

Reproductive health needs of out-of-school adolescents: A cross-sectional comparative study of rural and urban areas in northwest Ethiopia

Alemayehu Seifu¹, Mesganaw Fantahun², Alemayehu Worku²

Abstract

Background: It is a globally acknowledged that adolescents, in general, and out-of-school adolescents, in particular often lack access to health information, counseling, legal protection, as well as health care and other social services.

Objective: This study is intended to assess and compare reproductive health needs of rural and urban out-of-school adolescents.

Methods: A cross-sectional, comparative study was conducted in East Gojjam zone, northwest Ethiopia, in May 2001. Twelve *kebeles* (smallest social administrative units) were randomly selected from four districts (one urban and three rural). A modified, random walk method was used to identify households in each cluster. Trained 12th grade students collected data using pretested questionnaires. The χ^2 - test, the *t*- test, and the Odds Ratio (OR) with 95% Confidence Interval (CI) were used in data analysis. A multiple logistic regression analysis was performed using the SPSS version 10 statistical program to assess the relative impact of variables on sexual activity and contraceptive use.

Results: Overall, 1001 adolescents responded to the interview. Knowledge on reproductive issues appeared good but several misconceptions were observed. Only 53% of the study participants knew that a healthy looking person can have HIV while 40% said that a person can get HIV the first time he/ she has sex. About 10% of the participants believed that they were at risk of getting HIV in the next 12 months, whereas more than 45% reported that they had sexual experience. The mean age at first sexual onset was found to be 13.6 years. Significantly higher proportions of rural adolescents were also found to be sexually active (OR =3.0; 95%CI = 1.9, 6.2). About 46% of the sexually active rural adolescents had 2-5 lifetime sexual partners compared to 35.4% of their urban counterparts. However, contraceptive use including condoms was ten times lower among rural adolescents (OR = 0.10; 95%CI =0.04 - 0.3). Only 2% of the rural compared to 35% of the urban sexually active adolescents had ever used condoms. A high divorce rate of 32% in rural and 27% in the urban adolescents was noted.

Conclusions: Early and unprotected sexual activity and misconceptions about HIV/AIDS were found to be prevalent in the study population and rural out-of-school adolescents are at the greatest risk of sexual and reproductive health problems. In this era of the rapid spread of HIV/AIDS, high mobility and the ever increasing interaction between rural and urban populations, appropriate programs to prevent HIV/AIDS and promote reproductive health should be designed for out of school adolescents and rural out of school adolescents need the utmost attention. [*Ethiop.J.Health Dev.* 2006;20(1):10-17]

Introduction

Adolescence is the process whereby an individual makes the gradual transition from childhood to adulthood (1). This period is traditionally regarded as a period that is relatively free of health problems (2). But health is clearly more than the absence of illness. That is, in addition to surviving, life also encompasses thriving (3). Moreover, recent estimates indicate that one out of five adolescents aged 10-19 has at least one serious health problem (4). It is estimated that over 60% of STI cases reported yearly occur among individuals under the age of 24 with one fourth being between the ages of 15-19 years (5). Globally, more than half of all HIV infections occur among 15-24 year olds (6). For example the proportion of sexually active adolescents in Latin America varies from 18% in Peru to 30% in Paraguay (7). Similarly, in sub Saharan Africa it ranges from 14% in Rwanda to 68% in Cameroon (7). Some studies in Ethiopia have

shown a relatively high sexual activity rate of about 30%-60% among out of school adolescents (8-10).

Early marriage is also one of the most important RH problems that adolescents face. In Mali, for example, 70% of young women first married before the age of 18 (11). Early marriage is practiced to a large extent in the northern and northwestern parts of Ethiopia. The highest prevalence rate exists among the Amhara (62%) people of north Ethiopia. In some areas, engagement for marriage takes place as early as 4-5 years of age for girls. (12)

In 11 sub-Saharan African countries surveyed in one study, more than one fifth of recent births were reported as unintended (11). Similarly, in Ethiopia, the prevalence of unintended pregnancy was found to be 15% in Harar (13), 30% in Gondar (14) and 50% in Koladiba (15). A study conducted in Addis Ababa among youth indicated

¹Amhara National Regional State Health Bureau, P.O.Box 4710 Addis Ababa, Ethiopia, E-mail: alemayehs@careet.org, seifualem04@yahoo.com; ²Department of Community Health, Faculty of Medicine, Addis Ababa University, P.O.Box 9086, E-mail: mesganaw_f@yahoo.com

that 50% of the female respondents have been pregnant, of which 74% ended in illicit abortions (16).

