV.

Nine hundred seventeen (80.4 %) women were having poor comprehensive knowledge.

Six hundred fifty (57%) of the study participants discussed about HIV/AIDS in the twelve months preceding the survey; and of which 50%, 23.5%, 23.2% discussed with their female friends, spouse/partners and health professionals, respectively.

3. Attitude and practice of respondents towards PMTCT

Nine hundred forty one (82.5%) women had poor attitude and practice status while 17.5% had relatively good attitude and practice status towards PMTCT.

Seven hundred twenty five (63.7%) of the respondents had the desire to make use of PMTCT services in the future. Five hundred sixty three (80.7%) of those who had never underwent VCT were willing to be tested for HIV in the future while 135 (19.3%) of them did not want to be tested for HIV. Of those who declined to be tested for HIV, 74.8% of them said that they did not want to be tested because they believe that they did not have any risk faced to acquire HIV. Three hundred three (26.6%) of the respondents had desire for a child even if they are HIV infected.

Four hundred forty two (38.9%) had underwent voluntary counseling and testing. One hundred two (8.9%) of the women used PMTCT services.

Three hundred thirty five (29.5%) of the women used modern contraceptive methods. Of the 535 mothers, 401(75%) attended ANC during their pregnancy. Of all respondents, 762 (66.8%) of the women believe that ANC helps to prevent vertical transmission of HIV.

Qualitative study

All the participants of the in-depth interview reported that they heard of HIV/AIDS. Almost all of them mentioned two ways of HIV transmission, indicated that the predominant mode of transmission sexual route. Majority of the respondents mentioned MTCT as one way of HIV transmission.

Most of the participants knew that MTCT is preventable. Avoiding breastfeeding and use of ART drugs were mentioned as possible ways of prevention. However, there were few respondents who did not believe that MTCT is preventable.

A 26 year old woman who is on ART stated that *"I heard repeatedly about prevention of MTCT of HIV on radio, but I don't believe that it can be prevented. I don't understand how a fetus can be safe when it is formed by the union of infected semen and egg."*

All women attending PMTCT clinic knew that exclusive breast feeding till six months is one possible way of reducing MTCT of HIV. However, majority of them were breast feeding their babies at the time of the interview. The two main reasons given for preference of breast feeding to other feeding options were financial incapability and fear of stigma.

DISCUSSION

This study has a satisfactory response rate and socio-demographic characteristic which were similar to couple of community based studies related to VCT in the study area in the past four years (17, 18). Triangulation using in-depth interview of 34 women in reproductive age was used to supplement the quantitative information.

In this study, almost all women in quantitative (Table 2) and all women in the qualitative part heard of HIV which is comparable to that of some of the main cities of Ethiopia 2 years ago; 99.2% in Addis Ababa, 98.2% in Hareri, 96.9 % in Dire Dawa (19). However, all respondents confirmed the fact that they heard of HIV/AIDS in the study conducted on awareness and attitude towards VCT in the study area four years ago (17) and a hospital based similar study in Addis three years back (20). This is in agreement with findings from the 2005 DHS report which showed that 90 % of women 15 to 49 years of age have heard of HIV.

Only a fifth of study participants mentioned all the major routes of HIV transmission namely unsafe sex, blood contact (sharp objects prick, and blood transfusion) and MTCT. About 61% of them mentioned two, and 17.7% mentioned one mode of HIV transmission. There was no other community based study to make comparison with this study to the level of the investigator's knowledge. However, this finding is not consistent with the hospital based similar study on post natal women in Addis Ababa. More than 82 % of post natal women mentioned all the major

routes, 12.2 % mentioned two and 4.2% mentioned only one route (20). This may be due to post natal women were more exposed to health institution than women interviewed in the community based study.

Only few women believe that prevention of MTCT should be exercised at all times in reproductive age while majority of respondents believe it should be thought when planning marriage and pregnancy. This shows that most women think of MTCT of HIV when they are engaged in marriage or get pregnant. However, there are different circumstances that may result in unwanted pregnancy and child birth. Unwanted pregnancies are likely associated with unsafe sexual practice that may also expose to sexually transmitted infections including HIV/AIDS. Each year approximately 210 million women become pregnant worldwide, of whom 132 million go on to have a live birth. Millions of pregnancies are, however, unplanned (48).The incidence rate of unsafe abortion in women age 15 to 44 years was 16% according to the annual report of incidence of unsafe abortion in developing region in 2000 (21). These findings justify the need to consider MTCT of HIV and its prevention any time possible, not only during pregnancy or marriage.

Though there was good awareness of MTCT of HIV and its prevention, the comprehensive knowledge of women was poor with 80.4%. This shows that women were well aware of MTCT of HIV and its prevention but lack the proper knowledge with further aspects of MTCT of HIV and its prevention. Regarding attitude and practice status of the women in this study, it was also found to be relatively poor as the comprehensive knowledge was. More than three fourth of women had poor attitude and practice.

CONCLUSION

This study has revealed that the majority of women were aware of MTCT of HIV. However, most of them had poor knowledge and attitude-practice status towards MTCT of HIV and its prevention.

The third component of PMTCT strategy (Prevention of MTCT of HIV among HIV positive pregnant women) was well known by the women participated in this study and women think of PMTCT when they are pregnant.

Open discussion about HIV is still sub-optimal especially poor open communication with spouse/partners is a hindrance on PMTC applications. Hence, people should be motivated to make open conversation about HIV/AIDS especially at family level.

Having relatively good ANC follow up rate and contraceptive use in this community may give opportunity to address a significant portion of women.

A significant number of respondents had desire for child, despite assumed positive HIV status.

RECOMMENDATION

- ❖ Design IEC that help the community based on a clear understanding of MTCT of HIV and its prevention
- ❖ Address all components of PMTCT in programs related to PMTCT
- ❖ Enhance Community mobilization
- ❖ Design community based PMTCT programs with emphasis on the issue of care and support
- ❖ Intensify BCC for PMTCT clinic clients

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THESIS-FIVE

Assessment of knowledge, Attitude and practice on pulmonary Tuberculosis among adults in Arbaminch town and Arbaminch zuria woreda, Gamo Goffa Zone, SNNPR, ETHIOPIA

Ebrahim Muktar

ABSTRACT

Ethiopia ranked 8th among 22 high TB burden countries globally. TB was the 3rd leading cause of morbidity and hospital death in Ethiopia (HRI-FMO 2005). In Ethiopia a total of 125,135 new cases of TB were notified by the year 2005, of which 18,300 of them were from SNNPR. DOTS program, was began to be implemented in Ethiopia in 1993 and its woreda coverage was reached 90% by the year 2005 and had brought improvements in reducing defaulter rates, patient compliance, treatment success rate and case detection rate.

Objective: The aim of this study was to assess the knowledge, attitude and practices of Adult members of the community towards pulmonary tuberculosis in Arbaminch town and Arbaminch zuria woreda, Gamo Goffa Zone of the SNNPR, Ethiopia.

Methods: A community based cross-sectional study was conducted from September 2006– May 2007 at Arbaminch Town in Arbaminch Zuria Woreda. A total of 807 subjects were studied selected by using multi-stage sampling technique of selection.

A structured, pre-tested and interviewer administered questionnaire was used. Fourteen trained data collectors and 3 supervisors participated in the collection. Pre-testing of questionnaire was done prior to actual data collection began.

Results: Among the total respondents 704 (87.8%) were heard about PTB, 12.2% did not know about PTB. 63% of respondents reported that they are afraid of PTB patients, 37.8% had a belief that getting PTB is shameful, 35.8 % might not allow their daughter/son to marry cured PTB patient, 14.1% of the respondents were not willing to provide care if they had relative suffering with PTB. From the total respondents, 74 (10.5%) reported that, they had relative with cough for 2 or more weeks.

Women compared to men, rural residents compared to urban, married, than unmarried those with low educational status and relatively low income level had more likelihood of

scoring low PTB knowledge in the study population. IEC/ BCC on PTB is necessary to create awareness, narrow knowledge gap, clear misconceptions, reduce stigmatizing attitude and discrimination.

INTRODUCTION

Ethiopia ranked 8th among 22 high TB burden countries globally(2). TB was the 3rd leading cause of morbidity and hospital death in Ethiopia (HRI-FMO 2005). In Ethiopia a total of 125,135 new cases of TB were notified by the year 2005, of which 18, 300 of them were from SNNPR. DOTS program, was began to be implemented in Ethiopia in 1993 and its woreda coverage was reached 90% by the year 2005 and had brought improvements in reducing defaulter rates, patient compliance , treatment success and case detection rates (2).

However, the case detection rate of smear positive PTB was low (36% in 2004), where as the WHO puts target of detecting at least 70% smear positive cases (1) for countries. In order to halt the incidence of tuberculosis, the case detection rate of new Smear – positive PTB cases under DOTS must be at least 70% and 85% treatment success rate (2, 4). Early diagnosis and prompt initiation of anti- tuberculosis treatment are essential for an effective TB control program. Delays in the diagnosis may worsen the outbreak, increase the risk of death and enhance TB transmission in a community (6).

Delays were observed among TB patients from onset of the symptoms to reporting for a health facility in different studies in Ethiopia (6-12).

The general public's alertness for TB symptoms, their motivation to seek for early health care, early diagnosis and prompt initiation of treatment and complying with treatment are essential aspects for an effective TB control program (6). In some studies: lack of access to services (long distance), economic factors, lack of appropriate knowledge about TB, perceptions of illness as not serious and attitudes to health were mentioned as reasons for delays (6-14, 16). Recent community based KAP studies on PTB were few in Ethiopia and evidence of a study was not found in Gamo Goffa zone.

