Original Article

Correlates of Social, Demographic and Behavioral Factors affecting Adolescent Sexuality in a Traditional Society in India: Perspectives and Challenges

Vijay Kumar Tiwari[*], *L Lam Khan Piang*[**], *Sherin Raj T P*[***], *Kesavan Sreekantan Nair*[****]

Abstract

Background: Adolescent risk behavior is a major concern.

Objectives: The study assessed the effect of school background, personal, social and other deviant behavior on school going adolescent sexual behavior.

Material and Methods: The sample covered 3069 randomly selected adolescents (students) from 9th to 12th standard in various governments, private and missionary run schools from two districts namely; Aizawl being state capital and Champhai being distant under developed district.

Summary: School background, leisure and entertainment practices, influence of taking alcohol, tobacco, drug, peer influence were found to be the major risk factor for indulgence in unsafe sex practices among adolescents. About 10% accepted involvement in premarital sex and majority of them (70%) of them had premarital sex between age group 15-19 years. The schools lacked in organizing awareness program and counseling activities on consequences of adolescent sex. The ARSH Program needs to synergize with school health program for desired results.

Conclusions: Adolescent sexual risk behavior is a part of overall deviant behavior and can be managed in holistic manner.

Keywords: ARSH, Adolescent sex, Co-education, Drug use, Leisure activity, Pornographic literature, Premarital sex, STDs.

Introduction

The term "adolescent" refers to individuals between the ages of 10 to 19 years. The period of transition from childhood to adulthood is sometimes hazardous for the adolescent health. The overwhelming problems adolescents may face are pregnancy, high school drop-out rates, substance abuse and violence etc making them more vulnerable to life-threatening disease 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 an adolescent is teen age 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]

The Adolescent Reproductive and Sexual Health (ARSH) program[3] is a key strategy (which is now realigned as the Rashtriya Kishor Swasthya Karyakram[4]) which incorporates a core package of services including preventive, promotive, curative and counseling services. A study on Adolescent Friendly Health Clinic (AFHC)

[*]Professor, Department of Planning and Evaluation, National Institute of Health and Family Welfare, New Delhi, India.
[**]Assistant Professor, CSSS, Jawahar Lal Nehru University, New Delhi, India.
[***]Assistant Research Officer, Department of Planning and Evaluation, National Institute of Health and Family Welfare, New Delhi, India.
[****]Former Faculty, National Institute of Health and Family Welfare, New Delhi, India.
Correspondence to: Dr Vijay Kumar Tiwari, Department of Planning and Evaluation, National Institute of Health and Family Welfare, New Delhi, India. ***E-mail Id:*** vktiwari.nihfw@gmail.com

established under the ARSH strategy conducted by the Population Council in Jharkhand, Maharashtra and Rajasthan found that 5% of young men and 8% of young women even within 5-10 kms vicinity were aware of AFHCs and less than 1 percent young men and women ever sought services from the AFHCs. However, no systematic evaluation of ARSH program per say is available.[5]

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. 42.1% males and 62.5% females in Delhi and 47.5% males and 25% females in Lucknow never used condoms. The knowledge about contraception, STDs and symptoms of pregnancy was lacking.[6]

In a national study conducted by International Institute of Population Sciences, 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.[7]

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.[8]

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. More than 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.[9]

One study on knowledge and awareness about EC Pills conducted among 1,017 college students in Chandigarh found that only 7.3% had knowledge about emergency contraceptive pills (ECP). Of them, 14.7% students knew the correct time for use of ECP, and the side effects of ECP were known to 48(88.9%) respondents.[10]

The present article is prepared using part data collected under the study on 'Implementation of Adolescent Reproductive and Sexual Health (ARSH)[11] Scheme in State of Mizoram' and attempted to assess the reach and effectiveness of ARSH program among school going adolescents.

