



Predictors of Risky Sex Behavior among Adolescents in a Traditional Indian Society: Implications for Program Intervention Strategies

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Abstract

Objective: The purpose of the study was to assess the risk behavior and its effect on involvement in sex among school-going adolescents as a part of assessing implementation of Adolescent Reproductive and Sexual Health Scheme (ARSH) in a state of India.

Methods: The sample covered 3069 randomly selected adolescents (students) from 9th to 12th standard in various government, private and missionary-run schools from two districts, namely, Aizawl and Champhai in the state of Mizoram.

Results: It was found that more than one-third of adolescents (37%) accepted taking alcohol and 72% of adolescents accepted seeing pornographic movies. Nearly 23% respondents were aware about premarital pregnancy among friends and 7.5% were aware about complication due to unsafe abortion among them. About 10% accepted involvement in premarital sex and majority of them (70%) had premarital sex between age group 15 and 19 years and 54% never used condom. Influence of peer group who were taking alcohol, tobacco and drug and exposure to erotic materials was found to be the major risk factors for indulgence in unsafe sex practices among adolescents.

Conclusion: Better awareness and counseling against tobacco, alcohol and drug abuse, and pornographic literature among adolescents is needed through school health education.

Keywords: Contraception, Alcohol, Drug and tobacco use, Pornographic literature, Premarital sex, STDs

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How to cite this article: Tiwari VK, Raj STP, Piang LLK et al. Predictors of Risky Sex Behavior among Adolescents in a Traditional Indian Society: Implications for Program Intervention Strategies. *Ind J Youth Adol Health* 2017; 4(1): 36-45.

Digital Object Identifier (DOI): <https://doi.org/10.24321/2349.2880.201706>

ISSN: 2349-2880

Introduction

The term *adolescent* refers to individuals between the ages of 10 to 19 years. The overwhelming problems adolescents may face are pregnancy, high school drop-out rates, substance abuse, violence, etc., making them more vulnerable to life-threatening diseases and conditions. For many adolescents, although sexual activity may be infrequent, relationships are often temporary and multiple sexual partners are possible and contraception is either not used at all, or its use is irregular or incorrect. One of the serious risks faced by adolescents is teenage pregnancy. The dramatic fall in the average age of menarche during the last century may be one of the reasons for the recent rise in the teen pregnancy.¹ Adolescents are estimated to account for 14% of all unsafe abortions, performed by people who lack the necessary skills in an environment lacking minimal medical standards.²

Studies on sexual behavior among adolescents are fundamental in understanding and fighting against outcomes of unprotected sex that include unplanned/unwanted pregnancies and sexually transmitted diseases. Risky sexual behavior is defined as inconsistent condom use and having multiple sexual partners. Guided by a theoretical model, this study assessed factors associated with risky sexual behavior in a sample of school-going adolescents in Mizoram state in India. The basic premise is that risky sex behavior among adolescents is through the culmination of a host of other deviant behaviors and it does not develop in isolation.

Previous studies conducted in the United States of America identified several psychosocial factors associated with adolescents engaging in risky sexual behavior.³ African-American female adolescents who report high levels of depression and hopelessness are more likely to engage in early sexual activity, more likely to engage in unprotected sex, and more likely to become pregnant.⁴ In addition, behavioral problems, such as conduct disorder and delinquency, have been found to highly correlate with risky sexual behavior in African-American adolescents.⁵ Further, African-American girls who report using substances also tend to report engaging in risky sexual behavior.⁶ African-American adolescents who report having more social support are less likely to engage in risky sexual behavior.⁷ In addition, African-American youths who report having peers who engage in fewer risky sexual behaviors also report engaging in fewer risky sexual behaviors themselves.⁸ A few researchers have used

risk and protective models to explore factors contributing to health-compromising behaviors in teens.⁹

Studies mostly conducted in USA and the West identified possible risk and protective factors for teens engaging in high-risk sexual behavior; however, such studies are lacking in Indian adolescent population. This study builds on the existing literature by applying a theoretical model that includes both risk and protective factors in explaining risky sexual behavior among school-going adolescents borrowed from¹⁰ (see Fig. 1).