The study was carried out in Arba Minch Town and Arba Minch zuria woreda among healthy individuals in the community. Therefore, the findings of the study would be valuable in designing problem oriented and culture sensitive intervention strategies that enable the DOTS program to be more successful

OBJECTIVES

General objective

The overall aim of this study was to assess the knowledge, attitude and practices of Adult members of the community towards pulmonary tuberculosis at Arbaminch Town in Arbaminch zuria woreda, Gamo Goffa Zone of the SNNPR, Ethiopia.

Specific Objectives

- To assess adults' knowledge on signs and symptoms, cause, transmission, curability, severity, preventability of PTB in Arbaminch.
- To assess the attitudes of adults towards PTB patients and the disease
- To assess practices on the prevention and control of PTB
- To determine the relationships of socio-demographic factors and PTB knowledge in the town.

METHODS

Study Design: A community based cross-sectional study was conducted from September 2006–May 2007.

Study Area: Arbaminch town in Arbaminch Zuria woreda, found in Gamo Goffa Zone, SNNPR. The study population were Heads of households above 18 years of age, who are permanent residents in the study area.

Sample size: Sample size is calculated using the standard formula for a single proportion. Fifty percent prevalence of appropriate knowledge on PTB, 95% Confidence level, 5% tolerable error, a design effect of 2, and 5% was added for compensating non-response, and the sample size was calculated to be 807.

Sampling procedure: Multi-stage sampling technique was used to select study units. 14 kebeles (PSU) were randomly selected by lottery method from the total 46 kebeles found in the study area. Sub - kebeles (SSU) were chosen from each of the 14 kebeles with probability proportional to their size (PPS). Houses were visited starting from the centre of each sub - kebele after a pen was spun and to the direction the pen pointed 12 -15 Heads of households were interviewed, systematically. The study was conducted from September 2006 to May 2007.

Variables of the study

- Knowledge on PTB attitude, practice (as dependent variable)

- Socio- demographic variables; Age, sex, marital status, family income, occupational status, educational status, family size, ethnicity, and religion as independent variables

Operational Definitions

Pulmonary Tuberculosis: when active TB affects the lungs and causes a persistent cough (sometimes with bloody sputum), chest pain, exhaustion, night sweats, fever and shortness of breath. It is the only form of the disease which is infectious.

Knowledge: In this study, knowledge was measured based on respondents' ability to respond to questions related to signs and symptoms, causes, mode of transmission, severity, curability, and the modes of prevention of pulmonary tuberculosis.

Attitude: A tendency of mind or of relatively constant feeling towards persons and situations. It can be positive or negative (favorable or unfavorable). In this study, attitude or feeling was assessed in terms of what a person feels or prefers to do regarding tuberculosis patients and the disease. For example, agree or disagree to provide care and support to patients in order to share things in common etc.

Practice: in this study practice defined as a health behavior that may promote health or prevent diseases or opposite. What the individuals have been doing regarding PTB was assessed. PTB prevention and control practices (good or bad) thought by a person that is aimed at curing or preventing the disease. For example, treatment practices and where to go first when experiencing cough of more than three weeks.

Data collection

A structured, pre-tested and interviewer administered questionnaire was used. Fourteen trained data collectors and 3 supervisors participated in the collection. Pre-testing of questionnaire was done prior to actual data collection began. Data collectors were supervised daily. Interview technique was used to collect data. Interviewers were provided with an interview guide.

Data processing and analysis

After the collection process completed, each questionnaire was exhaustively checked for completeness and accuracy.

All complete data were entered in to a computer soft ware, SPSS 11.0 statistical packages. Data were analyzed using a computer and summarized by descriptive statistics and presented with frequency tables. Associations and relationships were computed between knowledge and other socio demographic variables using the bivariate and multivariate

analysis techniques. Logistic regression technique was used to assess the associations of factors with PTB knowledge. The significance of associations was presented by p-values, and the 95% confidence interval of the adjusted odds ratios.

Ethical Considerations

Ethical clearance was obtained from Research and Publication Office of the University of Gondar. Informed verbal consent was obtained from individual respondents prior to collection of the data. Keeping private information linked anonymous ensured confidentiality. In this study participants' did not have any risk or discomfort, since there was no experiment on study the subjects and their participation was fully voluntary.

RESULTS

A total of 807 respondents were interviewed and only 802 questionnaires were entered in to a computer for analysis. The proportion of male respondents was 49.8%, mean age of respondents was 37.2 (+ 11.8 SD) Yrs, 72% (582) rural and 87% married. The average number of family size was 5.6 (+ 2.37 SD), farming was the main livelihood (56%) and more than half (54.4%) of the respondents had not had formal education (table 1)

Figure 1: A pie chart showing adults' knowledge on the cause of PTB in Arbaminch town and Arbaminch zuria woreda, Gamo Goffa Zone, SNNPR, Ethiopia. May 2007

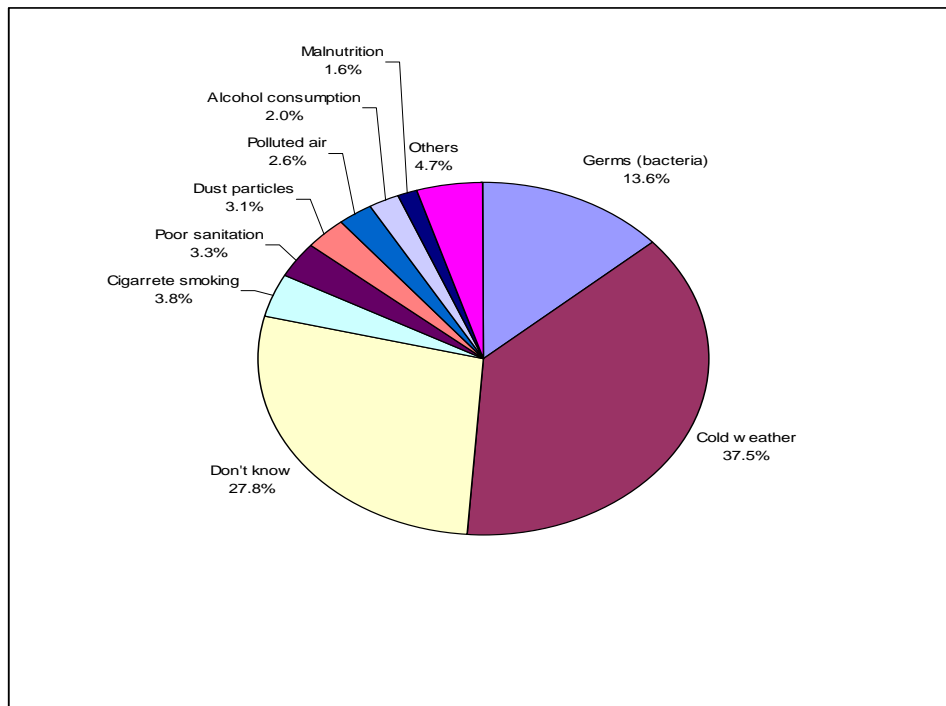
| Variables | Number | Percent |
|----------------------------|--------|---------|
| Sex | | |
| Male | 399 | 49.8 |
| Female | 402 | 50.2 |
| Age | | |
| 19 – 30 years | 290 | |
| 31 – 45 years | 316 | 36.3 |
| 46 – 60 years | 166 | 39.5 |
| >61 years | 27 | 20.8 |
| Marital Status | 698 | 3.4 |
| Married | 55 | |
| Single | 48 | |
| Others (divorced, widowed) | | 87.1 |
| Education | 414 | 6.9 |
| Not able to read and write | 22 | 6.0 |
| Able to read and write | 183 | |
| Attended Primary education | 152 | 51.7 |
| Attended High school | 30 | 2.7 |
| University, post-graduate | | 22.8 |

| | | |
|-------------------------|-----|------|
| Residence | 220 | 19.0 |
| Urban area | 582 | 3.7 |
| rural area | | |
| Occupation | 449 | 27.4 |
| Farmer | 132 | 72.6 |
| Housewife | 61 | |
| Trader | 85 | 56 |
| Employee | 34 | 16.5 |
| Laborer | 41 | 7.6 |
| Others | | 10.6 |
| Family size | 422 | 4.2 |
| < 5 | 280 | 5.1 |
| 5 – 8 | 100 | |
| > 8 | | 52.6 |
| Family income | 385 | 34.6 |
| 1. <200 birr/month | 266 | 12.5 |
| 2. 200 - 500 birr/month | 86 | |
| 3. 500 - 800 birr/month | 64 | 48.1 |
| 4. > 800 birr/month | | 33.2 |
| Ethnicity | 640 | 10.7 |
| Gamo | 71 | 8.0 |
| Amhara | 38 | |
| Wolayta | 53 | 79.8 |
| Others | | 8.9 |
| Religion | 392 | 4.7 |
| Orthodox Christian | 364 | 6.6 |
| Protestant | 46 | |
| Others | | 48.9 |
| | | 45.4 |
| | | 5.7 |

N: B proportions were calculated from valid values by excluding missing values.

Knowledge on PTB:

Among the total respondents 704 (87.8%) were heard about PTB, 12.2% did not know about PTB. Ninety five percent of those ever heard of identified PTB by cough, 39% by weight loss, 25.9% used sputum with or with out blood. Only 13.6% knew PTB is caused by germs / bacteria, 37.5% attributed to cold ('Birid)' and 28.2% didn't mention any cause.