Materials and Methods

The present study was conducted among male and female adolescent school going children of 9th to 12th classes falling in the age group of 10-19 years, studying in randomly selected government, private and Missionary schools. 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 Champhai district which is less developed and distant place where ARSH program was initially implemented, were included in the study. The study was conducted during the month of August, 2012. The present analysis of adolescent sexuality is from the perspectives of socio, economic, cultural and behavioral dimensions covered in the study.

Data collected was analyzed with SPSS in the computer center of the Institute. Issues such as social and schooling background, spending leisure time, habit of consuming drug, alcohol, peer influence, effect of electronic and print media, attitude regarding adolescent sexuality and sexual behavior of peers etc have been explored by generating 2x2 Tables and applying Chi-square test to find out significance of association. Based upon findings, logistic regression analysis is also done to identify predicting factors for indulgence in adolescent sexuality. The study was approved by the Program Advisory Committee (PAC) of Institute taking into account ethical and methodological considerations.

Results

Socio-Economic and Demographic Profile of Adolescents

In the study, sample girls were more (52%) than boys (48%). Higher percentages (62%) were coming from urban areas as compared to rural areas (38%). Majority of students (63%) were from nuclear family, followed by joint family (30%) and rest (7%) were from extended family. Nearly one fifth of adolescents (18%) were living with single parent. Economic conditions seem to be poor as one quarter of parents were living in the income of Rs 5000-10,000 (per month).

About 6% adolescents reported working part time may be due to economic condition of family. It was found that for

ISSN: 2349–2880

majority of such adolescents, part-time income was Rs 1000/-per month. The sample was skewed in favor of Senior Secondary students (73%) compared to Higher Secondary (27%). More than half (56%) were from 'Arts stream', 17% were from 'Sciences stream' and the rest (27%) were from 'Common stream' (9^{th} and 10^{th} classes). Majority were studying in government school (45%) followed by Private schools (40%) and rest (15%) were studying in Missionary schools. Almost all students (98.5%) were studying in co-ed schools.

Life Style and Select 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 and magazines etc. More than half of them (57%) responded 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 use of pornographic movies/ videos by majority were internet and mobile (75%), followed by CD/ DVD/ Video (33%), TV (26%) and magazine (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 or another form and 47% of them were taking it every day. More than one third (37%) were taking alcohol; about 16% were taking it more than once in a week and about 2% were taking it every day. Major reason of taking alcohol/ drugs was found to be a friend's influence.

About 13% adolescents were taking some or other type of intoxicants like SP, Relipen, Phensidly, Corex, Digepum, Correction fluid etc and 3.3% were also taking various types of banned psychotropic substances like Drugs-Brown sugar, Cocaine, heroin. 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%), injectibles (9%) and others (12.5%). Major reasons informed by students for habit of drug among friends were for fun (53%), and friends taking drugs (19%).

Association of Background Variables with Adolescent Sexual Behavior

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 sexual relationship.

More adolescents (13%) were involved in premarital sex in Champhai than that at Aizaw1 (9%). The mean age of sexual intercourse was around 16.16 years; about 80% of them had sex sometimes, and for the rest, it was occasional. Table 1 shows that though, in aggregate, approximately 10% adolescents accepted their involvement in sexual behavior, but it is found that more male students (15.6%) were involved in such behavior as compared to less than one third among females (4%).

If we see the age distribution of adolescent sexual behavior, it is found that in less than 15 years age group (during 9^{th} to 10^{th} standard) only 5% student were involved but as students enter into higher age group 15-19 (11th to 12th standard) this increased to 10% which further increased sharply to 20% after age of 20 years (who may be repeaters among class 12th). It is also likely that as age increases to 20 years and more, these adolescents develop relationship with sex partners outside peers. Students from rural areas reported higher indulgence (10.5%) than those hailing from urban areas (9.4%). This may be due to the fact that students from rural areas were staying in school hostels or local relatives in both the cities away from parental control.

This fact is further corroborated with evidence that those living with parents were three times less (15%) involved in sexual behavior compared to those who were staying away from their parents (45%). High percentage (40%) of students who did not respond to this aspect probably because of staying with local guardian, local dormitories in schools etc may be involved in sexual behavior.

