
Risky sexual behavior and associated factors among grade 9-12 students in Humera secondary school, western zone of Tigray, NW Ethiopia, 2014

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Abstract: Introduction: About 1.7 billion people which is more than a quarter of the world's population were between the ages of 10 and 24, and 86% are living in less developed countries. The World Health Organization (WHO) defines adolescent people as those between the ages of 10 to 19 years. Across the life span, adolescence is the time of greatest risk taking. Even though, adolescent risk taking can derive them to development, it more results in experiencing risky sexual behavior like contracting sexual transmitted diseases and unwanted pregnancy than disease. This age category were highly predominant in secondary schools in which government attention is very crucial. Objective: To assess, risky sexual behavior and associated factors among grade 9-12 students in Humera town, western zone of Tigray, NW Ethiopia. Methodology: Institutional based cross-sectional study was conducted. Simple random sampling technique was used to select a sample of 422 participants. A structured, pretested and self-administered questionnaire was used to collect data. Collected data was entered and analyzed using SPSS version 16. Crude and adjusted odds ratio with its confidence interval was used as measure of association and to assure statistical significance. Result: All of the respondent were included in the study. The overall prevalence of risky sexual behavior was 13.7% (95% CI: 10.6%, 16.8%) and it is predominant among the males. Factors like not living with family [AOR=3.22, 95%CI: 1.29-8.02], being male [AOR=17.17, 95%CI: 4.55-64.75], experiencing peer pressure [AOR=2.27, 95%CI: 2.79-15.89] and not participating in any religious education [AOR=6.17, 95%CI: 2.24-17.16] were the factors that increase the odds of practicing risky sexual behavior and not exposed to pornographic movie is a factor that prevent [AOR=0.36, 95%CI: 0.32-0.91] the odds of practicing risky sexual behavior among the students. Conclusion: Considerable proportion of students were engaged in risky sexual behavior. Sex, participation in religious education, living with parents, peer pressure and looking porno graphic movies were associated with risky sexual behavior. Any interventions that can affect the above risk factors may be helpful to protect adolescent's health in school.

Keywords: Risk Sexual Behavior, Cross Sectional Study, High School Student

1. Introduction

The World Health Organization (WHO) defines adolescent people as those between the ages of 10 to 19 years [1]. Today's adolescent and young adults constitute the largest cohort ever to enter the transition to adulthood. Evidence showed that nearly half of the global population were less than 25 years old and nearly 90% live in developing countries. About 1.7 billion people of the

world's population were between the ages of 10 and 24[2]. These teenagers are tomorrow's parents[3]. Adolescents are at high risk for practicing risky sexual behaviors[4]. Across the life span, adolescence is the time of greatest risk taking[5].

While sexual behavior in adolescence can be risky, it is also a natural part of human development[6]. Even though, adolescent risk taking can derive them to development, it more results in experiencing risky behavior than disease[7]. Risky sexual behavior is any behavior that increase the

probability of negative consequence associated with sexual contact like sexually transmitted disease like HIV, unplanned pregnancy and abortion which can lead them to death and disability. It also includes behaviors like having multiple partners, early sexual initiation and failure to discuss risk topics with partner and inability to use protective methods like condom [8].

Worldwide, risky behaviors related to sexual practice in adolescent people have taken much of the attention. Even though the proportion of adolescents who delay sexual onset and use condom have increased worldwide a great deal of risky sexual behavior continues[9]. Because of this, adolescents experience a large number of unplanned pregnancies and sexually transmitted disease including HIV/AIDS[10].

Report from USA showed that 46% of in school youths had ever had sexual intercourse and 34% had sexual intercourse during the previous three months. From this, thirty nine percent did not use condom last time they had sex and seventy seven percent did not use any birth control to prevent pregnancy the last time they had sex with their opposite sex. About 14% had sex with four or more people during their life[11, 12].