The purpose of this article is to investigate the relations between potential risk factors (e.g., outings, partying, reading erotic literature, living away from parents, working part-time, use of tobacco, alcohol, substance use and bad peer influence) and risky sexual behavior in a sample of school-going adolescents. In addition, this study sought to determine whether social/environmental factors (e.g., living with parents, peer norms) or knowledge and skill factors (e.g., knowledge of HIV, reproductive and sexual health facts including Contraception, etc., and exposure to Adolescent Reproductive and Sexual Health (ARSH) program played a protective role in moderating the relationships between these risk factors and adolescent's risky sexual behavior.

It is hypothesized that adolescents who reported more partying/picnic and outings with friends, staying away from parents, have freedom to spend more money due to part time income, teens get exposure to erotic/pornographic literature, and teens who reported higher levels of tobacco, alcohol and substance use would report engaging in more risky sexual behavior. We also predicted that teens who reported having higher levels of social support and who reported that their peers were engaging in fewer risky behaviors would report engaging in less risky sexual behavior. Furthermore, we hypothesized that teens with exposure to safe sex education would report engaging in fewer risky behaviors. In addition, it is also hypothesized that social/environmental factors (social support, peer norms) would serve as protective factors by moderating the relationship between each of the risk factors (exposure to erotic literature, tobacco, alcohol, substance use, etc.) and risky sexual behavior. Finally, we hypothesized that knowledge factor (reproductive and sexual health including contraception and HIV/AIDS) and access to ARSH clinic would also moderate the relationship between risk factors and risky sexual behavior.