Higher percentage of adolescents (19%), who were working part-time were involved in sexual activity compared to no part time workers (9%). This may be due to flexibility in freedom to spend the money may be for outings, partying, alcohol, drug, seeing pornographic literature etc which may further motivate adolescents for sexual activity. However, type of family nuclear or joint having no difference in adolescent's sexual behavior (p>05). Monthly income of parents has no association with adolescent sexual behavior (p>.05), though such behavior is relatively more among adolescents from very low income group (<Rs5000 per month) or very high income group (>Rs 20,000 per month). Thus, gender, area

of usual residence, age, living with parents, part-time working status have significant association with adolescent sexuality (p<.05). Besides socio-demographic variables, school related variables may also have association with adolescent sexual behavior which is examined and presented in Table 2.

As expected, indulgence in sex increases from 7% among 9th class students to 12% among 12th class students (p<.05) due to increase in age. More non-science students (11%) were involved in sexual behavior than science students (p<.05).

Less students (5%) in Missionary schools were involved in sex activities compared to 10-11% as compared to Government and other private schools (p<.05) which may be due to strictness in Missionaries school.

As expected, adolescents of co-ed schools were less involved in sexual behavior (10%) as compared to those of non-coed schools (17%), may be due to healthy mixing up and being more gender sensitive in co-ed schools. No significant difference was found among Mizo and English medium schools.

Gender	**Involvement in Sexual Act among Adolescents**			**Total (%)**	**P Value**
	Yes (%)	**No (%)**	**No Response (%)**		
Male	234 (15.6)	1213 (82.7)	20 (1.7)	1467 (100)	<0.05
Female	68 (4.2)	1516 (9.5)	18 (1.3)	1602 (100)	
Area	Involvement in Sexual Act among Adolescents			Total **(%)**	P Value
	Yes **(%)**	No **(%)**	No Response **(%)**		
Rural	123 (10.5)	1029 (88.0)	17 (1.5)	1169 (100)	<0.05
Urban	179 (9.4)	1700 (89.5)	21 (1.1)	1900 (100)	
Age	Involvement in Sexual Act among Adolescents			Total **(%)**	P Value
	Yes **(%)**	No **(%)**	No Response **(%)**		
<15	4 (4.8)	80 (95.2)	0 (0.0)	84 (100)	>0.05
15 -19	262 (9.4)	2502 (89.4)	35 (1.3)	2799 (100)	
20 -24	36 (19.5)	146 (79.0)	3 (1.5)	186 (100)	
Total	302 (9.8)	2729 (88.9)	38 (1.3)	3069 (100)	
Type of Family	Involvement in Sexual Act among Adolescents			Total **(%)**	P Value
	Yes **(%)**	No **(%)**	No Response **(%)**		
Nuclear	189 (9.8)	1706 (88.8)	27 (1.4)	1922 (62.6)	>0.05
Joint	93 (9.9)	834 (89.9)	9 (1.0)	936 (30.5)	
Extended	20 (9.5)	189 (89.6)	2 (0.9)	211 (100)	
Living with Parents	Involvement in Sexual Act among Adolescents			Total **(%)**	P Value
Yes	Yes **(%)**	No **(%)**	No Response **(%)**		
	45 (14.9)	307 (11.2)	6 (15.8)	358 (11.7)	<0.05
No	136 (45.0)	1316 (48.2)	20 (52.6)	1472 (48.0)	
No Response	121 (40.1)	1106 (40.5)	12 (31.6)	1239 (40.4)	
Working Part Time	Involvement in Sexual Act among Adolescents			Total **(%)**	P Value
	Yes **(%)**	No **(%)**	No Response **(%)**		
Yes	33 (19.4)	135 (79.4)	2 (1.2)	170 (100)	<0.05
No	269 (9.3)	2594 (89.5)	36 (1.2)	2899 (100)	
Monthly Income of Parents	Involvement in Sexual Act among Adolescents			Total **(%)**	P Value
	Yes **(%)**	No **(%)**	No Response **(%)**		
< 5000	27 (11.6)	201 (86.6)	4 (1.7)	232 (100)	>0.05
5000 -10000	51 (9.9)	456 (88.9)	6 (1.2)	513 (100)	
10001 -15,000	21 (11.1)	168 (88.9)	0 (0.0)	189 (9.3)	
15001 -20000	25 (7.5)	306 (91.3)	4 (1.2)	335 (100)	
20,000+	108 (14.1)	647 (84.8)	8 (1.1)	763 (100)	
No Response	70 (6.8)	951 (91.7)	16 (1.5)	1037 (100)	
Total	302 (9.8)	2729 (88.9)	38 (1.3)	3069 (100)	