In Ethiopia, out of the STI cases officially reported to WHO in 1998, 5% (2% of which are males and 10% are females) were adolescents (5). However, most adolescents had insufficient knowledge about HIV/AIDS and most of them considered that they were not at risk of acquiring AIDS (17).

Within adolescent populations some groups have specific needs and/or vulnerabilities (6). In the year 2000 it was estimated that 404 million people or 38% of youth under the age of 18 in developing countries do not attend school (18). These youths are vulnerable to sexual exploitation and are, thus, at a disproportionately high risk of negative reproductive health outcomes. They often lack access to health information, counseling, legal protection as well as health care and other services.

Variations in the relative health and well being of adolescents are also related to the places where they live. Rural youth involve in marriage and sex earlier than their urban counterparts (19). On the other hand, HIV/AIDS prevalence among urban residents is estimated to be 12.6% in Ethiopia whereas it is estimated at 2.6% in rural areas (20) thus giving the impression that HIV/AIDS is more of an urban problem. Most available IEC interventions should, thus, target urban and school youth.

Several reports had shown that contraceptive use including condoms use among adolescents is not only low but also inconsistent. Condom use among adolescents in Ethiopia ranged from 18% among adolescents attending schools to 57% among out of school youth (8, 9, 21,22).

Analysis of data from several health surveys has shown a consistent discrepancy between knowledge about and the level of contraceptive use (23). A study among urban youth in Ethiopia has revealed the same fact (24).

Moreover, a few of the existing studies on the health service utilization patterns of adolescents in Ethiopia have revealed both school and out of school adolescents to have poor access to reproductive health services. (24). Out of the reasons for not seeking RH services, feelings of discomfort, belief that the services are not intended for them, fear of being seen by parents and others, embarrassment at needing RH services and expensiveness of services were mentioned to be important barriers. (24).

The main objective of this study, thus, is to assess the RH needs of out-of-school adolescents and the differences that exist between rural and urban out-of-school adolescents in this respect.

Methods

Study area: The study was conducted in East Gojjam Administrative zone, northwest Ethiopia. There are 14 districts (*woredas*) in the Zone. The capital of the zone, Debremarkos, was selected to represent the urban community. Excluding Guzamin *woreda* most of whose *kebeles* are semi-urban, three *woredas* namely, Bibugne, Basoliben and Enarj Enawga, were selected to represent the rural community.

Study population: The study populations are adolescents living in the six urban and another six rural *kebeles* selected for the study. These include those aged 10-19 years with the sole exclusion criterion of attending regular day time/ school at the time of the study.

Design and sampling procedures: This study is a cross sectional comparative survey. Six urban *kebeles* were randomly selected from Debremarkos town. Three *woredas* out of twelve and then two *kebeles* from each of the three *woredas* at random were selected from the rural areas. The sample size for both rural and urban areas was allocated to each of the *kebeles* in proportion with the size of the *kebeles*.

In each of the twelve *kebeles*, a modified random walk method was applied to identify the study households. That is, after at least four starting points were identified for each *kebele* using the map of each *Woreda*, two starting points were selected randomly together with the direction of walk. This was done to reduce sampling errors and the clustering effect that could result from using only one starting point. Then, the total sample size for that particular *kebele* was divided into two. One half of the households were interviewed beginning from the first starting point and the other half were interviewed starting from the second.

Sample size determination: A total sample size of 1040 out-of-school adolescents was determined using a general formula for two proportions by taking the level of significance to be 5% and the power to be 90%, proportion of adolescents with knowledge of STIs or unwanted pregnancy 50%, difference of 15% between urban and rural adolescents. A design effect of two was considered as the sampling procedure had involved more than a stage. A no-response rate of 15% was also added.

Data collection and management: Data were collected by trained 12th grade complete students using a pretested questionnaire from April 20 to May 9, 2001. Two trained supervisors and one of the investigators made a close supervision of field data collection procedures.

Data analysis: Data were entered and cleaned using the EPI INFO version 6.04 statistical package. Frequencies, proportions, as well as mean, and standard deviation were used to describe the study population in relation to

socio - demographic variables. The χ^2 - test, *t*- test, and Odds Ratio (OR) with a 95% Confidence Interval (CI) were used to analyze the data. Multiple logistic regression analysis was performed using SPSS version 10 statistical program to assess the relative importance of predictor variables.

Results

Overall, 1001(96.3%) study subjects responded to the interview and more than half, (57%) of the respondents were females. The mean (\pm SD) age of the study subjects was 16.0(\pm 2.55) years. About 44% had ever been married of which 54% had already been divorced (Table 1).