Of the total respondents 94.7% reported PTB is communicable and only 1.6% considered non-communicable and the rest did not know. 93% of the respondents believe that PTB is curable with medical treatment, while 6.4% as non-curable and 98.9% of the respondents reported PTB as a serious disease. Only 32% knew that TB and HIV/AIDS are related to each other.

Overall, knowledge on PTB was scored for every respondent. The mean and median scores were 7.66 and 8.0, respectively. The Median score was taken as the cut-off point, and those scored above which were labelled as having high PTB knowledge within the study area. In the bivariate analysis Educational status, place of residence, Sex of respondent, family income, marital status, and occupational status were significantly associated with overall PTB knowledge. Ages of respondent and family size were not associated with PTB knowledge.

In the logistic regression analysis, Educational status, place of residence, Sex of respondent, family income, marital status significantly associated with PTB knowledge (Table 4).

Table 4: Socio-demographic and economic predictors of low knowledge score on PTB among adults, in Arbaminch town and Arba Minch Zuria Woreda, SNNPR, Ethiopia. May 2007

| Variables | Low knowledge score | High knowledge score | AOR | 95% C.I. for AOR | |
|-------------------------------|---------------------|----------------------|------|------------------|-------|
| | | | | | |
| Sex of respondents | | | | | |
| Male * | 177 | 222 | 1 | | |
| Female | 231 | 171 | 1.70 | (1.20 | 2.43) |
| Educational status | | | | | |
| Illiterates * | 381 | 118 | 1 | | |
| Attended Elementary | 68 | 115 | .272 | (.17 | .39) |
| Attended high school/ college | 22 | 160 | .126 | 0 | .21) |
| | | | | (.06 | 1 |
| Marital status | | | | | |
| Married* | 373 | 325 | 1 | | |
| Single + other | 35 | 68 | .35 | (.15 | .80) |
| | | | | 1 | |
| Place of residence | | | | | |
| Urban * | 45 | 175 | 1 | | |
| Rural | 363 | 219 | 1.86 | (1.1 | 3.0) |
| | | | | 3 | |
| Family income | | | | | |
| Below 200 birr/M * | 253 | 132 | 1 | | |
| 200 – 500 B/M | 120 | 146 | .60 | (.41 | .88) |
| Above 500 B/M | 34 | 116 | .37 | 3 | .63) |
| | | | | (.21 | 8 |

* Reference category

- Model coding: low knowledge = 1, high knowledge = 0
- AOR = adjusted odds ratio

Attitude

- High proportions of stigmatizing attitudes with intentions to discriminate PTB patients were seen in this study. Sixty three percent of the respondents reported that they were afraid of PTB patients, 37.8% had a belief that getting PTB is shameful, 35.8 % might not allow their daughter/son to marry cured PTB patient, 14.1% respondents were not willing to provide care, if they had relative suffering with PTB (Table 5).

Table 5: shows the proportion of favorable and unfavorable attitudes towards PTB patients at Arbaminch town and in Arbaminch Zuria woreda, SNNPR, Ethiopia May 2007. n=704.

| Variables | Positive attitude No (%) | Negative attitude No (%) | Neutral No (%) |
|---|--------------------------|--------------------------|----------------|
| All PTB patients have AIDS | 522 (74) | 24 (3.4) | 158 (22.4) |
| Afraid of PTB patients due to their illness | 240 (34) | 449 (63.8) | 15(2.1) |
| Unusual feeling when seeing PTB patients | 164 (23.3) | 513 (72.9) | 27(3.8) |
| Do you provide care to relative with PTB | 597 (84.8) | 99 (14.1) | 8 (1.1) |
| Continue friendship with PTB patients | 443 (62.9) | 243 (34.3) | 18 (2.6) |
| Allow daughter or son marry cured PTB patient | 430 (61.2) | 252 (35.8) | 21 (3.0) |
| Perform religious ritual with PTB patient on treatment. | 576 (81.8) | 103 (14.6) | 25 (3.6) |
| Do you tell to other if you have PTB | 529 (75.1) | 171 (24.3) | 4 (0.6) |
| Do PTB patients hide their disease status | 224 (31.9) | 381 (34.3) | 97 (13.8) |
| Is having PTB shameful thing | 417 (59.2) | 266 (37.8) | 21 (3) |

Practice

From the total respondents, 74 (10.5%) reported that, they had relative with cough of 2 or more weeks. Among those who remember that they had relative with cough of 2 or more weeks 66 (89.2%) were provided with modern medical treatment, while 6 (8.1%) sought traditional treatment and 2 (2.7%) did nothing.

DISCUSSION

Even though TB is an oldest disease Known, in this study 12.2% of the respondents that never heard about Pulmonary TB. A community based study conducted in Tigray Region 2005 reported similar finding, in which 13.3 % of the study population had no awareness on PTB.

Again, only cough was well known (by 95% of respondents) among the major symptoms. But, majority (86.4%) of the respondents did not know or had misconception on the cause of PTB, and 62% had wrong beliefs on modes of transmission of PTB. Knowledge and attitude are predictors of care seeking behaviour (6, 7).

Tuberculosis should be well known by the public, in order to seek treatment as early as possible when any body in the community experiences signs and symptoms of the disease. Being ignorant of the important aspects of PTB might cause delays in seeking care, Persistent infectiousness, increased TB transmission in the community, and high risk of death.

Lack of appropriate knowledge about PTB and misconceptions on the curability and modes of transmission of TB might cause stigma and discrimination on TB patients (7,8,10,23).

Respondents had relatively better knowledge on the communicability, severity, and curability of PTB. More or less comparable findings were observed in studies by, Mengiste et al Tigray 2005, Mekonnen H Shashemene 2004, and Jami N Harar 2002 (23, 24, and 32).

In the multivariate analysis, variables such as educational status, sex, and place of residence, family income and marital status were significantly associated with overall PTB knowledge. The odds of a female and a rural resident being scoring low PTB knowledge are 1.7 and 1.86 times more compared to a male and an urban resident respectively. These can

be justified by the low socio-economic status of women and rural community, i.e. access to information and education could be a problem to those groups.

A study done in Tigray region reported a similar finding that; being female sex, rural resident and illiterates were more likely to score low PTB knowledge (23).

High proportions of stigmatizing attitudes with intention to discriminate were observed in this study. Which might be due to: seriousness of the disease (presence of marked weight loss), misconceptions regarding to the modes of transmission of the disease and its curability. Eating together, sharing utensils, etc were mentioned as means of transmission of PTB by a significant proportion of respondents.

Unlike a study done by Mekonen H. Titled stigma on TB patients at shashemene Town 2004 in which all TB patients were considered as having HIV/AIDS (24), in this study HIV/AIDS does not seem an important reason for negative attitude, since only 32% knew the two diseases are related to each other and 3.4% consider all TB cases as having HIV/ AIDS.

LIMITATIONS OF THE STUDY

Assessing practice regarding the prevention and control of PTB in this study refers to care and treatment given to a person who should be relative of respondents with cough of three or more weeks. Yet it may not indicate the actual or current practice in the study population and also difficult to associate with their current knowledge and attitudes, considered as one limitation.

This is a quantitative study that may not properly assess stigmatizing attitudes because of its sensitive nature, and so could be a limitation for this study.

CONCLUSION

In this study, knowledge gap and misconceptions, with high proportions of stigmatizing attitudes and intension to discriminate PTB patients were observed among adults in the study area.

Women compared to men, rural residents to urban, those with low educational status married and relatively low income level had more likelihood of scoring low PTB knowledge in the study population.

RECOMMENDATION

- IEC/ BCC on PTB is necessary to create awareness, narrow knowledge gap, clear misconceptions, reduce stigmatizing attitude and discrimination.
- TB and HIV / AIDS intervention activities (IEC/BCC) should be strongly integrated.
- In addressing knowledge gap and misconceptions, emphasis should be given to most vulnerable groups of the society; rural community, women, and those in low socio-economic status.

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THESIS-SIX

Factors that Influence Adherence to Antiretroviral Therapy among Adults Living with AIDS at Bahir Dar town, North West Ethiopia

Melkie Assefa

ABSTRACT

Background: Adherence is a complex dynamic behavior influenced by characteristics of the patient, treatment regimen, disease, patient-provider relationship, and clinical setting. Non-adherence to ART endangers the clinical outcome in people living with HIV/AIDS. Understanding the factors influencing adherence and developing effective interventions are critical for improved clinical outcomes for persons on antiretroviral therapy.

Objective: To determine the rate of adherence and factors that influence adherence to treatment in adult patients on antiretroviral treatment (ART) in Felege Hiwot Referral Hospital, Bahir Dar town.

Methods: Both cross sectional survey and qualitative methods (In-depth interview and FGDs) were used in the study. Randomly selected adult patients on ART for at least 6 months were included. Self reported data were collected by the interviewer who administered the questionnaire. In-depth interview and FGDs were made among selected ART users, health workers and community leaders. Quantitative data were analyzed using SPSS 11.0. where $P < 0.05$ was considered as statistically significant. Qualitative data were transcribed and analyzed using themes.

Results: Out of the total 249 participants 222(89.2%) were found to be adherent to their prescribed medication optimally in the seven days before data collection. The main reasons for suboptimal adherence were forgetfulness, far from home, went to holly water and busy time. Patients who use reminders were 9.31 times more likely to have optimal adherence than not using (OR= 9.31, 95%CI 1.43, 60.74). Those patients adhering to the prescribed food restriction were 3.33 times more likely to have optimal adherence (OR = 3.33, 95% CI 1.4, 7.7). Factors like; initial counseling, side effects of the drugs, disclosure, family support and socio demographic variables have no significant association in this study.