Current statistics on HIV/AIDS indicate that one-half of all new HIV infections worldwide occur among young people ages 15 to 24. Every minute, five young people worldwide become infected with HIV/AIDS[4]. Sub-Saharan Africa remains most severely affected with nearly 1 in every 20 adults 4.9% living with HIV and accounting for 69% of the people living with HIV worldwide[13]. Different studies also revealed that adolescents in Sub Saharan Africa were also tend to engage in having multiple sexual partner, concurrent sexual partners and unprotected sexual intercourse[14-16].

In Ethiopia comprising 30% of the population, adolescents in the age range of 15-24, represent a huge segment of potentially vulnerable population in Ethiopia and an increasing number of them are involved in unsafe sexual practices and hence face undesired health outcomes such as unplanned pregnancy, too early childbirth, unsafe abortion and sexually transmitted disease[15]. There are evidences that show that some adolescents, who are left in the care of siblings without consistent adult supervision, have increased opportunities for sexual activity[17].

Different findings in different area reports magnitude of risky sexual behavior in the range of 21.6% to 42.1% as measured by having multiple sexual experience [18-21]. Living with parents [19-26], peer pressure/influence[19, 21, 27-29], Sex[20, 26, 30], family income[31, 32], participation in religious activity[18, 33], looking pornographic movies[34, 35], substance use like alcohol, chat and different drugs[8, 18-20, 26, 31, 36], early initiation of sex[7, 30], family income[19, 35] were reported as a risk factor for practicing risky sexual behavior.

Mapping these risk factors is complicated by inconsistency among studies. Researchers in different papers define "risky sexual behavior" in different ways.

Different studies consider risky sexual behavior as a single behavior while it should be considered as a combined practice of different risky practices[37]. Such studies are limited in the country as well as in the study area. So this study is mainly intended to assess the magnitude and risk factors associated with risky sexual behavior taking combination of four practices among adolescents in grade 9 to 12 students in humera town secondary school, North West Ethiopia.

2. Methods

2.1. Study Design, Population and Period

Institutional based cross sectional study design was employed from February to April 2014 at humera town, Tigray, North West Ethiopia. Humera town is located at 1,373 kilometers away from Addis Ababa. The total number of younger population in the town is estimated to be 7,845, out of which 27% of the total population is considered as adolescent. There are two secondary schools in the town. All students registered for grade 9 – 12 in the age category of 14 -19 were included in the study. Severely ill students and students who are dropped out from the school in the mid-year were excluded.

2.2. Sample Size Determination

The sample size was calculated using a single population proportion formula by considering the proportion of risky sexual practice as 50% and 5% margin of error.

$$n = \frac{(Z\alpha/2)^2 P (1 - P)}{d^2}$$

Where:

n = Sample size required

$Z\alpha/2$ = 95 % confidence level (1.96)

P = Proportion of adolescents (0.5)

d = Desired precision (5%)

Different risk factors were considered for calculating the sample size and finally the largest sample size was considered. Considering a 10% non-response rate the final sample size was found to be 422.

2.3. Sampling Technique and Procedure

First students in the school were stratified by their grade. Currently there were 3214 students in the two schools. List of students of grade 9 to 12 was prepared and used as a sampling frame. Sample size was allocated for every strata based on proportional allocation to their size. Finally students from every class were selected by simple random sampling through computer generated numbers.

2.4. Operational Definition

Adolescents: Students who are between the ages of 14 - 19 years old.

Lifetime sexual partner: refers to the number of sexual partners a student could have till the survey.

Sexually active: Students who claimed to have engaged in sexual act at least once prior to the study.

Secondary school: according to educational cycle of Ethiopia, it included grade 9, grade10, grade11 and grade12.

Risky sexual behavior: a student is considered as practicing risky sexual behavior if he/she practice at least one of the following

- Multiple sexual partner- Having more than one sexual partner until the survey
- Early initiation of sex – sexual debut at the minimum age of 18 years old.
- Inconsistent use of condom – Incorrect use or fail to use condom at least ones during sexual intercourse until the survey
- Sex with commercial sex workers – Sexual act with commercial sex workers at least ones until the survey
- Participation in religious education- attending religious education given in religious organizations until the survey.