Seventy eight percent of the respondents reported that they knew at least one way of avoiding pregnancy. However, about 18% answered that douching is one of the alternative methods of contraception and only 46% of them knew that a girl could get pregnant the first time she has sex. Only 8% of the participants answered that a woman could get pregnant halfway between two periods. Moreover, only 53% knew that a healthy looking person

could have HIV and 40% knew that a person could get HIV the first time he or she has sex.

Table 2 shows the attitudes and perceptions of the study subjects towards selected sexual and reproductive health issues by place of residence. About 36% believe that using condoms is a sign of not trusting one's partner and 20% think discussing about condoms or other contraceptives promotes promiscuity. A higher proportion (44.1%) of the urban adolescents disagreed with the idea that using condom is a sign of mistrust of a partner compared to rural adolescents (23.7%). About 10% believed that they were at risk of getting the AIDS virus in the next 12 months and 5% thought they have done something that puts them at risk.

As shown on Table 3, more boys tend to believe that condom use is a sign of distrust to a partner. A higher proportion of both sexes preferred young health care providers of the same sex (32.7%) compared to other age-sex combinations. More girls prefer young and same sex providers (38.5%) compared to boys (25.5%) and both girls and boys highly preferred same sex providers.

Table 1: **Socio-demographic characteristics of out of school adolescents by place of residence in East Gojjam, May 2001.**

| Variables | Rural (n=511) | | Urban (n=490) | | Total (n=1001) | |
|---|---------------|------|---------------|------|----------------|------|
| | n | % | n | % | n | % |
| Sex | | | | | | |
| Male | 235 | 46.2 | 200 | 40.8 | 435 | 43.5 |
| Female | 276 | 53.8 | 290 | 59.2 | 566 | 56.5 |
| Age | | | | | | |
| 10-14 | 144 | 28.2 | 111 | 22.7 | 256 | 25.6 |
| 15-19 | 367 | 71.8 | 379 | 77.3 | 745 | 74.4 |
| Marital status | | | | | | |
| Never married | 170 | 33.3 | 394 | 80.4 | 564 | 56.3 |
| Currently married | 162 | 31.7 | 19 | 3.9 | 181 | 18.1 |
| Divorced | 160 | 31.3 | 76 | 15.5 | 236 | 23.6 |
| Separated/Widowed | 19 | 3.7 | 1 | 0.2 | 20 | 2.0 |
| Educational level | | | | | | |
| Illiterate | 428 | 83.8 | 167 | 34.1 | 595 | 59.4 |
| Read and write | 36 | 7.0 | 15 | 3.1 | 51 | 5.1 |
| Primary | 44 | 8.6 | 138 | 28.2 | 182 | 18.2 |
| Secondary | 3 | 0.6 | 170 | 34.7 | 173 | 17.3 |
| Income (in Birr)/month | | | | | | |
| None | 308 | 60.3 | 257 | 52.4 | 565 | 56.4 |
| 3-50 | 59 | 11.5 | 176 | 35.9 | 235 | 23.5 |
| 51-100 | 32 | 6.3 | 33 | 6.7 | 65 | 6.5 |
| 101-150 | 39 | 7.6 | 14 | 2.9 | 53 | 5.3 |
| 151+ | 73 | 14.3 | 10 | 2.0 | 83 | 8.3 |
| Perceived family economic status | | | | | | |
| Poor | 148 | 29.0 | 230 | 46.9 | 378 | 37.8 |
| Medium | 292 | 57.1 | 243 | 49.6 | 535 | 53.4 |
| Rich | 71 | 13.9 | 17 | 3.5 | 88 | 8.8 |
| Living most of the time with | | | | | | |
| Both parents | 245 | 48.0 | 118 | 24.1 | 363 | 36.2 |
| Single parent family | 42 | 8.2 | 147 | 30.0 | 189 | 18.9 |
| Others | 74 | 14.5 | 210 | 42.9 | 284 | 28.4 |
| Husband or wife/spouse | 150 | 29.4 | 15 | 3.1 | 165 | 16.5 |

Table 2: Attitudes of out of school adolescents towards selected sexual and reproductive health issues by place of residence in East Gojjam, May 2001.