Conclusions and recommendations: This rate of adherence is a higher in this study than those results obtained in other studies in Ethiopia and abroad particularly in resource poor countries. This has to be further strengthened and studies with different methods and approaches have to be done. Patients have to be encouraged to use reminders. Conducting discussion with the religious leaders and providing health education in the community has to

be made to address the problems of interruption due to holly water. Follow up counseling should be done strictly and adherence.

Key words: Adherence, Antiretroviral treatment (ART), North West Ethiopia.

INTRODUCTION

Antiretroviral therapy (ART) is a series of medications that can help control HIV disease, but it does not cure HIV. In sub-Saharan Africa: more than one million people were receiving antiretroviral treatment by June 2006, a tenfold increase since December 2003 (1). But less than one quarter are receiving it (2, 3).

The primary goals of antiretroviral therapy are to improve survival and quality of life by maximizing durable viral suppression replication which in turn helps to restore immunological function. In Ethiopia, by the end of July 2006, only 45,595 patients have started the treatment in 132 health facilities all over the country. That is much below the need (4).

Even though ART has improved the lives of many worldwide, lack of adherence to ART is still a major challenge to AIDS care as it limits the degree to which treatment can be maximized (5). Adherence is defined as the extent to which a client's behavior coincides with the prescribed health care regimen determined through a shared decision making process between the client and the health care provider (6). Consistent and nearly perfect adherence is considered as essential requirement for HIV positive patients on antiretroviral therapy to fully realize its life extending benefits (7).

In one study in Ethiopia, the rate of adherence was 81.2 % (8) and in a study conducted in USA, the mean percentage of self reported adherence was 91% (9) while it was 75% (10) in Brazil. Such evidences suggest that ART can successfully be used in developing countries. Adherence to medication does not mean only to the prescribed dose but it includes adhering to schedules and dietary instructions across all time.

Adherence is a complex dynamic behavior influenced by characteristics of the patient, treatment regimen, disease, patient-provider relationship, and clinical setting. No single factor is 100% predictive. There are several reasons for non-adherence, especially in chronic diseases like HIV.

In some studies, the major reasons that patients miss doses include: simple forgetfulness, slept through the dose, change in their routine schedule or being away from home. Sometimes, when people are depressed or isolated, they will stop taking ARV because they feel that life is no longer worth living, or they do not have the strength to continue.

Variables related to the regimen, like; complexity of regimen, long-term duration, and side effects have also influence on adherence. Other factors like; distance from patient's home transport cost, lengthy delays between clinic contact time and appointments, working hours, long waiting period and lack of services make contribution for non-adherence. Life situation issues, including homelessness, lack of stable income and institutional obstacles, like jail; drug rehabilitation, and hospitalization may negatively affect access to medication.

RATIONALE OF THE STUDY

Antiretroviral therapy has been available in public hospitals in Ethiopia and now the service is available at present in peripheral health facilities. However, there are a few studies on the level of adherence to the treatment. Therefore, this study aims at understanding the factors influencing adherence and developing an effective interventions for improved clinical outcomes among persons on antiretroviral therapy.

Since the service was newly introduced, it was vital that studies should be conducted to evaluate and assess rate of adherence among people on ART and factors affecting adherence. Such studies would help to inform the MoH and other policy-makers in Ethiopia the different ways of improving or maintaining adherence to ART to scale up nationwide programme. It could also be useful to recommend the most efficient adherence intervention for people on ART. Scaling up of ART may be useful but without addressing adherence may result in drug resistant strains of the virus which would be a serious challenge to individual patients and to the country as a whole. So, Assessment of the rate of adherence and factors influencing adherence was mandatory and that was the reason why this study was initiated.

General objective: -

To determine the rate of adherence and identify factors that influence adherence to antiretroviral therapy in adult patients on treatment in Felege Hiwot Referral Hospital, Bahir Dar Town

Specific objectives: -

- To determine the prevalence rate of adherence to antiretroviral medications

- To identify factors that influence adherence in patients on antiretroviral therapy

METHODOLOGY

Both cross sectional quantitative survey and qualitative (In-depth Interview and Focus Group Discussions (FGDs)) methods were employed in the study. Quantitative cross-sectional study was triangulated with In-depth Interviews and FGDs in order to increase value and reliability of the study. Hospital based data collection was conducted using structured, pre-tested and interviewer administered questionnaires on different issues of adherence to ART among PLWA who currently take the drug. Qualitative data was collected using In-depth Interview of PLWA and care providers in the hospital and focus group discussions among ART users and community leaders.

Felege Hiwot Referral Hospital was among the first few public hospitals to start ART in Ethiopia. Even though ART service is being expanded to health centers, it still shares the highest burden in the town and surrounding woredas. It is too busy hospital especially the ART unit and the demand is still increasing.

STUDY POPULATION

The study population was adult patients (age ≥ 18 years) of both sexes taking ART as out-patient or in-patient in Felege Hiwot Referral Hospital. Health professionals working in the ART unit were also the study subjects.

INCLUSION AND EXCLUSION CRITERION:

Inclusion Criteria for PLWAs

People Living with AIDS greater than or equal to 18 years old, those who are on ART for a period of ≥ 6 months. In case of the first regimen changed, those PLWA who took it for ≥ 1 month on current regimen, willing to participate after listening or reading the consent paper written in first language of the respondent

Exclusion Criteria for PLWAs

Those PLWA and who took ARV treatment for less than 6 months, or <1 month on current regimen. Patients unwilling to participate after listening or reading the letter of consent written in their first language, unconscious or seriously ill patient and mentally impaired and mentally disabled.

Sample size determination

Sample size was calculated with the following assumptions:

1. Proportion of adults expected to be adherent in self-report method is 81.2%. (Taken from a study in Addis Ababa) (8).
2. The level of significance (alpha) is taken as 0.05 (95% confidence interval)
3. The absolute precision (marginal error) is estimated to be 5%. Using the formula to find the sample size calculation for a single proportion

$$n = \frac{1.96^2(0.812 \times 0.188)}{(0.05)^2} = 235 \text{ where } n = \text{Sample size}$$

Since the study population is less than 10,000 $\underline{no} = \underline{214}$ $214 * 15\% + 214 = \underline{249}$
 $(1 + \underline{no})$ $N = 2,500$
 N

There was addition of 15% contingency and totally 249 patients were included in the study.

Sampling Method and Data collection procedures

The study subjects were selected from daily registered patient book. Adherence data were collected from patients who are currently on ART.

Structured questionnaire was prepared and patients were asked to report their level of adherence for medications in the past 7 and 3 days and their reason for missing doses any time before these days was recorded in face-to-face interview. Data collectors were nurses selected based on their previous trainings on HIV testing, counseling and ART experiences. In-depth interview and FGDs were conducted on purposively selected care providers and cases with different background and socio-demography.

Variables of the study:

- **Outcome variables:** Adherence (*Dose adherence*)
- **Explanatory variables:-Patient related:** (Socio-demographic variables (age, sex, ethnicity, education, marital status, occupation, income, residence), perception of consequences on non adherence, perceived benefits of ART and proper adherence, alcohol use, use of adherence aids) **Medication and disease related:** Side effects, pill burden and Food restriction, **Patient-provider relationships:** Flexibility of appointments, no trust on physicians, decision making process, **Social context:** Lack of support, lack of privacy and confidentiality; Stigma, work load and transport

Data processing and analysis

Raw quantitative data were entered and analyzed using SPSS 11.0. Different rates and proportions were calculated. P-values <0.05 were considered as statistically significant. Qualitative data were transcribed, coded and analyzed using themes.

Ethical considerations

The RPO of UoG approved the research proposal for ethical considerations. Letter of approval was obtained and it accepted by the hospital management before the work started. Each data collector had a letter of consent written in both Amharic and English languages and instructed to display the letter for those who can read and understand it and take their consent. But, most of the participants gave oral consent because they did not want to sign on the form prepared for the purpose. Data collectors gave verbal explanation to each potential study participant on the nature of the study, its purpose, the expected duration, the potential risks and benefits involved, and any discomfort, it may cause prior to the interview.

RESULTS

Results of quantitative study

Socio-demographic variables: The total study participants who responded to the questionnaire were 249. Out of all respondents, 136 (54.6%) were females and 113 (45.4%) were males. The mean age of the study subjects was 35.83(\pm 8.89) years with median 35 years and ranges from 18-66 year. (Table 1)

About one fourth (25.7%) of the respondents were government employees, the other were from different categories of occupation, like; merchant 46(18.5), daily laborer 23(9.2%) and house wife 22(8.8%). Ninety four percent of the respondents were from the urban and the rest 14(5.6%) were from the rural areas.

Table 1- Socio-demographic characteristics of adult ART users, Bahir Dar, April 2007

| Variable | Number(N=249) | Percent (%) |
|------------------------|---------------|-------------|
| Sex | | |
| Male | 113 | 45.4 |
| Female | 136 | 54.6 |
| Age (Year) | | |
| 18-29 | 63 | 25.3 |
| 30-39 | 106 | 42.6 |
| 40-49 | 60 | 24.1 |
| \geq 50 | 20 | 8.0 |
| Education | | |
| Can not read and write | 51 | 20.5 |
| Can read and write | 9 | 8.8 |
| Grade 1-6 | 39 | 15.7 |

| | | |
|------------------------|-----|------|
| Grade 7-12 | 112 | 45.0 |
| College and University | 38 | 15.3 |
| Marital status | | |
| Married | 117 | 47.0 |
| Not married | 19 | 7.6 |
| Divorced | 44 | 17.7 |
| Widowed | 69 | 27.7 |
| Address | | |
| Rural | 14 | 5.6 |
| Urban | 235 | 94.4 |

Adherence to ART

In the week before the interview, 222(89.2%) of the patients were adherent (took $\geq 95\%$ of drugs prescribed) to their prescribed medication. The rest 27(10.8%) respondents miss their prescribed pills (which is less than 95% of it to be taken). Among them, 22.2% were due to travel far from their home for different reasons, 11.1% were due to wholly water and the rest due to other different reasons like forgetting and busy.