2.5. Data Collection and Processing

A quantitative data was collected using a standardized pre-tested self-administered interview by adopting sexual and Reproductive Health (SRH) questioner of World Health Organization to local based scenario. Questioner was originally in English and then translated to local language, Tigrigna and back to English for consistency. The questioner was used to collect data after being pre-tested in schools outside the study area. Experienced facilitators were selected and trained prior to the survey.

2.6. Data Quality Management and Analysis

Data collected from the questioner was cleaned and entered to Epi info version 3.5.1 and exported to SPSS version 16 for further analysis. Frequency, percentage, mean and standard deviation was used to data description. Tables and figures were used to present the data. Double entry was performed to assure the quality of the data. Both Bi variable and multi variable logistic regression was used to identify possible factors associated with the outcome. Adjusted odds ratio with its 95% confidence interval was used to report stastical significance. Hosmer and lemeshow goodness of fit test was used to evaluate model fitness.

2.7. Ethical Consideration

Ethical clearance was obtained from Institutional review board of University of Gondar. Permission to conduct was obtained from local government and school director. For students age less than 18 written consent was obtained from their parent through sending the letter to them at home and assent was also obtained from the students as well. All the information obtained from the respondent was anonymous and confidential.

3. Results

3.1. Socio- Demographic Characteristics of the Respondent

Table 1. socio-demographic characteristics of respondents among grade 9-12 in Humera secondary school, Tigray NW Ethiopia, May2014 (n=422)

Characteristics	Frequency	Percent (%)
Sex		
Male	253	60
Female	169	40
Age		
<18 years	267	63.3
>18 years	155	36.7
Religion		
Christian	396	93.8
Muslim	26	6.2
Participation in Religious Education		
Yes	210	49.8
No	212	50.2
Ethnic group		
Tigrai	387	91.7
Others	35	8.3
Marital status		
Unmarried	403	95.5
Married	15	3.6
Divorced	4	.9
Respondent level of Education		
9 th	182	43.1
10 th	149	35.3
11 th	50	11.8
12 th	41	9.7
Currently living with parents		
Yes	325	77
No	97	23
Family income Et Birr		
<1000	159	37.7
1000-2000	116	27.5
>2000	147	34.8
Father educational Level		
Unable to read and write	46	10.9
Able to read and write	198	46.9
Grad 4-8	93	22
Grad 9-12	60	14.2
Above 12 grad	25	5.9
Mother educational Level		
Unable to read and write	147	34.8
Able to read and write	172	40.2
Grade 4-8	75	17.8
Grade 9-12	23	5
Above 12 grade	5	1.2

All the study participants were fill the self-administrated questioner. Among the participants 253(60%) were male. The mean age of respondents was 16.89($SD \pm 1.16$). Among participants 91.7% were Tigrean in ethnicity and 396(93.8%) were Christians. One hundred eighty two (43.1%) of the study participant's level of education was grade 9. One hundred ninety four (47%) of the participants were whom their fathers had able to read and write, and 169 (40.9%) of the respondents were whom their mothers able to read and write. Three hundred twenty-five (77%) of the study participants were living with their parents (table 1).

3.2. Sexual Behavior

Table 2. -Risky sexual behavior of the study participant until the time of the survey among students in grade 9-12, humera secondary school , tigray NW Ethiopia, may 2014(N=422)

Characteristics	Frequency	Percent (%)
Risk Sexual Practice		
Yes	58	13.7
No	364	86.3
Have you ever had sexual intercourse		
Yes	92	21.8
No	330	78.2
Perceived experiencing peer pressure		
Yes	113	26.8
No	309	73.2
Have you ever seen pornographic movie		
Yes	165	39.1
No	257	60.9
Discussion with parents on sexual matters		
Yes	181	42.9
No	241	57.1
Have you ever consumed alcohol		
Yes	203	48.1
No	219	51.9
Have you ever smoke cigarette		
Yes	8	1.9
No	414	98.1
Chew chat		
Yes	36	8.5
No	386	91.5

Ninety two (21.8%) of the participants reported as they had ever sex prior to the survey. One hundred thirteen respondents reported as they had experience of peer pressure prior to the survey (Table 2).