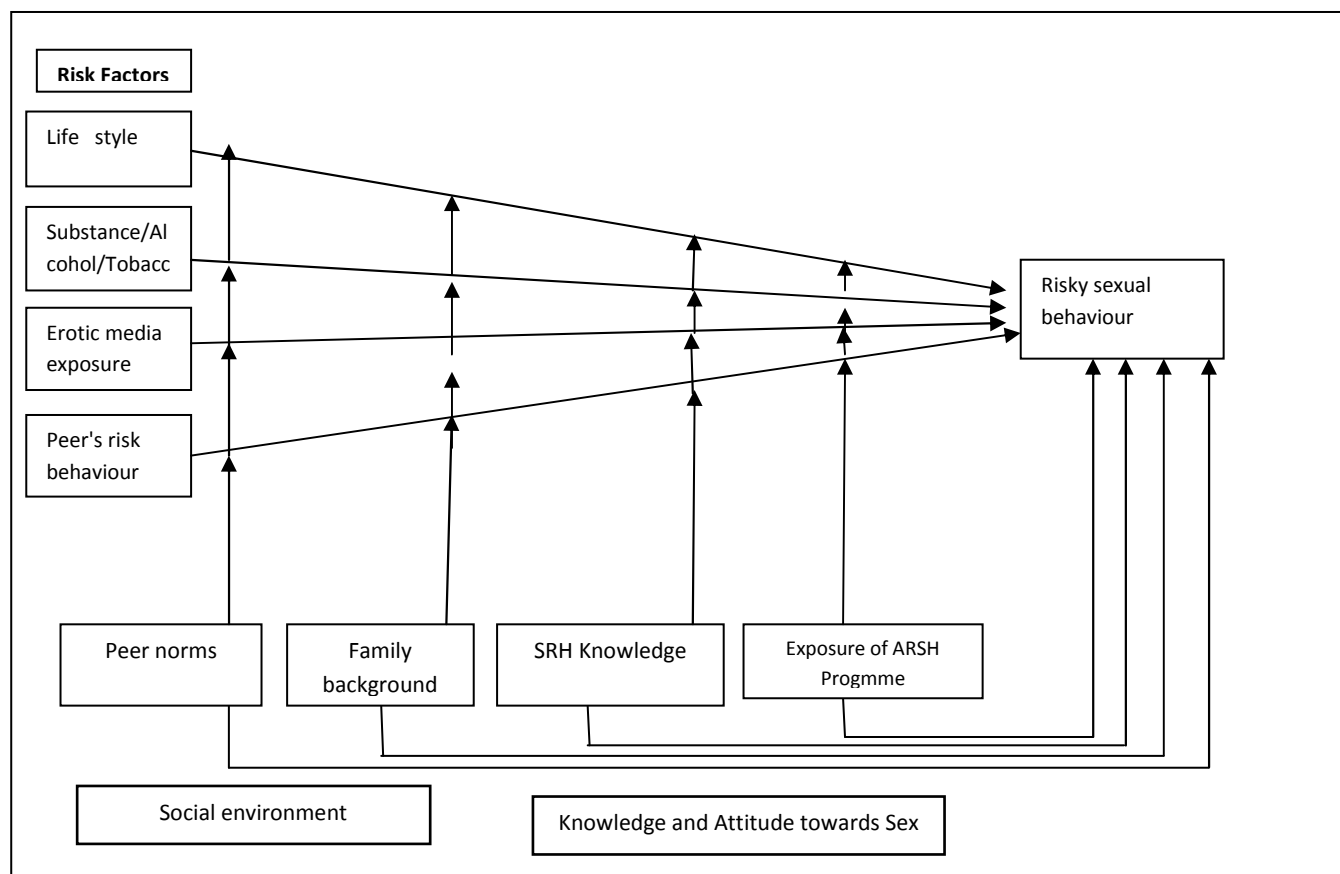


Figure 1. Risk and Protective Model for Explaining Risky Sex Behavior

Recent studies documented a dramatic increase in the frequency of sexual activity among teenagers as well as decrease in the age at which sexual activity begins. More than 15 million of the population below 20 years of age becomes mothers each year.¹¹ Adolescents are at high risk of STIs and HIV/AIDS, particularly migrants, street children, and unemployed. 25% of the patients attending government STI clinics are younger than 18 years old increasing vulnerability to HIV/AIDS. Over 50% of all new cases in India are among 10 to 24 years of age. Over 35 per cent of all reported HIV infections in India occur among young people in the age group of 15–24 years, indicating that young people are highly vulnerable.¹²

In India, ample studies on adolescent and youth sexuality were conducted. A study conducted in two cities of India, Lucknow and Delhi, among unmarried youths (15–24 years) found that 26.3% males and 5.8% females in Delhi and 34.4% males and 8.1% females in Lucknow had pre-marital sex. The age at first sexual encounter was 15 years or less in 23.7% males and 21.9% females in Delhi as compared to 18.3% males and 3.1% females in Lucknow. The 42.1% males and 62.5% females in Delhi and 47.5% males

and 25% females in Lucknow never used condom. The knowledge about contraception, STDs and symptoms of pregnancy was lacking.¹³

In a national study conducted by IIPS, the rate of premarital sex has been reported to be 17% among young females and 33% among young workers in the typical north Indian population respondents. The average age for first sexual encounter in India is 17.4 years for boys and 18.2 years for girls. However, majority of adolescents lack awareness about the consequences of unsafe sexual encounters. Most of them resort to quacks or untrained doctors for abortion when they get pregnant, leading to unnecessary morbidity and mortality.¹⁴

It was found during literature review that studies linking over all deviant behavior with risky sex behavior among adolescents are hardly available; therefore, the present article was attempted. Data used in this article were obtained from a study on 'Implementation of Adolescent Reproductive and Sexual Health (ARSH) Scheme¹⁵ in State of Mizoram'. We made an attempt to analyze factors affecting sex behavior among adolescents in the present article.

Materials and Methods

The present study was conducted among male and female school-going adolescents of 9th to 12th classes, studying in randomly selected government, private and missionary schools from Aizawl and Champhai districts, where ARSH program was initially implemented. These two districts were predominantly hilly; therefore, most of the Schools were located in district headquarters, and students from rural areas usually study there and reside in student dormitories in schools.

Initially, we wrote to all government, private and missionary-owned schools in both the cities of Aizawl and Champhai for participation in the study. However, out of total listed 17 schools, permission was received from 14 schools in (7 private schools, 4 government schools and 2 missionary-run schools) in Aizawl City; from Champhai city out of 12 listed schools, 10 schools (5 government and 5 private schools) were selected. From each school, students from 9th to 12th class from the randomly selected sections were invited for participation in the study. In view of non-response and incomplete filled questionnaires after scrutiny, finally 2161 students from Aizawl and 908 students from Champhai were included in the study. Thus total student sample was 3069 in the study.