Table 2- Adherence rates by different methods and duration among ART users in Bahir Dar Town, April 2007

| Adherence | Number (249) | Percent (%) |
|--|--------------|-------------|
| Adherence rates in the previous seven days before interview by self report | | |
| Optimal adherence (at least 95%) | 222 | 89.2 |
| Sub optimal adherence (< 95%) | 27 | 10.8 |
| Adherence rates in the previous three days before interview by self report | | |
| Optimal adherence (at least 95%) | 233 | 93.6 |
| Sub optimal adherence (< 95%) | 16 | 6.4 |

Fifteen (6.0%) respondents were not using reminders while the rest 233 (94%) were using different kinds of reminders according to their capacity and access. Some even use more than one reminder like radio, TV and other reminders. Those using reminders were 9.31 times more likely to have optimal adherence than those not using reminders (OR= 9.31 95%CI 1.43, 60.74).

CD4 count and duration of treatment

The mean CD4 count at the beginning of treatment was 135.16 (± 83.47). About 81% of patients had CD4 count less than 200 at their start. But being sometimes on treatment (six

months and above) their CD4 count increase and during the survey the mean was 273.06 (± 131.02). The difference between means of the two CD4 counts was statistically significant ($p < 0.001$).

The mean duration of treatment before the interview was 16.12 (± 0.4) months. Over two third of the respondents (66.9%) were taking drugs for more than a year. The total mean difference between the two CD4 counts was 144.6 (95% CI = 125.7, 163.5). The data reveals that, as one stayed on treatment better improvement was obtained.

Family and social Support

About two third of ART users have support from different community members. Most of them were receiving family supports from wife, husband and children, but 84 (33.7%) reported that they had not received, support by then.

Table 3- Some of adherence related variables among ART users, Bair Dar, April 2007

| Variable | Number(N=249) | Percent (%) |
|--|---------------|-------------|
| Side effects | | |
| Yes | 173 | 69.5 |
| No | 76 | 30.5 |
| Aid use | | |
| Yes | 233 | 93.6 |
| No | 15 | 6.0 |
| Support | | |
| Have no support | 84 | 33.7 |
| Had support | 165 | 66.3 |
| Miss hospital appointment | | |
| Yes | 64 | 24.9 |
| No | 187 | 75.1 |
| Co-treatment | | |
| Yes | 149 | 59.8 |
| No | 100 | 40.2 |
| Frequency of visiting hospital to refill drugs | | |
| Every month | 15 | 6.0 |
| Every two month | 224 | 90.0 |
| Every three month | 10 | 4.0 |

From the total respondents 49(19.7%) are not adhering their food restriction. Those who adhere to the prescribed food restriction were 3.3 times less likely to adhere to medication (OR = 3.33, 95% CI 1.4, 7.7). They most commonly drink alcohol and eat uncooked foods which may expose them for illnesses and could be reason for missing drugs.

Table 4- Logistic regression analysis of Variables associated with adherence to ART in Bahir Dar town, April 2007.

| Variables | Adherence | | Unadjusted OR(95% CI) | Adjusted OR(95% CI) |
|---|------------------|-------------------|-----------------------|--------------------------|
| | Optimal (>=95%) | Suboptimal (<95%) | | |
| ART start time | | | | |
| > 12 months | 152(91.0) | 15(9.0) | 1.74(0.77,3.94) | 1.55(0.52,4.78) |
| < or = 12 months | 70(85.4) | 12 (14.6) | | |
| Did you take food that is restricted not to take | | | | |
| No | 184(92.0) | 16(8.0) | 3.33(1.43,7.74)* | 2.72(0.18,4.36) |
| Yes | 38(77.6) | 11(22.4) | | |
| Reminder use | | | | |
| Yes | 212(91.0) | 21(9.0) | 6.73(2.18,20.75)* | 9.31(1.43,60.74)* |
| No | 9(60.0) | 6(40.0) | | |
| Obtain education and support | | | | |
| Yes | 209(90.5) | 22(9.5) | 3.65(1.19,11.21)* | 2.26(0.39,13.09) |
| No | 13(72.2) | 5(27.8) | | |
| Disclose HIV/ART status to others | | | | |
| Yes | 198(88.8) | 25(11.2) | 0.66(0.15,2.96) | 0.58(0.07,4.49) |
| No | 24(92.3) | 2(7.7) | | |
| Appearance of side effects | | | | |
| No | 65(85.5) | 11(14.5) | 0.60(0.27,1.37) | 0.51(0.17,1.50) |
| Yes | 157(90.8) | 16(9.2) | | |

* Significant association

Results of in-depth interview and FGDs

ART users

Based on the objectives, the main themes were identified as information and knowledge about HIV/AIDS, ART use and reminders.

A. Information and knowledge about HIV/AIDS and ART use

Most respondents seemed to have enough information about the disease that is its transmission routes, prevention methods and use of ART. They signify that the importance of adherence is mandatory to attain most possible condition of health.

One male respondent said that:

"The drug is very useful and important. I feel as if I am free of the virus and this feeling makes me strong and thus encourages my adherence to the drug. I didn't miss the drug because I am afraid that the virus will develop resistance and my health will deteriorate."

B. Adherence to ARVs

Majority of the respondents believed that only the maximum possible adherence results good health condition. Most of them also recognize that strict time schedule and food

restriction adherence has strong effect on their health outcomes. One female who is 29 years old and a government employee noted that:

"I didn't miss the drugs but I sometimes delay the time for about 20-30 minutes when I was busy at home."

C. Availability and quality of care

The respondents were asked about the availability of drugs and other services and also about their perception of respect for health workers, and vice versa as well as their privacy maintained. Most respondent are satisfied or the services provided to them were good.

D. Reminders

Most respondents expressed the importance of adherence aids or reminders like radio, ringing wrist watch and other aids. Some of them use more than two aids while the others have not used even one and take their drugs by estimating time.

One female respondent state that: *"I didn't use any reminder like radio or wrist watch. I only use the sun rise and sun set. I am not even comfortable to ask others what time it was because I suspect that they may know my sero status and afraid of facing stigma and discrimination."*

DISCUSSION

The study attempts to explore factors affecting adherence to ART in Felege Hiwot referral Hospital. Many reports and literatures address that suboptimal adherence is the main cause of failure of Antiretroviral therapy. High levels of adherence (>95%) is required to be effective (7). This study examined factors that affect adherence positively and negatively. Factors like use of reminders, adhering to food restriction and satisfied with the support and education given at the treatment place and time were considered to be positive while factors like stigma, poor social support, transport cost, side effects, pill burdens are considered to be negative factors that may contribute for poor adherence.

Adherence measurement

The study found 89.2% adherence in the seven days self reported adherence rate. This result shows a little higher adherence rate than the other studies in Addis Ababa. Among the ART users studies showed that adherence to medication was 82.8% in defense Hospitals and 81.2% in three Public Hospitals in Addis Ababa (8, 11). The high adherence rate witnessed in this study could be due to participants who are on ART relatively for longer duration (six months and above) and experienced on how to adhere to their medication. They also saw improvements in their own health and encouraged to take their pills on time. The appearance of side effects which are most frequently seen in early weeks of starting of

ART and common causes of interruption might have contributed for the differences obtained. Side effects of the drugs were significantly associated with poor drug adherence in the study conducted in Addis Ababa (8) but not in this study, there was no evidence for side effects.

The mean and median of CD4 counts were increased by double after some time of receiving the treatment (mostly, the second CD4 count done after six months). The increase in CD4 count also indicates that immunologic improvements achieved due to better adherence to medication. Study done in India that adherence was associated with current CD4 count (12). In this study, the difference of two counts were also significantly associated with the time of start of treatment and this indicates that positive immunologic progress from time to time is associated with improved health condition of individuals.

Use of reminders has shown strong association with adherence. Those patients who use reminders were highly adherent to their prescribed medication. The common reason for not taking the pills in time was forgetting and being busy according to this study. This can be easily alleviated by using reminders.

LIMITATION OF THE STUDY

- The study was conducted in one hospital and it doesn't include factors influencing in other areas in the country.
- The study population includes only patients on treatment, but, it doesn't include patients who had discontinued their treatment due to some serious reasons.

CONCLUSIONS AND RECOMMENDATIONS

This rate of adherence is higher than those results in other studies in Ethiopia and abroad, particularly in resource poor countries. Based on the results of this study, the following points are recommended:

- Returned pills counting should be experienced. Therefore, Pill counting is an important monitoring and adherence promotion tool for both providers and users.
- Train more adherence counselors in order to cover the growing number of ART users and continuously update their knowledge about HIV and AIDS
- Address frequent turnover of health professionals by studying the major problems.
- The leading reason for missing drugs or passing time of taking drugs identified was forgetfulness. Therefore, it is necessary to supply reminders and provide intensive health education.

- Discussion with the religious leaders and health education in the community has to be made to address the problems of interruption due to holy water
- Further research on adherence and if possible on drug resistance should be encouraged.

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THESIS-SEVEN

Assessment of Knowledge, Attitude and Practice about Voluntary HIV Counseling and Testing among 15-49 Years in Dessie Town Administration , South Wollo Zone ,North East Ethiopia.