Table 1.Association between socio-economic and demographic variables and adolescent sex

 ISSN: 2349–2880

Class of Study	Involvement in sexual act among adolescents			Total	P Value
	Yes (%)	No (%)	No Response (%)		
9	27 (6.9)	362 (92.3)	3 (0.8)	392 (100)	<0.05
10	41 (10.0)	364 (89.2)	3 (0.8)	408 (100)	
11	108 (8.8)	1099 (89.3)	24 (1.9)	1231 (100)	
12	122 (12.1)	878 (87.1)	8 (0.8)	1008 (100)	
Subject Stream	Involvement in sexual act among adolescents			Total **(%)**	P Value
	Yes **(%)**	No **(%)**	No Response **(%)**		
Science	39 (7.4)	488 (92.1)	3 (7.9)	530 (100)	<0.05
Arts/ Commerce	192 (11.1)	1503 (87.2)	29 (1.7)	1724 (100)	
N.A. (for High School students)	71 (8.7)	738 (90.6)	6 (0.7)	815 (100)	
Total	302 (9.8)	2729 (88.9)	38 (1.3)	3069 (100)	
Category of School/ College	Involvement in sexual act among adolescents			Total **(%)**	P Value
	Yes **(%)**	No **(%)**	No Response **(%)**		
Government	140 (10.1)	1218 (88.0)	26 (1.9)	1384 (100)	<0.05
Private	139 (11.2)	1092 (88.1)	9 (0.7)	1240 (100)	
Mission	23 (5.2)	419 (94.2)	3 (0.6)	445 (100)	
Type of School/ College	Involvement in sexual act among adolescents			Total	P Value
	Yes	No	No Response (%)		
Co-ed	294 (9.7)	2693 (89.1)	36 (1.2)	3023 (100)	<0.05
Non Co-ed	8 (17.4)	36 (78.3)	2 (4.3)	46 (100)	
Medium of Education	Involvement in sexual act among adolescents			Total **(%)**	P Value
	Yes **(%)**	No **(%)**	No Response **(%)**		
English	267 (10.0)	2357 (88.6)	36 (1.4)	2660 (100)	>0.05
Mizo	35 (8.6)	372 (91.0)	2 (0.4)	409 (100)	
Total	302 (9.8)	2729 (88.9)	38 (1.3)	3069 (100)	

Table 2.Association between school related variables and adolescent sex

Association of Risk Behavior and Media Exposure with Adolescent Sexual Behavior

Association of Leisure Activities with Adolescent Sexual Behavior

The next important relationship examined was association of behavior of partying/ picnic, taking alcohol and drugs etc with involvement in sexual activities. Table 3 describes that almost double percentage (13%) of adolescents who spend their leisure time in partying/ picnic were involved in sexual activity as compared to those who did not participate (6%) in partying etc, may be because of developing more intimate relationship with opposite gender while enjoying their leisure time in picnic/ party etc.

It is found from Table 3 that adolescents who were taking alcohol, drugs and other intoxicants in such party/ picnic were having more than two times higher involvement in sex as compared to those who did not consume such substances.

The percentage of involvement in sex starts increasing from use of alcohol (18%) to puffing (26%), other intoxicants (22%) and reaches the highest level for those who took drugs (33%) in the party.