| Variables | Rural (n=511) | | Urban (n=490) | | Total (n=1001) | | χ^2 |
|---|---------------|------|---------------|------|----------------|------|----------|
| | n | % | n | % | n | % | |
| Using condom is a sign of not trusting your partner | | | | | | | |
| Agree | 192 | 37.6 | 171 | 34.9 | 363 | 36.3 | 57.6*** |
| Not sure | 198 | 38.7 | 103 | 21.0 | 301 | 30.1 | 30.1 |
| Disagree | 121 | 23.7 | 216 | 44.1 | 337 | 33.6 | 33.6 |
| A boy should have sex before he gets married | | | | | | | |
| Agree | 126 | 24.7 | 77 | 15.7 | 203 | 20.0 | 23.5*** |
| Not sure | 79 | 15.4 | 49 | 10.0 | 128 | 32.8 | |
| Disagree | 306 | 59.9 | 364 | 74.3 | 670 | 67.0 | |
| Discussing condom or contraceptive with young people promotes promiscuity | | | | | | | |
| Agree | 93 | 18.2 | 112 | 22.9 | 205 | 20.5 | 69.0*** |
| Not sure | 193 | 37.8 | 72 | 14.7 | 265 | 26.5 | |
| Disagree | 225 | 44.0 | 306 | 62.4 | 531 | 53.0 | |
| Believe that they have done something that put at risk of getting AIDS | | | | | | | |
| Yes | 12 | 2.4 | 37 | 7.6 | 49 | 4.9 | 13.5** |
| No | 499 | 97.6 | 453 | 92.4 | 952 | 94.1 | |
| Believe that they are at risk of getting the AIDS virus in the next 12 month | | | | | | | |
| Yes | 39 | 7.6 | 61 | 12.4 | 100 | 10.0 | 5.93* |
| No | 472 | 92.4 | 429 | 87.6 | 901 | 90.0 | |

N.B *= $P < 0.05$, **= $P < 0.001$, ***= $P < 0.0001$

Table 3: Attitudes of out of school adolescents towards selected sexual and reproductive health issues by gender in East Gojjam, May 2001 (n=1001)

| Variables | Male (n=435) | | Female (n=566) | | Total | | χ^2 |
|--|--------------|------|----------------|------|-------|------|----------|
| | n | % | n | % | n | % | |
| Using condom is a sign of not trusting your partner | | | | | | | |
| Agree | 220 | 50.6 | 1431 | 25.3 | 363 | 36.1 | 73.5*** |
| Not sure | 87 | 20.0 | 214 | 37.8 | 301 | 30.1 | |
| Disagree | 128 | 29.4 | 209 | 36.9 | 337 | 33.6 | |
| A boy should have sex before he gets married | | | | | | | |
| Agree | 127 | 29.2 | 76 | 13.4 | 203 | 20.0 | 58.6*** |
| Not sure | 26 | 6.0 | 102 | 18.0 | 128 | 32.8 | |
| Disagree | 282 | 64.8 | 388 | 68.6 | 670 | 67.0 | |
| Discussing condom or contraceptive with young people promotes promiscuity | | | | | | | |
| Agree | 106 | 24.4 | 99 | 17.5 | 205 | 20.5 | 7.43*** |
| Not sure | 106 | 24.4 | 159 | 28.1 | 265 | 26.5 | |
| Disagree | 223 | 51.3 | 308 | 54.4 | 531 | 53.0 | |
| Believe that they have done something that put at risk of getting AIDS | | | | | | | |
| Yes | 24 | 5.5 | 25 | 4.4 | 49 | 4.9 | 0.43 |
| No | 411 | 94.5 | 541 | 95 | 952 | 95.1 | |
| Preference by service provider | | | | | | | |
| Young provider of the same sex | 111 | 217 | 217 | 38.3 | 328 | 32.7 | 34.49*** |
| Young provider of any sex | 28 | 26 | 26 | 4.6 | 54 | 5.4 | |
| Adult provider of the same sex | 85 | 102 | 102 | 18.0 | 187 | 18.7 | |
| Adult provider of any sex | 87 | 53 | 53 | 9.4 | 140 | 14.0 | |
| Any provider | 111 | 147 | 147 | 26.0 | 258 | 25.7 | |
| Others | 13 | 21 | 21 | 3.7 | 34 | 3.4 | |

***Significant

Table 4: **Association of sexual activity of out of school adolescents with socio-demographic factors in East Gojjam, May 2001 (n=1001).**