Amare Kentiba

ABSTRACT

Back ground: Currently Voluntary Counseling and Testing (VCT) service is considered as one of the priority intervention areas and it is one of the strategies of HIV/AIDS prevention. However, many people with the virus in the country do not know their sero status.

Objective: To assess knowledge, attitude and practice about Voluntary HIV counseling and testing among 15-49 years in Dessie Town Administration, Northeast Ethiopia.

Method: Community based cross sectional study using both quantitative and qualitative method was conducted in Dessie Town. A total of 533 people of age 15-49 years were interviewed by a pre tested questionnaire. The study was conducted from January 2006 - April 2007. Data coded, & entered using EPI info version 6 and analyzed by SPSS 10 statistical packages.

Result: A total of 533 subjects (100%response rate) were interviewed. The mean age of the respondents was 25.87years. Participants were 44.3% males and 55.7% females. Majority, 498(93.4%) had heard about VCT. Seventy five percent, 74% and 38% of the respondents were knowledgeable about VCT, holds positive attitude towards VCT and undergone VCT respectively.

Conclusion: Although gaps between knowledge & attitude, and knowledge & practice continue to exist, this study has shown that there has been significant progress in narrowing those gaps. Individuals with age groups 20-29 were 2 and 3 times more likely had positive attitude towards VCT and utilization of VCT respectively compared to age 15-19 groups. The family is insignificant as source of information, most probably because of cultural barriers in discussing sexual issues.

Recommendations: To create behavioral change, sustainable IEC at all level should be given by Dessie woreda health office in collaboration with all stakeholders working in the woreda. Parents, religious leaders and higher officials should be involved actively on dissemination of information and HIV testing.

INTRODUCTION

AIDS is unique in human history in its rapid spread, extent and depth of impact. Globally, 40 million people are expected to be HIV positive, out of which two-third of them live in sub-Saharan Africa (1). In Ethiopia, the first evidence of HIV infection was reported in 1986 in Addis Ababa (2). Twenty-two years on, the number of HIV infected people has reached an estimated 1.32 million. This is a staggering number to cope up with for a resource poor country like Ethiopia (3).

Currently, VCT service is considered as one of the priority intervention areas and it is one of the strategies of HIV/AIDS prevention. However, many people with the virus in the country do not know their sero status. This is due to lack of awareness on the availability of the service, afraid of positive result, fear of stigma and discrimination. Moreover, inaccessibility to VCT service and poor follow up services (4, 5, 6) also affects VCT services. The presence of effective and accessible medical care and supportive services for PLWHA strengthen the promotion of VCT service (7).

A study conducted in North and South Gondar revealed that among the study subjects 283 (80.6%) of the urban residence and 78 (87.6%) of the rural residence were willing to accept VCT (8). Another community based study in Harar among 15-49 years showed that 85% of the respondents have intention of having VCT (9).

A study from Zambia examined the readiness to utilize VCT service offered to 4812 participants from rural and urban sites. Although 37% initially expressed willingness to use VCT service, only 3.6% actually came for VCT (10).

There may also be a great difference in the theoretical and actual up take rate. For example, in Lusaka when students were asked if they wish to be tested for HIV, there was a very high rate of interest. When the service was provided initially, up take was very low. However, with time there has been increasing demand for VCT (11). This shows that there is a gap between people's knowledge and practice.

Such type of study was not conducted in my study area and this study will help as a base line for other similar studies. This study try to investigate whether the target population has sufficient knowledge about VCT, their attitude towards VCT service and whether knowledge and attitude are sufficient factors for better utilization of VCT services.

OBJECTIVES

General Objective

- To assess the knowledge, attitude and practice on Voluntary HIV counselling and testing among 15-49 years in Dessie Town Administration, South Wollo Zone, Northeast Ethiopia.

Specific objectives

- To assess knowledge of people aged 15-49 about VCT
- To assess attitude of people aged 15-49 towards VCT service
- To assess VCT service utilization of people aged 15-49

METHODS

Study area: Dessie Town Administration. Currently, the town is divided into 15 centers/Kebeles. According to the 1994 census projection the total population of Dessie Town Administration is 208,301.

Study design: Community based cross sectional study using both quantitative and qualitative methods.

Source populations were 105,359 (50.58% of the total population) for individuals aged 15-49 years.

Study populations: The study populations were people aged 15-49 randomly selected from Dessie town administration.

Sample size determination

The sample size was determined using a formula of single population proportion.

$$n = \frac{Z^2 p(1-p)}{W^2}$$

Assumptions

Z^2 = Standard score at α 0.05 which is equal to 1.96

p = Proportion taken from Study conducted in North and South Gondar willingness to accept VCT/positive attitude towards VCT among different professionals and community groups on urban 80.6%=0.806

$q = 1 - 0.806 = 0.194$ w = Margin of error = 0.05

Design effect = 2 Non response rate = 10%

Total samples required = 533

Sampling procedure

- Overall, multistage sampling technique was used to conduct the study.
- Primary sampling unit /stage-Kebeles/centers
- Secondary sampling unit/stage-Gots/ketenas
- Tertiary and fourth unit/stage-Households and 15-49 year's individuals
- Proportional allocation of samples were distributed to the selected kebeles and Gots/Ketenas

Data collection

Quantitative methods

Standard questionnaire adopted from BSS were used. The questionnaire prepared in English translated in Amharic and the Amharic version translated to English again to see its consistency with the original. Data were collected by eight trained data collectors identified from the study areas.

Qualitative study

Semi- structured and open-ended guiding questions were used to guide the discussions for focus group discussion (FGD) and in-depth interviews.

Four groups of FGD were conducted; each session was recorded using tape recorder and assisted with taking notes. The principal investigator facilitated the discussion and the in-depth interview.

Data process and analysis

Data were coded, entered using EPI 6 and analyzed by SPSS-10 statistical packages. Frequencies and percentages were calculated;

Odds ratio with 95% confidence interval of different variables was computed;

Logistic regression was employed to control the possible confounding factors.

Data quality control

Pre-testing and some minor modifications of the questionnaire was made;

Strict daily supervision of the data collection process and checking filled questionnaires were done.

Ethical consideration

Ethical clearance obtained from Research Publication Office of the University of Gondar;

Official permission was secured from different concerned authorities, including from EPHA;

Verbal consent obtained from each adult respondent. For those <18 years, parental consent was employed.

RESULTS

A total of 533 subjects (response rate 100%) aged 15 to 49 years, who live in Dessie Town Administration were interviewed. The mean age of the study subjects was 25.87 years, with the standard deviation of 9.23. Out of 533 subjects 236 (44.3%) were males and 299 (55.7%) were females. Three hundred eight-six (72.4%) of the subjects were in between the age ranges of 15 - 29 years. The 285 (53.5%) of the respondents were unmarried (single), while, 211 (39.6%) were married respondents. Divorced and widowed constituted the remaining small proportion of 6.9%. Three hundred twenty-seven (61.3%) of the respondents were grade nine and above. Those without formal education or no formal education constitute 9.4%. Unemployed took a major share (38.5%), concerning job of the respondents. Two hundred forty-four (45.8%) of the subjects were orthodox Christians, 270 (50.7%) Muslims and others constitute 3.6 % (Table 1).

Table 1 Socio demographic characteristics among 15-49 years in Dessie town, Northeast Ethiopia, April, 2007 (n=533)

| Variable | Frequency | percent |
|-----------------------|-----------|---------|
| Sex | | |
| Male | 236 | 44.3 |
| Female | 297 | 55.7 |
| Age | | |
| 15-19 | 159 | 29.8 |
| 20-29 | 227 | 42.6 |
| 30-39 | 89 | 16.7 |
| 40-49 | 58 | 10.9 |
| Marital status | | |
| Single | 285 | 53.5 |
| Married | 211 | 39.6 |
| Divorced and Widowed | 37 | 6.9 |
| Educational status | | |
| No formal education | 50 | 9.4 |
| Grade 1-8 | | |
| 156 | 29.3 | |
| Grade 9-12 | 198 | 37.1 |
| Above grade 12 | 129 | 24.2 |
| Current occupation | | |
| Students | 168 | 31.5 |
| Unemployed | 205 | 38.5 |
| Employed | 160 | 30.0 |
| Family monthly income | | |
| < 200 Birr | 255 | 47.8 |
| 200- 400 Birr | 38 | 7.1 |
| 401 - 600 Birr | 134 | 25.0 |
| > 600 Birr | 52 | 9.8 |
| Do not know | 54 | 10.1 |

| Religion | | |
|---------------------|-----|------|
| Orthodox Christians | 244 | 45.8 |
| Muslims | 270 | 50.7 |
| Other Christians | 19 | 3.6 |

Knowledge of VCT Vs Socio-demographic characteristics

Association of socio demographic characteristics of study subjects with Knowledge of VCT was investigated. In this respect; Sex, occupation and religion had no significance association with knowledge of VCT. Whereas; age, marital status, educational status and income status showed significant association. Married individuals were 0.50 times less likely knowledgeable on VCT as compared to unmarried individuals with OR 0.503 (0.300 - 0.841) (P- value 0.009) Similarly individuals with secondary educational level (Grade 9 - 12) and above were more knowledgeable compared to those with no formal education with OR 2.577 (1.221 - 5.438) (P-value 0.013) and 3.05 (1.33 - 6.98) (P-value 0.008) respectively. On the other hand, individuals with an income of 401- 600 Birr per month were more knowledgeable compared to an income less than 200 Birr with OR 2.12 (1.20 - 3.75) (P-value 0.009) (Table 2)