3.3. Prevalence of Risky Sexual Behavior and Associated Risk Factors

This study revealed that the prevalence of risky sexual behavior among grade 9-12 students in humera town was

found to be 13.7% (95% CI: 10.6%, 16.8%). High proportion of males (93.1%) practice risky sexual behavior.

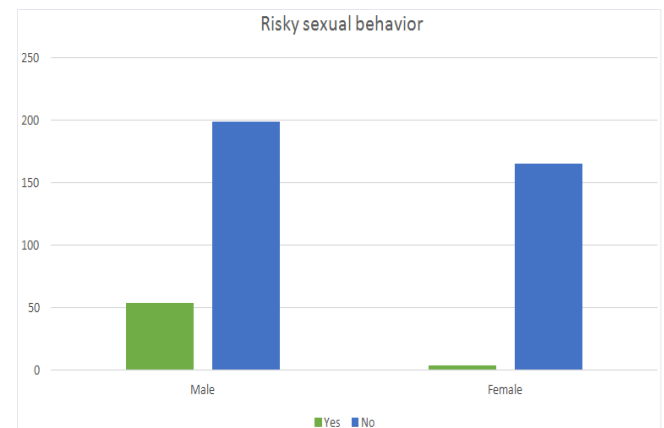


Fig 1. Prevalence of risky sexual behavior and sex variation among students of grade 9-12 in humera town secondary school, tigray NW, Ethiopia (N=422)

3.4. Factors Associated with Risky Sexual Behavior

Multivariable logistic regression analysis was done to identify the effect of independent factors after controlling other confounding variables. The overall model to predict the probability of risky sexual behavior was statistically significant ($P < 0.001$) and the overall prediction of the model was 92%. After controlling confounding effect of different variables, exposure factors like sex, participation in religious education, living with parents, having peer pressure, and saw pornographic films were significantly associated with risky sexual behavior.

Accordingly males were 17.1 [AOR=17.1, 95%CI: 4.55-64.75] times more likely to practice risky sexual behavior than females. Living with parents does have also significant association with risky sexual practice and those who were not living with their parents were found to be 3.22 [AOR=3.22, 95%CI: 1.29-8.02] times more likely to practice risky sexual behavior than those who were living with their parents.

Participation in religious education was also found to have significant association with risky sexual behavior and those who were not participate in religious education were found to be 6.17 [AOR=6.17, 95%CI: 2.24-17.16] times more likely to practice risky sexual behavior than those who were participate.

More over peer pressure was also significantly associated with risky sexual practice. Students who were report as having peer pressure were found to be 6.66 [AOR=6.66, 95%CI: 2.79-15.89] times more likely to practice risk sexual behavior than students who did not had.

The other variable which had significant association with the risk of sexual behavior was exposure to pornographic movie. Students who did not have exposure to pornographic movies were 0.36 [AOR=0.36(0.32-0.91)] times less likely to practice risky sexual behavior than those who had exposure (Table 3).

Table 3. Bi-variable and multivariable analysis of factors associated with risky sexual behavior among grade 9-12 students in Humera secondary school, Tigray ,NW Ethiopia, May2014(N=422)