| Variables | Ever had sexual intercourse | | OR (95% CI) | Adjusted OR 95% CI |
|-------------------------------------|-----------------------------|-----|----------------------|--------------------|
| | Yes | No | | |
| Place of Residence | | | | |
| Urban | 144 | 346 | 1.00 | 1.00 |
| Rural | 308 | 203 | 3.65 (2.78, 4.78)* | 3.0 (1.93, 6.24)* |
| Age | | | | |
| 10-14 | 36 | 220 | 1.00 | 1.00 |
| 15-19 | 416 | 329 | 7.73 (5.2, 11.53)* | 4.80 (2.82, 8.14)* |
| Sex | | | | |
| Male | 141 | 294 | 1.00 | 1.00 |
| Female | 311 | 255 | 2.54 (1.94, 3.33)* | 3.24 (2.0, 5.3)* |
| Educational level | | | | |
| Illiterate | 332 | 263 | 1.00 | 1.00 |
| Read and write | 20 | 31 | 0.51 (0.27, 0.94)* | 2.21 (1.1, 4.6)* |
| Primary | 49 | 133 | 0.29 (0.20, 0.43)* | 2.89 (0.9, 9.8) |
| Secondary | 51 | 122 | 0.33 (0.23, 0.48)* | 1.78 (0.90, 3.51) |
| Income(Birr/month) | | | | |
| None | 199 | 366 | 1.00 | 1.00 |
| 3-50 | 96 | 139 | 1.27 (0.92, 1.76) | 4.44 (1.5, 12.9)* |
| 51-100 | 40 | 25 | 2.94 (1.68, 6.16)* | 5.12 (1.8, 14.3)* |
| 101-150 | 44 | 9 | 8.99 (4.12, 20.21)* | 1.09 (0.3, 3.7) |
| 151+ | 73 | 10 | 13.43 (6.54, 28.30)* | 0.50 (0.12, 2.0) |
| Living most of the time with | | | | |
| Both parents | 137 | 226 | 1.00 | 1.00 |
| Single parent family | 49 | 140 | 0.73 (0.38, 0.87)* | 2.55 (1.6, 14.0)* |
| Others | 266 | 183 | 2.4 (1.79, 3.22)* | 2.19 (1.33, .78)* |
| Father's Education | | | | |
| Illiterate | 324 | 339 | 1.00 | 1.00 |
| Literate | 128 | 210 | 0.64 (0.5, 0.8)* | 1.0 (0.6, 1.5) |
| Mother's education | | | | |
| Illiterate | 402 | 429 | 1.00 | 1.00 |
| Literate | 50 | 120 | 0.44 (0.3, 0.6) | 1.7 (1.0, 2.9)* |

N.B *=Significant Difference, OR=Odds Ratio, CI=Confidence Interval

About 45% of the participants reported that they had sexual experiences, of whom 141 (31%) were males and controlling for possible confounding variables sexual activity was found to be significantly associated with rural residence, older age, female sex, mother's education, and not living with both parents (Table 4).

Modern contraceptive use was found to be low (21%) among the sexually active study subjects. Only 44 (12%) of those who were ever married had used modern contraceptives compared to 52 (57%) sexually active adolescents who were never married. Only 2% of the rural compared to 35% of the urban sexually active adolescents had ever used condoms. After controlling for confounders, only place of residence and mother's education remained to be significantly associated with contraceptive use (Table 5).

Eighty seven (8.7%) of the participants have visited health institutions in the three months time prior to the study, the majority of whom were females. More than half, 48 (55.2%) participants reported that they had visited health institutions for reproductive health reasons

which included counseling on RH (18 cases), seeking contraceptives (17cases.), treatment for STIs (5 cases), seeking condoms (3 cases) and the rest six for antenatal or delivery purposes. The majority, 70(82.6%) have visited public health institutions and 10 (11.5%) each visited clinics run by NGOs and private health institutions. Among the common reasons for preference to visit such health institutions proximity 30 (34.5%), better treatment 25 (28.7%), free or low cost of treatment 23 (26.4%) and parents preference of the places 9 (10.6%) were the major ones. Too expensive services (23%), lack of privacy and confidentiality and long waiting time (14%), too distant health institutions (11%), and shyness (4%) were reported to be the major reasons that prevent adolescents from visiting health institutions.

Discussion

About 44% of adolescents in this study had ever been married. This high proportion of marriages may, in addition to other reasons, be due to lower school involvement of the study subjects although the reverse causality may be true. Early marriage is a common phenomenon in sub-Saharan Africa as was also reported

Table 5: Association of practices of modern contraceptive use by out of school adolescents and socio-demographic factors in East Gojjam, May, 2001 (n=452).