Table 2 Knowledge of VCT Vs socio demographic characteristics among 15-49 years in Dessie town, northeast Ethiopia, April, 2007(n=533)

| Variable | Knowledgeable about VCT | | Crude OR (95%CI) | Adjusted OR(95%CI) |
|---------------------------|-------------------------|----|----------------------|-----------------------|
| | Yes | No | | |
| Sex | | | | |
| Male | 187 | 49 | 1 | |
| Female | 216 | 81 | .699 (.466- 1.048) | .962 (.612 -1.523) |
| Age | | | | |
| 15-19 | 113 | 46 | 1 | |
| 20-29 | 181 | 46 | 1.602(1.000-2.566) | 2.018(1.093-3.725)* |
| 30-39 | 70 | 19 | 1.500(.813-2.766) | 2.570(1.164-5.671)* |
| 40-49 | 39 | 19 | .836 (.438-1.595) | 1.531(.653-3.591) |
| Marital status | | | | |
| Single | 226 | 59 | 1 | |
| Married | 148 | 63 | .613 (.407 -.925) | .503 (.300 -.841)* |
| Divorced and Widowed | 29 | 8 | .946 (.411-2.178) | 1.177 (.442- 3.136) |
| Educational status | | | | |
| No formal education | 30 | 20 | 1 | |
| Grade 1-8 | 104 | 52 | 1.333 (.692 -2.571) | 1.352(.662 -2.761) |
| Grade 9-12 | 161 | 37 | 2.901 (1.486- 5.66) | 2.577 (1.221 -5.438)* |
| Above grade 12 | 108 | 21 | 3.428 (1.646 -7.141) | 3.049(1.332- 6.977)* |
| Current occupation | | | | |
| Student | 134 | 34 | 1 | |
| Unemployed | 149 | 56 | .675 (.415- 1.097) | .580 (.306- 1.098) |

| | | | | |
|-----------------------|-----|----|----------------------|-----------------------|
| Employed | 120 | 40 | .761 (.443 -1.280) | .595 (.302-1.175) |
| Family monthly income | | | | |
| < 200 Birr | 181 | 74 | 1 | |
| 201-400- 900 Birr | 32 | 6 | 2.180 (.875 - 5.431) | 1.916 (.734- 4.999) |
| 401 – 600 Birr | 113 | 21 | 2.199 (1.284- 3.769) | 2.123 (1.202 -3.748)* |
| > 600 Birr | 42 | 10 | 1.717 (.819 -3.602) | 1.305 (.575 -2.965) |
| Do not know | 35 | 19 | .753 (.405 - 1.401) | .603 (.307 -1.184) |
| Religion | | | | |
| Orthodox Christian | 187 | 57 | 1 | |
| Muslim | 200 | 70 | .871 (.582- 1.303) | 1.155 (.738-1.809) |
| Other Christian | 16 | 3 | 1.625 (.457- 5.777) | 1.318 (.352- 4.937) |

* Statistically significant association P- < 0.05

Attitude towards VCT Vs Socio-demographic characteristics

The result revealed that sex, marital status, occupation and religion had no association in both analysis. Whereas, educational status on bivariate analysis and income and age on both analysis showed statistically significant association. Those aged 20-29 had positive attitude towards VCT compared to 15-19 years individuals with OR 2.34(1.28-4.28) (P-value 0.006). Income 401-600 Birr individuals had positive attitude towards VCT compared to individuals whose income less than 200 Birr with OR 2.87 (1.603-5.134) (Table 3).

Table 3 Attitude towards VCT Vs Socio demographic characteristics of study subjects in Dessie town, northeast Ethiopia, April, 2007 (n=533)

| Attitude towards VCT | | | | |
|-----------------------|------------|----------|---------------------|---------------------|
| Variable | HIV Status | | Crude OR (95%CI) | Adjusted OR (95%CI) |
| | Positive | Negative | | |
| Sex | | | | |
| Male | 178 | 58 | 1 | |
| Female | 217 | 80 | .884(.597-1.308) | 1.022 (.664 -1.575) |
| Age | | | | |
| 15-19 | 111 | 48 | 1 | |
| 20-29 | 184 | 43 | 1.850(1.152-2.973) | 2.341(1.281-4.278)* |
| 30-39 | 64 | 25 | 1.107(.624-1.963) | 1.434(.682-3.016) |
| 40-49 | 36 | 22 | .708(.377-1.328) | .947 (.416-2.119) |
| Marital status | | | | |
| Single | 213 | 72 | 1 | |
| Married | 159 | 52 | 1.034 (.685 -1.560) | 1.082 (.655 -1.787) |
| Divorced | 23 | 14 | .555 (.271 – 1.136) | .735 (.310 -1.740) |

| | | | | |
|------------------------------|-----|----|-----------------------|-----------------------|
| and Widowed | | | | |
| Educational status | | | | |
| No formal education | 29 | 21 | 1 | |
| Grade 1-8 | 111 | 45 | 1.786 (.923 – 3.455) | 1.587 (.781 -3.225) |
| Grade 9-12 | 152 | 46 | 2.393 (1.248- 4.589)* | 1.700 (.828 - 3.490) |
| Above grade 12 | 103 | 26 | 2.869 (1.414- 5.820)* | 1.992(.902 -4.397) |
| Current occupation | | | | |
| Student | 129 | 39 | 1 | |
| Unemployed | 152 | 53 | .867 (.539 – 1.395) | .645 (.347 – 1.198) |
| Employed | 114 | 46 | .749 (.457 – 1.230) | .668 (.347 – 1.286) |
| Family monthly income | | | | |
| < 200 Birr | 173 | 82 | 1 | |
| 200-400 Birr | 27 | 11 | 1.163 (.550-2.460) | .910 (.412 -2.010) |
| 401-600 Birr | 116 | 18 | 3.052 (1.740- 5.352) | 2.869 (1.603- 5.134)* |
| > 600 Birr | 39 | 13 | 1.422 (.720 – 2.808) | 1.120 (.525 -2.389) |
| Do not know | 40 | 14 | 1.354 (.698 – 2.628) | 1.410(.704 -2.827) |
| Religion | | | | |
| Orthodox Christian | 187 | 57 | 1 | |
| Muslim | 193 | 77 | .764 (.514 – 1.137) | .923 (.595 -1.430) |
| Other Christian | 15 | 4 | 1.143 (.365 – 3.582) | 1.003 (.301 -3.342) |

* Statistically significant association P- < 0.05

Utilization of VCT

Association of socio demographic variable with utilization of VCT was assessed on Bivariate and multivariate analysis. Based on this Sex, Marital status, income and religion had no association with VCT service utilization. However, age in both analysis and occupation and education had significant association on bivariate analysis. Individuals with age 40 and above were 0.39 times less likely utilize VCT service compared to those with age 15 -19 with OR 0.39 (0.154 -.991) (P- 0.048)(Table 4).

Table 4 Utilization of VCT Vs Socio demographic characteristics among 15-49 years in Dessie town, northeast Ethiopia, April, 2007(n=533)

| Utilization of VCT | | | | |
|------------------------------|-----|-----|-----------------------|----------------------|
| Characteristics | | | Crude OR (95%CI) | Adjusted OR (95%CI) |
| | Yes | No | | |
| Sex | | | | |
| Male | 87 | 149 | 1 | |
| Female | 115 | 182 | 1.082 (.760 -1.540) | 1.254 (.833- 1.887) |
| Age | | | | |
| 15-19 | 36 | 123 | 1 | |
| 20-29 | 126 | 101 | 4.262(2.706-6.714) | 3.071(1.767-5.339)* |
| 30-39 | 30 | 59 | 1.737(.977-3.089) | 1.061(.522-2.154) |
| 40-49 | 10 | 48 | .712(.328-1.547) | .394(.154-.991)* |
| Marital status | | | | |
| Single | 103 | 182 | 1 | |
| Married | 85 | 126 | 1.192 (.827 -1.719) | 1.117 (.709 -1.760) |
| Divorced and Widowed | 14 | 23 | 1.076 (.530 - 2.181) | 1.219 (.522- 2.849) |
| Educational status | | | | |
| No formal education | 16 | 34 | 1 | |
| Grade 1-8 | 49 | 107 | .973 (.491 - 1.928) | 1.039 (.490 - 2.205) |
| Grade 9-12 | 70 | 128 | 1.162 (.600 - 2.252)* | 1.082 (.511 -2.288) |
| Above grade 12 | 67 | 22 | 2.296 (1.155 - 4.56)* | 2.101 (.943- 4.677) |
| Current occupation | | | | |
| Student | 48 | 120 | 1 | |
| Unemployed | 91 | 114 | 1.996(1.294- 3.079)* | 1.524 (.880-2.637) |
| Employed | 63 | 97 | 1.624(1.024-2.575)* | 1.531 (.848- 2.763) |
| Family monthly income | | | | |
| < 200 Birr | 90 | 165 | 1 | |
| 200-400 Birr | 14 | 24 | 1.069 (.527 -2.170) | .860 (.392 -1.889) |
| 401-600 Birr | 54 | 80 | 1.237 (.805- 1.903) | 1.192 (.737- 1.926) |
| > 600 Birr | 23 | 29 | 1.454 (.784 - 2.661) | .992 (.488- 2.013) |
| Do not know | 21 | 33 | 1.167 (.637- 2.135) | 1.479 (.762- 2.870) |

| Religion | | | | |
|--------------------|----|-----|---------------------|---------------------|
| Orthodox Christian | 98 | 146 | 1 | |
| Muslim | 94 | 176 | .796 (.556-1.138) | .923 (.613 -1.390) |
| Other Christian | 10 | 9 | 1.655 (.649- 4.222) | 1.437 (.512- 4.034) |