After selecting schools, sections in each class were randomly selected. A total sample of 3069 students – 2161 from the state capital city of Aizawl and 908 from the distant but smaller city Champhai, where ARSH program was initially implemented, were included in the study. The study was conducted during the month of August, 2012.

Data was analyzed with SPSS version 21 available in the Computer Center of the Institute. Statistical tables were generated and Chi-square tests were also applied. Logistic regression analysis was used to quantify risk due to deviant behavior among adolescents. The study was approved by the Program Advisory Committee (PAC) of the Institute, taking into account ethical and methodological considerations.

Results

Socioeconomic and Demographic Profile of Adolescents

In the study sample, girls' proportion was more (52%) than boys (48%) in both the districts. Higher percentages (62%) were coming from urban areas as compared to rural areas (38%). The students were

predominantly from Christian religion (97%). One-fourth of parents had income of Rs 5000–10,000 per month, i.e., approximately USD 100–200 per month.

Life Style and Media Exposure among Adolescents

Majority of adolescents responded to spending their leisure time in listening music (68%) and watching movies (60%) followed by hanging out (42%), sports (35%) and least (33%) were involved in reading novels, magazines, etc. More than half of them (57%) responded to use of alcohol, 6.5% puffing, 5.7% drugs and 9.8% other intoxicants. Very high percentage (72%) of adolescents accepted viewing pornographic movies/videos. Data reveals that media used of pornographic movies/videos by majority was internet and mobile (75%), followed by CD/DVD/Video (33%), TV (26%) and magazines (7.5%), and other sources (5%). On further probing, it was found that majority of adolescents (44%) were watching pornographic movies/videos alone followed by within group of boys only (25%), within group of girls only (20%), mix of boys and girls (6.6%), with exclusively boyfriend/girlfriend (3.2%).

Consumption of Tobacco, Alcohol and Drugs among Adolescents

It was found that more than half of the students (53.4%) were consuming tobacco in one form or another and 47% of them were taking it every day and more than one-third (37%) were taking alcohol; about 16% were taking more than once in a week and about 2% were taking every day. Major reason for taking alcohol/drug was found to be friend's influence.

About 13% adolescents were taking some or other type of intoxicants like SP, Relipen, Phensidly, Corex, Digezum, Correction fluid, etc., and (3.3%) were also taking various types of banned psychotropic substances like drugs – brown sugar, cocaine, heroin, etc. Major reasons reported were fun (69%) and friend's influence (34%). The pattern of drug use among friends also shows that about half of them were taking it orally (49%) followed by puff (13%), others (12.5%) and injectables (9%). Major reasons informed by students for habit of drug among friends were for fun (53%), and friends taking drug (19%).

Premarital Sex among Adolescents

Findings revealed that 13% adolescents opined that premarital sex is acceptable, if both the partners are committed for long-term relationship. About 10% adolescents accepted entering into premarital sex

relationship. More adolescents (13%) were involved in premarital sex in Champhai than Aizawl (9%). The mean age of sexual intercourse was around 16.16 years; about 80% of them had sex sometimes, about 10% indulged once/twice a week.

Association of Risk Behavior and Erotic Media Exposure with Adolescent Sex

In this article, efforts were made to examine association between involvement in sexual activities

and adolescent’s behavior of partying/picnic, taking alcohol and drugs and frequency, watching porn movies, etc. Table 1 describes that overall involvement in sex was 9.8%. However, almost double percentage (13%) of adolescents who spent their leisure time in partying/picnic where alcohol and drugs are served, was involved in sexual activity compared to those who did not participate (6%) in partying.

Table 1. Association between Partying/Picnic, Consumption of Alcohol, Drug, etc., in Party and Adolescent Sex Involvement in Sexual Act among Adolescents

	Yes	No	No Response	Total
Overall	302	2729	38	3069
	9.8%	88.9%	1.2%	100.0%
Party/Picnic	234	1603	23	1860
	12.6%	86.2%	1.2%	100.0%
Taking Alcohol	173	782	11	966
	17.9%	81.0%	1.1%	56.8%
Puffing of Drugs	29	81	0	110
	26.4%	73.6%	0.0%	100.0%
Taking Drugs	32	64	1	97
	32.9%	65.9%	1.2%	100.0%
Other Intoxication	36	128	2	166
	21.7%	77.1%	1.2%	100.0%
P<.05				