| Variables | Ever used modern contraceptives | | OR (95% CI) | Adjusted OR 95% CI |
|-------------------------------------|---------------------------------|-----|--------------------|--------------------|
| | Yes | No | | |
| Place of Residence | | | | |
| Urban | 80 | 64 | 1.00 | 1.00 |
| Rural | 16 | 292 | 0.04 (0.02, 0.08)* | 0.10 (0.04, 0.3)* |
| Age | | | | |
| 10-14 | 25 | 116 | 1.00 | 1.00 |
| 15-19 | 71 | 240 | 1.37 (0.8, 2.35) | 1.08 (0.4, 2.8) |
| Sex | | | | |
| Male | 2 | 34 | 1.00 | 1.00 |
| Female | 94 | 322 | 4.96 (1.13, 2.35) | 2.56 (0.49, 18.5) |
| Educational level | | | | |
| Illiterate | 2 | 18 | 1.00 | 1.00 |
| Read and write | 37 | 295 | 1.13 (0.24, 7.34) | 2.3 (0.8, 7.0) |
| Primary | 25 | 24 | 9.38 (1.7, 65.64)* | 1.6 (0.2, 11.1) |
| Secondary | 32 | 19 | 15.16 (2.86, 6.65) | 0.6 (0.2, 1.7) |
| Marital status | | | | |
| Never married | 52 | 39 | 1.00 | 1.00 |
| Ever married | 44 | 317 | 0.10 (0.06, 0.18)* | 0.9 (0.4, 2.3) |
| Income (Birr/month) | | | | |
| None | 42 | 157 | 1.00 | 1.00 |
| 3-50 | 33 | 63 | 196 (1.1, 3.49)* | 0.6 (0.16, 2.45) |
| 51-100 | 9 | 31 | 1.09 (0.44, 2.61) | 0.7 (0.19, ?) |
| 101-150 | 5 | 39 | 0.48 (0.16, 1.38) | 0.4 (0.10, 1.96) |
| 151+ | 7 | 66 | 0.40 (0.14, 0.98) | 1.2 (0.23, 6.25) |
| Living most of the time with | | | | |
| Both parents | 19 | 118 | 1.00 | 1.00 |
| Single parent family | 14 | 35 | 2.48 (1.05, 5.85)* | 1.9 (0.8, 4.4) |
| Others | 63 | 203 | 1.93 (1.07, 3.52)* | 1.9 (0.7, 4.5) |
| Father's Education | | | | |
| Illiterate | 64 | 338 | 1.00 | 1.00 |
| Literate | 32 | 18 | 9.4 (4.8, 18.7)* | 2.4 (1.1, 5.7)* |
| Mother's education | | | | |
| Illiterate | 49 | 275 | 1.00 | 1.00 |
| Literate | 47 | 81 | 3.3 (2.0, 5.4)* | 1.1 (0.5, 2.0) |

by a study done in Cameroon, Burkina Faso, Uganda, Mali, and Niger, where the proportion of adolescents ever married ranges from 44% to 59% (25). Low educational level was also reported to be related to early marriage (26). There is also a high rate of divorce in the study population which also can have a negative impact on reproductive health. A high divorce rate of 54% may be the consequence of early and forced marriages, which is common in the rural communities of Ethiopia.

Adolescents tend to be poorly informed regarding their own sexuality, physical well-being, as well as their health and their bodies (27). This study has also revealed the same. Only 8.0% of the study subjects, 80% of whom were from urban areas, knew that a woman is most likely to become pregnant half way between two periods. This is lower than that reported from Addis Ababa (23) but is comparable with the result of the Demographic and Health Survey of Ethiopia undertaken in 2000 (28).

About 92% of the respondents had reported that they have heard about HIV/AIDS. However, only 53% of the participants agreed that a healthy looking person could have HIV and 40% said that a person can get HIV the first time he or she had sex. All these indicate that in spite of the fact that the majority had reported that they had heard about the disease, only a much lower proportion of them properly understood the ways of HIV/AIDS transmission.

In order to reduce their risk behaviors, adolescents must feel personally vulnerable to contracting AIDS. In this study only 10% of the respondents believed that they are at risk of getting HIV/AIDS although more than 45% had sexual experience and 47% had more than one sexual partner. Studies elsewhere reported that the perception among adolescents that AIDS is a disease of prostitutes, foreigners and promiscuous people leads them to continue to feel that they themselves are not vulnerable (11,17). On the other hand, condom use was considered

as a sign of mistrust and promoting promiscuity by more than one third of the respondents, where boys and rural respondents dominate. Unless curbed, these attitudes may have a negative impact on efforts to prevent and control HIV/AIDS.