* Statistically significant association P-<0.05

Ninety- seven of the respondents replied that VCT is necessary .The most important uses mentioned were the following; Four hundred-two (74.5%) for prevention and control of HIV/AIDS, 485(91.0%) to know self status and 413(77.5%) for choosing partner. Out of 485 subjects, who responded *yes* to know self-status for the importance of VCT, 371 had positive attitude towards VCT with OR 2.314 (1.119-4.788) (P-value 0.024). Those individuals who recommended HIV test to others are 7.55 times more likely utilize VCT services compared to those individuals who do not recommend with OR 7.551 (3.069-18.581) (P-<0.001). Four hundred forty-three (83.1%) and 456(85.6%) of the subjects feel that HIV test is undertaken any time and to everybody regardless of their reasons for the test, respectively. This had no significant association with utilization of VCT. The majority, 468(87.8%) believed that there should be premarital screening through VCT. Five hundred -eighteen (97.2%) of the study subjects would like to disclose their positive result to someone, believing on premarital screening and willing to disclose their positive results were found to be associated with utilization of VCT with OR 2.009(1.098-3.679) P- value 0.024 and 1.098(0.638-1.891) P- value 0.047 respectively, (Table 5)

Table 5 Utilization of VCT Vs attitude towards VCT questions/statements among 15-49 years in Dessie town, North east Ethiopia, April, 2007(n=533)

| Utilization of VCT | | | | | |
|--|-----|-----|----------------------|-----------------------|--|
| Characteristics | Yes | No | Crude OR (95%CI) | Adjusted OR (95%CI) | |
| Feel that VCT is necessary | | | | | |
| Yes | 199 | 318 | 2.712 (.763-9.635) | .884 (.210-3.726) | |
| No | 3 | 13 | 1 | | |
| Recommend an HIV test to any of your peers | | | | | |
| Yes | 196 | 265 | 8.136 (3.457-19.147) | 7.551 (3.069-18.581)* | |
| No | 6 | 66 | 1 | | |
| Have the desire to have VCT whether you have it before or not | | | | | |

| | | | | |
|---|-----|-----|---------------------|----------------------|
| Yes | 190 | 269 | 3.649 (1.914-6.595) | 2.533 (1.224-5.243)* |
| No | 12 | 62 | 1 | |
| Feel that HIV test is undertaken to everybody regardless of their reasons for the test | | | | |
| Yes | 176 | 280 | 1.233 (.741-2.050) | 1.098(.638-1.891) |
| No | 26 | 51 | 1 | |
| Believe that HIV test should be conducted at any time | | | | |
| Yes | 170 | 273 | 1.129 (.704-1.810) | 1.069 (.652-1.754) |
| No | 32 | 58 | 1 | |
| Feel that couples should be screened before marriage | | | | |
| Yes | 185 | 283 | 1.846 (1.030-3.308) | 2.009 (1.098-3.679)* |
| No | 17 | | 48 | 1 |
| Willing to pay a reasonable fee for VCT service | | | | |
| Yes | 165 | 240 | 1.691 (1.099-2.601) | 1.206 (.755-1.927) |
| No | 37 | 91 | 1 | |
| If your result is positive would you disclose to others? | | | | |
| Yes | 194 | 324 | .524 (.187-1.467) | 1.098 (.638-1.891)* |
| No | 8 | 7 | 1 | |

* Statistically significant association P-<0.05

Summary Result of Qualitative study

All groups of the discussant said that most of the people in the community had good knowledge about the facts of HIV/AIDS and the importance of VCT. Most of them also know where the service are provided. Most of the FGD members mentioned that testing for HIV is good and useful but difficult to decide until many people get accustomed to it.

As a whole, the majority of the FGD participants agreed that there was a progressive shift from negative attitude to positive attitude towards VCT. The number of VCT clients flowing to VCT centers is an evidence of this. However, it does not mean that everybody has positive attitude towards VCT. For example, 18 Year old male said "If I hear the positive result, I may become hopeless. I feel that I am inferior from others and simply waiting the day of my death".

In addition, although there is a general feeling that counselling is good and confidentiality is kept, people still suspect for being HIV/AIDS when they see an individual repeatedly taking

drugs and visiting the ART clinic. Culture of secrecy may contribute not only to the spread of HIV/AIDS but also the act of taking measures to prevent it.

Most of them mentioned that there should be active involvement of parents, religious leaders and higher officials on HIV testing and they should be example for the community.

DISCUSSION

The 533 study subjects participated in the study with a response rate of 100%. The study demonstrates that 93.4% of the respondents had heard about Voluntary Counseling & testing (VCT) and 75.6% of them were knowledgeable implying the obvious thing that there is a difference between information heard and information internalized. A similar study conducted in Jimma among urban communities and its rural surrounding, 73% of the study subjects had better knowledge (knowledgeable) about VCT (12) and other study conducted in the northwest Ethiopia has shown that 93.7% of the respondents know about the availability of VCT (13). Individuals with age groups 20-29 were 2 and 3 times more likely had positive attitude towards VCT and utilization of VCT respectively compared to age group 15-19 years.

This study has also shown that knowledge of VCT is significantly associated with educational attainment. It was found that respondents with secondary and above education level were more knowledgeable than those with non-formal education. This might be due to the ability to relate things, as this group is likely to have better exposure to scientific knowledge. It could also be because of more access to information through school, for newspapers and different Medias.

Out of the 202 tested individuals, 156(77%) were in between ages 15-29 years. Age of individuals had shown statistically significant association with VCT service utilization. Ages 40 years and above were less likely utilize (0.39) VCT compared to ages 15-19 years, this might be due to the increase in demand for pre-marital VCT by this age group. It could also be due to older age and decreased risk perception or knowledge gap concerning HIV/VCT. Majority of the respondents preferred to be tested by doctors followed by trained counselors, community leaders and Nurses in order of preference. According to a Study conducted on factors associated with VCT utilization in Guraghe zone, SNNPR, Ethiopia, respondents preferred counseling by physician, trained counselor, and HIV positive people (14). Studies done in Uganda and Tanzania, found out that involving traditional healers and religious leaders in HIV counseling showed significant result to expand the VCT service (15).

The finding of the same study indicated that not only health personnel but also others could be involved in counseling service in order to give a wider opportunity to involve community members in the activity of HIV counseling. This practice is at initial stage in our country.

Fear of positive result and stigma attached to AIDS in the public are the major reasons mentioned by all groups of FGD participants and it was supported by the in-depth interview. Similar findings in many developing countries were reported by UNAIDS (16). Different studies showed that people with HIV/AIDS were more stigmatized and discriminated in rural areas compared to urban centers, which remained a challenge to HIV/AIDS prevention and control effort (13, 17)

The FGD also revealed that open and frank discussion on issues related to HIV and VCT were not part of our culture. This may contribute for the increased prevalence of HIV/AIDS and reduced utilization of VCT services. This finding also documented with other studies (18, 19). Properly carried out VCT program is seen as an important way of intervention for normalizing and breaking the vicious circle of fear, stigma and denial. This is consistent with other studies (16, 20, 21, 22).

Sources of information about VCT were 43%, 29.9%, 10.6% and 7.4% from mass media, health worker, friends and teachers respectively. Only small proportion (3.1%) of respondents received information from their families. This may be due to lack of open discussion on issues related to HIV/AIDS and VCT.

Although the majority of the respondents are among the high-risk group; only 16% of the young and unmarried felt that they were at risk. This could be both good and bad news. It is good news if these young person's know all about HIV including what it is, how it is transmitted, how it can be treated or not treated and have already equipped themselves with the preventive measures (including abstinence). It is bad news if they are overconfident of the measures they take or complacent of their healthy looking and feeling. Further following up is required to know which direction they should be categorized.

Four hundred ninety-eight (93.4) of the respondents heard about VCT, 381(76.5%) had positive attitude towards VCT and only 198(37.9%) of the individuals undergone VCT. This indicates the presence of gap of, knowledge about VCT, attitude towards VCT and utilization of VCT services.

This study has shown that there has been significant progress in narrowing those gaps compared to other study conducted in Zambia where willingness to use VCT service were 37% and only 3.6% actually come for the service (10).

Majority, 87.8% of the study subjects believed that there should be premarital screening through VCT. A study conducted in Jimma among Jimma University students also revealed

(71.8%) similar finding (23). This could be due to increase in awareness about the importance of VCT through time.

Five hundred- eighteen (97.2%) of them would like to disclose their positive result to someone. It might be due to the availability of ART service and relatively decreased stigma and discrimination by the community. Whereas a study conducted in Kenya showed that the youth is less likely to share their test result with their parents because of fear of rejection by their families (24).

CONCLUSION

- Although gaps between knowledge & attitude, and knowledge & practice continue to exist, this study has shown that there has been significant progress in narrowing those gaps.
- Individuals with age group of 20-29 years were 2 and 3 times more likely had positive attitude towards VCT and utilization of VCT respectively compared to the age group 15-19 years.
- The family found to be insignificant as source of information, most probably because of cultural barriers in discussing sexual issues.
- Majority of the respondents had a desire to be tested in the future, however, fear of a positive result, feeling of not being at risk, and fear of stigmatisation, still pose barriers for testing.

RECOMMENDATION

- Proper and sustainable IEC activities on HIV/AIDS and VCT should be promoted by involving all stakeholders
- Strengthen the existing VCT center by providing adequate and necessary resources.
- Break the cultural barriers through multi sectoral approach so as to discuss reproductive health issues freely.
- The already started free VCT days /VCT campaign should be strengthened in order to maximize the opportunities of VCT service utilization.

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