This higher proportion may be due to fact that such adolescents have money and they also spend money on sex may be with commercial sex workers. However, it appears that spending time in good activities have positive effect on adolescents. Same is analyzed in Table 4.

It is seen from Table 4 that higher percentage of adolescents who spend time in outdoor activities like hanging out, sports etc were involved in sexual activity unlike the ones who spent their leisure time in indoor activities like listening music, reading novels and magazines, and watching movies.

Therefore, healthy entertainment activities should be promoted among adolescents to divert their attention from sex related anxiety.

Party/ Picnic	Involvement in Sexual Act among Adolescents			Total (%)	P Value
	Yes (%)	No (%)	No Response (%)		
Yes	234 (12.6)	1603 (86.2)	23 (1.2)	1860 (100)	<0.05
No	66 (5.5)	1116 (93.2)	15 (1.3)	1197 (100)	
Total	300 (9.8)	2719 (88.9)	38 (1.3)	3057 (100)	
Drink Alcohol	Involvement in Sexual Act among Adolescents			Total (%)	P Value
	Yes (%)	No (%)	No Response (%)		
Yes	173 (17.9)	782 (81.0)	11 (1.1)	966 (56.8)	<0.05
No	52 (7.1)	671 (91.4)	11 (1.5)	734 (43.2)	
Total	225 (13.2)	1453 (85.5)	22 (1.2)	1700 (100)	
Puffing	Involvement in Sexual Act among Adolescents			Total (%)	P Value
	Yes (%)	No (%)	No Response (%)		
Yes	29 (26.4)	81 (73.6)	0 (0.0)	110 (100)	<0.05
No	196 (12.3)	1371 (86.3)	22 (1.4)	1589 (100)	
Total	225 (13.2)	1452 (85.5)	22 (1.3)	1699 (100)	
Drugs	Involvement in Sexual Act among Adolescents			Total (%)	P Value
	Yes (%)	No (%)	No Response (%)		
Yes	32 (32.9)	64 (65.9)	1 (1.2)	97 (100)	<0.05
No	193 (12.1)	1388 (86.6)	21 (1.3)	1602 (100)	
Total	225 (13.2)	1452 (85.5)	22 (1.3)	1699 (100)	
Other intoxication	Involvement in Sexual Act among Adolescents			Total (%)	P Value
Yes	Yes (%)	No (%)	No Response (%)		
	36 (21.7)	128 (77.1)	2 (1.2)	166 (100)	<0.05
No	189 (12.3)	1324 (86.4)	20 (1.3)	1533 (100)	
Total	225 (13.2)	1452 (85.5)	22 (1.2)	1699 (100)	

Table 3.Association between partying/ picnic, consumption of drug etc and adolescent sex

Association of Watching Porn Movies with adolescent sexual behavior

Though healthy entertainment has a positive effect on adolescents, the behavior of seeing pornographic movies is also examined. The type of companionship while seeing pornographic movies and the type of media used are important factors which are described in Table 5.

Table 5 describes that almost double percentage of adolescents (12%) who were watching pornographic movies/ videos were indulged in sexual behavior compared to those who did not see pornographic movies (5%). Table 5 also describes that when adolescents see pornographic movies with their opposite gender friends (boy/ girl friend), their involvement in sexual behavior is sex is higher (31%) compared to when seeing alone (11%), with mix group of boys and girls (16%), with only group of boys (16%), and girls seeing within group of girls (3%). Those who did not respond to this query also reported high percentage (21%) of indulgence in sexual behavior. It is seen from Table 5 that among those who were involved in sexual behavior, internet/ mobile is used by highest number of adolescents (77%), followed by CD/ DVD/ Video (44%), TV (37%), Magazine (11%) and other sources (7%).

Association of Consuming Tobacco, Liquor and Drugs with Adolescent Sexual behavior

Further efforts were made to study the effect of consuming various tobacco products, alcohol and banned drugs on sexual behavior of adolescents, findings of which are described in Table 6, Table 7 and Table 8.