In this study, a higher percentage of the respondents admitted to have had sexual experiences compared to studies among adolescents attending schools in Ethiopia (21,29,30). This may indicate the need for more care for out-of-school adolescents with respect to sexual and reproductive health. On the other hand the differences in marital status between in school and out of school adolescents may at least partially explain the differences in sexual activities between the two groups, more of the out of school adolescents being married. Compared with previous reports from out of school adolescents, the rate of sexual activity among the study subjects is slightly lower (8,9,22). The difference may be attributable to differences in the study areas and the composition of the study subjects. The mean age at first sexual debut among respondents was found to be very low compared to previous studies in Ethiopia (21,30). This study also found that more rural adolescents have had sexual experiences compared with their urban counterparts even after controlling for potential confounding variables. In previous studies (9, 10,21,30) the proportion of sexually active males was persistently higher, ranging from 49% - 84% compared to that of females, 14 % - 48%. Contrary to this fact, more female adolescents, 55% of compared to 32% of the males had experienced sexual intercourse in this study. These can be attributable to rural youths' earlier involvement in adult behaviors and societal attitudes towards early marriage, which is a common practice in most sub-Saharan African countries, particularly for females (19, 31, 32). The other reason could be economic. Young, out-of-school male adolescents may be less attractive for sex relationships, while females might involve in sex to get money particularly in urban areas. This assumption has also been forwarded by another author (31). On the other hand, there may be an underreporting of sexual experiences by urban female adolescents compared to rural adolescents due to fear of social stigma attached to pre-and extra-marital sex compared to their rural counterparts who may not hide this information since more rural adolescents were exposed to marriage.

Access and health service operational problems are the major reasons that prevent adolescents from visiting health institutions. A national adolescent reproductive health workshop has also identified inadequate RH services and information for youth as one of the main problems affecting adolescent reproductive health in Ethiopia (33). In the context of this study area same sex service providers may improve health service utilization, especially for girls. This implies the need for training and

deployment of female providers for adolescent health services.

As early as 1992 studies have indicated the routes of HIV transmission from urban to rural areas (34). Interactions and movements are expected to have developed much more since then because of the construction of roads and easier access to urban centers. Such endeavors, though useful to the development of the nation, would also enhance the spread of HIV. Recent media messages from Amhara Regional Health Bureau indicated that quite a substantial number of people living with HIV/AIDS (PLWH-A), though currently living in cities had rural origins. In addition, the fifth report on HIV/AIDS in Ethiopia, based on computer models, indicated that the urban HIV epidemic plateaued at high prevalence whereas there is a gradual steady rise in HIV prevalence in rural Ethiopia (18). However, if appropriate actions are not taken the steady rise may not continue to be gradual.

RH issues surveyed in this study focused on sexual activity, attitudes towards selected sexual and reproductive health issues, knowledge and practice on HIV/AIDS and contraception. That it did not address other RH issues is a limitation of the study.

In conclusion, early and unprotected sexual activity and misconceptions about HIV/AIDS are prevalent in the study population and rural out of school adolescents are at greatest risk. In this era of the rapid spread of HIV/AIDS, and high mobility and interactions between rural and urban populations, appropriate programs to prevent HIV/AIDS and promote reproductive health should be designed for out of school adolescents urgently and rural out of school adolescents need the utmost attention. Policy level actions with long-term implications should focus on improving the level of education and raising the age at marriage through community education and law enforcement mechanisms. IEC activities and services should be accessible and organized in acceptable ways to prevent the effects of early and unprotected sexual activities and misconceptions.

References

1. Paxman JM and Zukerman RJ. Laws and policies affecting adolescent health. WHO, Geneva, Switzerland. 1989.
2. Friedman LH and Edstron GK. Adolescent reproductive health: An approach to planning health services research. WHO, Geneva, Switzerland .1983.
3. Schulenburg J, Maggs JL. and Hurrelmann K. Negotiating developmental transitions during adolescence and young adulthood: Health Risks and opportunities. In: Schulenberg J., Maggs JL and Hurrelmann K. (editors). Health risks and