Characteristics	Risky sexual practice		COR(95%CI)	AOR(95%CI)
	Yes	No		
Sex				
Male	54(34.8)	199(54.7)	1	1
Female	4(23.2)	165(45.3)	0.89(0.32-0.25)	17.17(4.55-64.75)**
Participate in religious Education				
Yes	9(15.5)	201(55.2)	1	1
No	49(84.5)	163(44.8)	6.71(3.20-14.07)	6.17(2.24-17.16)**
living with family				
Yes	34(58.6)	24(41.4)	1	1
No	291(79.9)	73(20.1)	2.81(1.57-5.04)	3.22(1.29-8.02)**
Get pocket money				
Yes	54(93.1)	249(68.4)	6.24(2.21-17.63)	
No	4(6.9)	115(31.6)	1	
Peer pressure				
No	34(58.6)	78(21.7)	1	1
Yes	24(41.4)	285(78.3)	0.19(0.11-2.35)	6.66(2.79-15.89)**
See pornographic movie				
Yes	44(75.9)	121(33.2)	1	1
No	14(24.1)	243(66.8)	0.16(0.12-0.84)	0.36(0.32-0.91)**
Discussion with parents				
Yes	12(20.7)	169(46.4)	1	
No	46(79.3)	195(53.6)	3.32(1.70-6.48)	
Have you ever drink alcohol				
Yes	43(74.1)	160(44)	3.66(1.96-6.82)	
No	15(25.9)	204(56)	1	
Smoking cigarette				
Yes	4(6.3)	4(1.1)	6.68(1.62-27.45)	
No	54(93.1)	360(98.9)	1	
Chat chewing				
Yes	22(37.9)	14(3.8)	15.28(7.18-32.43)	
No	36(62.1)	350(96.2)	1	

** Significant at p-value < 0.05

4. Discussion

This study provides insight in to the prevalence and risk factors associated with risky sexual behavior using composite practices among grade 9-12 students in humera town.

The finding of this study showed that 13.7% (95% CI: 10.6%, 16.8%) of the students have had practice risky sexual behavior prior to the survey. This prevalence is lower than studies conducted elsewhere [18-21]. This difference might be due to the approaches taken to quantify risky sexual behavior. This study tried to consider four different risky practices to measure the students over all risky sexual behavior while the other studies only contemplate single factor.

Student's sex is significantly associated with risky sexual behavior. In this study male students have the higher odds of practicing risky sexual behavior as compared to female students. This result is supported by different study conducted in Ethiopia [20, 26, 30].

Participation in religious education is protective factor for risky sexual behavior. In this study students who did not participate in any religious education were at higher odds of practicing risky sexual behavior. This result is consistent with both qualitative and quantitative findings in different area[18, 33]. Study of youth's age in USA found that attending religious services identified "moral, values and religious beliefs" as the factor that most affect their decision to practice risky sexual behaviors. Here the degree of participation may vary by the frequency and other factors.

Significant number (77%) of students reported as they were lived with their parents. This study was tried to explore the relationship of living with family and the degree of practicing risky sexual behavior and found significant association. This is also in line with study conducted before [19-26]. This can be explained by parent adolescent close supervision can help in avoidance or lower practice of risky sexual behavior and other factors that can lead to risky sexual behavior.

This study further declared that students who have report as having peer pressure were more than 6 times at higher

odds of practicing risky sexual behavior as compared to who did not had. This is similar with other studies before [19, 21, 27-29]. This might be due to the fact that adolescents are at higher probability of sharing their day to day life experience and they take majority of their time with their friends especially in students those were not live with their families.

More over this study was also revealed that exposure to pornographic movie put the students at higher risk of practicing risky sexual behavior. Those students who report their exposure to pornographic movie were 2.77 times more likely to undertake risky sexual behavior and this is supported by different studies conducted before[34, 35].

The strength of this study is its application of composite risky behaviors together to measure student's risky sexual behavior. This can clearly indicate the burden of this misbehavior among sexually active students at this school. Additionally even though it was tried to minimize social desirability bias through administration of self-administered questioner, still because of sensitive nature of the problem, the possibility of underestimation cannot be ruled out.

5. Conclusion and Recommendation

This study has shown that a considerable proportion of students were engaged in risky sexual behavior. Factors like not living with family, exposed to pornographic movies, being male, experiencing peer pressure and not participating in any religious education were the factors that increase the odds of practicing risky sexual behavior among the students. Any interventions that can affect the above risk factors may be helpful to protect adolescent's health in school.

Competing Interest

Authors declare that they have no competing interest.

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