It is found that the percentage of involvement in sex starts increasing from use of alcohol (18%) to puffing (26%), other intoxicants (22%) and reached highest level for those who took drugs (33%) in the party. This association was statistically significant. However, it appears that the way adolescents spent time also affects their involvement in sex. More adolescents, who spent time in outdoor activities like hanging out (14.3%), sports (16.7%), were involved in sex. However, adolescents, who spent their leisure time in indoor activities like listening music (12%), reading novels and magazines (8.8%), watching movies (11.3%), were less involved in sexual activities. The exposure to pornographic movies indicates that almost double the percentage of adolescents (12%), who were exposed to pornographic literature, indulged in sex act compared to those who did not see pornographic movies (5%). Higher percentage of adolescents seeing pornographic movies with their

boy/girl friend were involved in sex (31%) compared to other combination of partners. Those who did not respond to this query also reported high percentage (21%) of indulgence in sex. Those who were involved in sex, internet/mobile is used by highest number of adolescents (77%) as media, followed by CD/DVD/Video (44%), TV (37%), magazine (11%) and other sources (7%). The effect of consuming tobacco products and alcohol on sex behavior is studied in Table 2.

It is found that almost three times more (14%) adolescents who were taking tobacco products were involved in sex activity compared to those who did not take (5%). Findings indicate that more than three times (17%) adolescents were involved in sex, who consumed alcohol compared to who did not take (5%). As frequency of consumption increases, proportion of adolescent involved in sex also increases which is statistically significant.

Table 2. Association between Tobacco Consumption and Alcohol on Adolescent Involvement in Sex Involvement in Sexual Act among Adolescents

Involvement in Sexual Act among Adolescents				
	Yes	No	No response	Total
Overall	302	2729	38	3069
	9.8%	88.9%	1.2%	100.0%
Taking Tobacco Products	228	1402	19	1649
	13.8%	85.0%	1.2%	100.0%
P<05				
Frequency of Tobacco Consumption	Involvement in Sexual Act among Adolescents			
	Yes	No	No Response	Total
Not at All	17	181	1	199
	8.8%	90.9%	0.6%	100.0%
Once in a Week	23	236	3	262
	8.8%	90.1%	1.1%	100.0%
Twice in a Week	15	126	3	144
	10.4%	87.5%	2.1%	100.0%
More than Once a Week	29	184	2	215
	13.5%	85.6%	0.9%	100.0%
Everyday	136	631	6	773
	17.6%	81.6%	0.8%	100.0%
P<.05				
Involvement in Sexual Act among Adolescents				
	Yes	No	No Response	Total
Overall	302	2729	38	3069
	9.8%	88.9%	1.2%	100.0%
Taking Alcohol	198	929	11	1138
	17.4%	81.6%	1.0%	100.0%
P<05				
Frequency of Alcohol Consumption	Involvement in Sexual Act among Adolescents			
Once in a Week	68	228	2	298
	22.8%	76.5%	0.7%	100.0%
Twice in a Week	15	47	1	63
	23.8%	74.6%	1.9%	100.0%
More than Once a Week	30	83	0	113
	26.5%	73.5%	0.0%	100.0%
Everyday	14	10	0	24
	58.3%	41.7%	0.0%	100.0%
P<.05				

Association between habit of taking drugs like – SP Relipen, Phensidly, etc., with indulgence in sex is further examined. It was found that more than two times adolescents (21%) were involved in sex, who were taking drugs like – SP Relipen, Phensidly compared to non-takers (8%). However, indulgence in sex was almost three times higher (30%) among those who were taking drugs like – brown sugar, cocaine, heroin, etc. Further, involvement in sex was more among those adolescents who took drugs due to friends taking drugs (69%) and was lesser among those who took drugs because of break-up with boy/girlfriend (18%), stress due to studies (10%), or parents separated (5.6%). So, the data shows that

even among the group of drug takers, more were involved in sex under peer influence among drug users. It is found that adolescent sexuality was significantly associated and was higher (13%) among those whose friends were taking alcohol and drugs. The involvement increases steadily among oral drug takers (10%) to using puffs (21%) to ingestible drug users (IDUs) (29%).