- developmental transitions during adolescence. 1997;1-19 Cambridge University Press.
4. Chassin L. In: Schulenberg J, Maggs J, and Hurrelmann K (editors). Health risk and developmental transitions during adolescence. 1997, Cambridge University Press.
 5. UNAIDS /WHO. Epidemiological fact sheet on HIV/AIDS and STDs. UNAIDS/WHO working group on HIV/AIDS and STDs surveillance. Geneva, Switzerland, June 1998.
 6. WHO. Programming for adolescent health and development. Report of WHO/UNFPA/UNICEF study group on health programming for adolescents. Technical Report Series No. 886. WHO, Geneva, 1999.
 7. Hughes J and McCauley AP. Improving the fit: adolescents' needs and future programs for sexual and reproductive health in developing countries. *Studies in Fam Plann* 1998;29(2):233-245.
 8. Abate S. Determinants of high-risk sexual behavior for HIV/AIDS among out of school youth in Addis Ababa, Ethiopia. (Dissertation) Department of Community Health, Faculty of Medicine, Addis Ababa University. December 1999.
 9. Fantahun M and Chala F. Sexual behavior, and knowledge and attitude towards HIV/AIDS among out of school youth in Bahar Dar town, northwest Ethiopia. *Ethiop Med J.* 1996;34(4):233-242.
 10. Taffa N. Sexuality of out of school youth, and their knowledge and attitude about STDs and HIV/ AIDS in southern Ethiopia. *Ethiop J Health Dev.* 1998;12(1):17-22.
 11. Population Reference Bureau (PRB). Youth in the sub-Saharan Africa: A chart book on sexual experience and reproductive health. April 2001.
 12. National Committee on Traditional Practices of Ethiopia Study on the negative effects of early marriage 1995. Addis Ababa, Ethiopia.
 13. Kora A, Haile M. Sexual behavior and level of awareness on reproductive health among youths: Evidence from Harar, eastern Ethiopia. *Ethiop J Health Dev.* 1999;13(2):107-113.
 14. Fantahun M, Chala F and Loha M. Knowledge, attitude and practice of family planning among senior high school students in north Gondar. *Ethiop Med J.* 1995;33(1):21-29.
 15. Ismail S, Bitsuamlak H and Alemu K. High risk sexual behaviors for STD/ HIV, pregnancies and contraception among high school students in rural town of northwest Ethiopia. *Ethiop J Health Dev.* 1997;11(1):29-36.
 16. Tadesse E, Gudufa A and Mengistu GA. Survey of adolescent reproductive health in the city of Addis Ababa. *Ethiop J Health Dev.* 1996;10(1):35-39.
 17. UNAIDS. Report on HIV/AIDS Global Epidemic. June 2000, Geneva, Switzerland.
 18. Boyed A, Ashford L, Haub C and Corenelius D. The world's youth 2000. Population Reference Bureau.
 19. Crockeff JL. Cultural, historical, and sub cultural contexts of adolescence: Implications for health and development. In: Schulenberg J, Maggs JL and Hurrelmann K. (editors). Health risks and developmental transitions during adolescence. 1997;23-53. Cambridge University Press.
 20. Ministry of Health. Disease Prevention and Control Department. AIDS in Ethiopia. Fifth Report. 2004.
 21. Eshetu F. The attitude of students, parents, and teachers towards the promotion of condoms for adolescents in Addis Ababa (Dissertation) Department of Community Health, Faculty of Medicine, Addis Ababa University.
 22. Anastasia J G. Sexual activity and Contraceptive use: The components of the decision making process. *Studies in Fam Plann* 1998;29(2):154-166.
 23. Gebre Selassie T. Determinants of contraceptive use among urban youth in Ethiopia. *Ethiop J Hlth Dev.* 1996; 10(2):97-104.
 24. Berhane F. Health problems and service preferences of school adolescents in Addis Ababa with emphasis on reproductive health (Dissertation). Department of Community Health, Addis Ababa University. December 2000.
 25. Blanc AK and Way AA. Sexual behavior and contraceptive knowledge and use among adolescents in developing countries. *Studies in Fam plann,* 1998;29(2):106-116.
 26. Bongaarts J and Cohen B. Introduction and overview. *Studies in Fam Plann.* 1998;29(2):99-105.
 27. Shireen J Jejeebhoy. Adolescent sexual and reproductive behavior: A review of the evidence from India. *Soc Sci Med.* 1998;46(10):1275-1290.
 28. Central Statistical Authority. Demographic and Health Survey 2000. Addis Ababa, Ethiopia.
 29. Zabin S and Kiragu K. The health consequences of adolescent sexual and fertility behavior in sub-Saharan Africa. *Studies in Fam Plann.* 1998;29(2):210-232.
 30. Mengiste S. Health related problems among adolescents in Awassa Zuria woreda (Dissertation). Department of Community Health, Addis Ababa University, 1995.
 31. Regina GM, Mohamed HY, Michael M. et al. Sexual behavior and attitudes among unmarried urban youths in Guinea. *International Family Planning Perspectives.* 1998;24 (2):65-71.
 32. Makinaw-Adebusoye P. Sexual behavior, reproductive knowledge and contraceptive use among young urban Nigerians. *International Family Planning Perspective* 1992;18(2):66-70.
 33. Kidanu A and Fekade K. Creating a better future for Ethiopian youth.(Conference Report). Bahir Dar, Ethiopia. 2000.
 34. Ismail S, Larson CP. Urban to rural routes of HIV infection spread in Ethiopia. *Journal of Tropical Medicine and Hygiene.* 1995;98:338-342.