It is found that among the adolescents involved in sexual activity, almost three times more (14%) involvement was seen by adolescents who were taking tobacco products compared to those who did not take tobacco products (5%).

It is further seen from the data that as tobacco taking frequency increases, proportion of adolescent involved in sex also increases from once in a week (9%) to twice in a week (10%), and from more than once in a week (14%) to every day (18%). Table 7 describes association between alcohol consumption and indulgence in sex.

 ISSN: 2349–2880

Sports	**Involvement in Sexual Act among Adolescents**			**Total (%)**
	Yes (%)	**No (%)**	**No Response (%)**	
Yes	106 (16.7)	521 (81.9)	9 (1.4)	636 (100)
No	128 (10.7)	1053 (88.2)	13 (1.1)	1194 (100)
Total	234 (12.8)	1574 (86.0)	22 (1.2)	1830 (100)
Listening Music	Involvement in Sexual Act among Adolescents			Total (%)
	Yes (%)	No (%)	No Response (%)	
Yes	150 (12.1)	1078 (86.9)	13 (1.0)	1241 (100)
No	84 (14.3)	496 (84.2)	9 (1.5)	589 (100)
Total	234 (12.8)	1574 (86.0)	22 (1.2)	1830 (100)
Reading Novel, Magazine	Involvement in Sexual Act among Adolescents			Total (%)
	Yes (%)	No (%)	No Response (%)	
Yes	53 (8.8)	545 (90.4)	5 (0.8)	603 (100)
No	181 (14.8)	1029 (83.9)	17 (1.4)	1227 (100)
Total	234 (12.8)	1574 (86.0)	22 (1.2)	1830 (100)
Hanging out	Involvement in Sexual Act among Adolescents			Total (%)
	Yes (%)	No (%)	No Response (%)	
Yes	111 (14.3)	657 (84.8)	7 (0.9)	775 (100)
No	123 (11.7)	917 (86.9)	15 (1.4)	1055 (100)
Total	234 (12.8)	1574 (86.0)	22 (1.2)	1830 (100)
Watching Movie	Involvement in Sexual Act among Adolescents			Total (%)
	Yes (%)	No (%)	No Response (%)	
Yes	123 (11.3)	955 (87.5)	13 (1.2)	1091 (100)
No	111 (15.0)	619 (83.8)	9 (1.2)	739 (100)
Total	234 (12.8)	1574 (86.0)	22 (1.2)	1830 (100)
	(P<0.05)			

Table 4.Association between type of leisure activities and involvement in adolescent sex

Watch Pornographic Movies/ Video	**Involvement in Sexual Act among Adolescents**			**Total (%)**	**P Value**
	Yes (%)	**No (%)**	**No Response (%)**		
Yes	257 (11.8)	1906 (87.2)	22 (1.0)	2185 (100)	<0.05
No	45 (5.2)	799 (93.0)	15 (1.7)	859 (100)	
Total	302 (9.9)	2705 (88.9)	37 (1.2)	3044 (100)	
Companion during watching	Involvement in Sexual Act among Adolescents			Total (%)	P Value
	Yes (%)	No (%)	No Response (%)		
Alone	108 (11.3)	836 (87.6)	10 (1.1)	954 (100)	<0.05
With boy/ girl friend	22 (31.4)	48 (68.6)	0 (0.0)	70 (100)	
With friend both boys and girls	23 (16.1)	119 (83.2)	1 (0.7)	143 (100)	
With friends only girls	14 (3.2)	424 (96.1)	3 (0.7)	441 (20.4)	
With friends only boys	84 (15.7)	445 (83.3)	5 (0.9)	534 (100)	
No Response	5 (20.8)	18 (75.0)	1 (4.2)	24 (100)	
Total	256 (11.8)	1890 (87.3)	20 (0.9)	2166 (100)	
Media used (N=255)	Involvement in Sexual Act among Adolescents				
Internet/ Mobile (%)	CD/ DVD/ Video (%)	TV (%)	Magazine (%)	Other Sources (%)	
196 (76.9)	113 (44.3)	95 (37.3)	27 (10.6)	18 (7.1)	