Logistic Regression Analysis

In order to analyze the odds of indulgence in sex among adolescents with respect to certain deviant behavior, the logistic regression technique was also

applied. It is found that odds of indulgence in sex among party/picnic goers was higher (1.084 p=.823) than non-partying adolescents. Adolescents who did not spend their leisure time in music were having 1.4 times higher odds (p=.08) compared to those who spent time in music. Similarly, adolescents who spent their time in reading novels were having higher odds (1.098, p=.637) may be due to erotic nature of novels. Higher odds were found among those who admitted

that in the party/picnic alcohol (1.522, p=.045), drugs (1.901, p=.059) and puffs (1.240, p=.516), etc., are served having higher (1.2 to 1.9) odds of indulgence in sex, which was statistically significant also.

It was further analyzed that there were higher odds of indulgence in sex among those who take tobacco, take alcohol and take drugs. The odds increases as frequency of consumption increases to every day.

Table 3. Logistic Regression Estimates of Odds Ratios and Significance Levels of the Corresponding Regression Coefficients for Adolescent’s Life Style and Involvement in Sex

Determinants of Involvement in Sex	Variables	Sig	Exp (B)
Ever Watch Pornographic Movies	No	0.594	0.540
	Yes®		
Taking Tobacco Products like Cigarette, Pan, Gutka, etc.	Yes	0.005	4.454**
	No®		
Frequency of Tobacco Taking	Once in a week	0.475	0.725*
	Twice in a week	0.893	0.934
	More than once a week	0.768	1.138
	Everyday	0.775	1.113
	Not at All®	0.308	
Taking alcohol by adolescents	No	0.353	0.643
	Yes®		
Frequency of Taking Alcohol by Adolescents during Last 4 Weeks	Once in a week	0.356	1.269
	Twice in a week	0.337	1.488
	More than once a week	0.671	1.152
	Everyday	0.011	5.717
	NA	0.345	.633
	Not at All®	0.111	
Adolescents Taking Drugs Like SP Relipen, Phensidly, Corex, Digepum, Correction Fluid, etc.	Yes	0.036	1.582
	No®		
Adolescents Taking Drugs Like Brown Sugar, Cocaine, Heroin	Yes	0.892	1.047
	No®		

Discussion

This study assessed risky sexual behavior and associated risk and protective factors in a sample of school-going adolescents from two cities in hilly and low-income, but highly educated community settings. Adolescents in this sample reported unprotected sexual encounters sometimes with multiple partners. Similarly, seeing erotic literature, use of tobacco, alcohol, and substance abuse were reported, and these were significant predictors of adolescents’ risky sexual behavior. Adolescents who reported having peers who engaged in fewer risky sexual behaviors also reported engaging in fewer risky behaviors. However, knowledge about reproductive and sexual health facts and awareness under school health program were moderating the relations between risk factors and adolescents’ risky sexual behavior in this sample.

In the study, bad peer influence, lack of healthy entertainment, influence of porn movies (12%), addiction of alcohol (58.3%), drugs (33%), tobacco (17.6%), etc., were found to be influencing adolescent risky sex behavior. A study was carried out among the adolescents in Karnataka, which also got similar kind of results.¹⁶ The easy availability of internet in mobile was found to be widely misused (79%) by adolescents for viewing porn clips/movies. Use of drugs among adolescents may be due to porous international border of the state with Myanmar. Drug trafficking across the common border of Myanmar and three North-Eastern States (Mizoram, Manipur and Nagaland) occurs with ease. Despite the existence of heavy security, Heroine does transit the border and is, therefore, accessible to local youths of these states.¹⁷ The Golden Triangle region of South-East Asia has been a major center of opium poppy cultivation since 19th century.¹⁸

Our findings that peer norms predicted teens engaging in risky sexual behavior are consistent with previous studies that have reported that African-American youths who report that their peers engage in high-risk behaviors also report engaging in risky sexual behaviors.⁸ This pattern is fairly consistent with the theory of problem behavior, which suggests that problem behaviors such as alcohol use, marijuana use, delinquency, and precocious sexual activity tend to be associated with each other in teens.¹⁹

Further, Mizoram being low-income, remote and hilly area, with more openness in society due to Westernization, early sexual activity may be more normative, especially when teens perceive their peers engaging in sexual activity, and may not be indicative of other problem behaviors.

Similar kinds of conclusions are drawn in the studies conducted in western countries, including USA and Canada. A study found that easy availability of pornographic material on mobile phones had contributed to impaired academic performance, body dissatisfaction, eating disorders, low self-esteem, depression, and even physical health problems in high-school-aged girls and in young women.²⁰ Another study reported that higher school attendance and knowledge of AIDS were associated with both lower levels of sexual activity and consistent use of condoms, but engaging in higher-risk social activities with close friends was a risk factor for both. Experimentation with tobacco, alcohol and drugs during adolescence has negative consequences, including emotional problem, school-related problems, family related problems, social problems, unsafe sex, and tendency of suicide.²¹ Adolescents under the age of 14 who reported intentional exposure to pornography, irrespective of source, are significantly more likely to report delinquent behavior and substance use in the previous year.²² Sexual behavior under the influence of substances such as alcohol, cocaine, etc., increases risk of STIs and unplanned pregnancy.²³ A study conducted in Massachusetts among 16-19-year-olds found that teens who averaged five or more drinks daily or used marijuana in the previous month were 2.8 and 1.9 times, respectively, less likely to use condoms raising further risk to them. Among respondents who drink and use drugs, 16 percent used condoms less often after drinking and 25 percent after drug use.²⁴

This study has several limitations that should be acknowledged. Although this study includes school-going sample of adolescents, but we do not have an out-of-school sample of adolescents and adolescents

staying in rural areas. Consequently, we were unable to assess whether the sexual practices and predictors of risky behavior found in this study are representative of adolescents from different ethnic and other socioeconomic backgrounds. Therefore, the sample may be biased in terms of including more adolescents who are more or less sexually active than a sample of adolescents from a community setting. However, due to almost universal literacy in Mizoram state, very less proportion of adolescents are out of school; therefore, this sample offers important data on adolescents in general but specifically who are school-going and who are likely representative of other urban populations of adolescents. Similarly, we relied on adolescents' self-report for the data. Adolescents may have underreported some behaviors that are illegal (e.g., substance use) or sexual behaviors that they were uncomfortable with while answering in the self-reported tool.

Finally, there are many factors this study did not assess, including family influences, community influences (e.g., neighborhood violence), and interpersonal influences (e.g., spirituality, religious affiliation), etc. Future research may attempt to add these factors into a risk and protective model explaining risky sexual behavior among adolescents.

Conclusion

The addictions due to tobacco, alcohol, drugs, exposure to erotic material and influence of peers were major risk factors for indulgence of unsafe sex among adolescents. The need is to make adolescents aware about *risk and consequences*. Therefore, risk reduction strategies should be introduced in the school health program as well as government run ARSH program. The need for interdisciplinary model of adolescent care in school settings is clearly established, and prevention-oriented interventions aimed at reducing risky behavior and preventing the development of more significant health, mental health, or tobacco, alcohol and substance abuse disorders are needed. Government must ensure supportive services in terms of counseling and RH services through better implementation of Adolescent Reproductive and Sexual Health (ARSH) Program in school environment.

Recommendations

Government need to create facilities of sports, physical activity, cultural activity, healthy recreation, etc., to divert adolescents' attention to healthy habits. Female adolescents in general should be counseled

within schools to resist peer pressure for sex at early age. The schools may educate adolescents about serious psychological, physical and social consequences of sex during adolescence.

In view of direct association of consuming tobacco products, alcohol, and drugs with adolescent sex behavior, government needs to create tougher laws for those who sell tobacco, alcohol, and drugs to adolescents and should restrict access to porn material among adolescents. The warning signs of teenage alcohol and drug use should follow a comprehensive evaluation by a child and adolescent psychiatrist under ARSH program.

Acknowledgments

Authors are grateful to officials of State Education and Health Department for extending their full support during collection of data in a hilly, remote and extremely difficult terrain.

Source of Funding

No external funding was provided to prepare this article.

Disclaimer

Points of view or opinions in this document are those of the author(s) and do not necessarily represent the official position or policies of GOI.

Conflict of Interest: Nil

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Date of Submission: 10th Apr. 2017

Date of Acceptance: 10th Apr. 2017