Table 5.Association between watching pornographic movies and adolescent sex

Taking Tobacco Products	Involvement in Sexual Act among Adolescents			Total (%)	P Value
	Yes (%)	No (%)	No Response (%)		
Yes	228 (13.8)	1402 (85.0)	19 (1.2)	1649 (100)	<0.05
No	73 (5.2)	1310 (93.5)	18 (1.3)	1401 (100)	
Total	301 (100)	2712 (100)	37 (100)	3050 (100)	
Frequency of Tobacco consumption	Involvement in Sexual Act among Adolescents			Total (%)	P Value
	Yes (%)	No (%)	No Response (%)		
Not at All	17 (8.8)	181 (90.9)	1 (0.6)	199 (100)	<0.05
Once in a week	23 (8.8)	236 (90.1)	3 (1.1)	262 (100)	
Twice in a week	15 (10.4)	126 (87.5)	3 (2.1)	144 (100)	
More than once a week	29 (13.5)	184 (85.6)	2 (0.9)	215 (100)	
Everyday	136 (17.6)	631 (81.6)	6 (0.8)	773 (100)	
No Response	8 (3.5)	41 (2.9)	2 (11.8)	51 (3.1)	
Total	220 (13.7)	1358 (85.2)	15 (0.9)	1593 (100)	

Table 6.Association between tobacco consumption behavior and adolescent sex

Alcohol	Involvement in Sexual Act among Adolescents			Total (%)
	Yes (%)	No (%)	No Response (%)	
Yes	198 (17.4)	929 (81.6)	11 (1.0)	1138 (100)
No	102 (5.4)	1775 (93.3)	26 (1.3)	1903 (100)
Total	299 (9.9)	2695 (88.9)	37 (1.2)	3031 (100)
Frequency of Alcohol Consumption	Involvement in Sexual Act among Adolescents			Total (%)
	Yes (%)	No (%)	No Response (%)	
Once in a week	68 (22.8)	228 (76.5)	2 (0.7)	298 (100)
Twice in a week	15 (23.8)	47 (74.6)	1 (1.9)	63 (100)
More than once a week	30 (26.5)	83 (73.5)	0 (0.0)	113 (100)
Everyday	14 (58.3)	10 (41.7)	0 (0.0)	24 (100)
Total	127 (25.5)	368 (73.9)	3 (0.6)	498 (100)

Table 7.Association between alcohol consumption behavior and adolescent sex

Table 7 shows that among the adolescents involved in sexual activity, the involvement was three times more (17%) by adolescents who are in habit of taking alcohol compared to who did not take alcohol (5%). As frequency of taking alcohol increases, the indulgence in sexual behavior also increase from once in a week (23%) to twice in a week (24%), and more than once in week (27%) but jumps to very high percentage (58%) for those who consume alcohol daily. Table 8 describes association between habit of taking drugs like SP Relipen, Phensidly etc with indulgence in sex.

It is found that among the adolescents involved in sexual activity, the involvement was almost more than two times by adolescents (21%) who were taking drugs like SP Relipen, Phensidly etc compared to who did not take drugs (8%). However, indulgence in sex was almost three times higher (30%) among those who were taking drugs like Brown sugar, Cocain, Heroin etc. Table 9 explores association between sexual behavior with reasons for taking drugs. Table 9 describes that among those adolescents (number 416) who were taking drugs, involvement in sex was more among those who took drugs due to friends taking drugs (69%), compared to reasons like break-up with boy/ girl friend (18%), stress due to study (10%), or parents being separated (5.6%). So, the data shows that even among the group of drug takers, more were involved in sex under peer influence. However, due to a small sample of only 90 adolescents who were drug takers and also indulged in sex, the results need to be interpreted carefully.

Association of habit of Consuming Liquor and Drugs among Friends with Adolescent Sexual behavior

Table 10 attempts to analyze influence of friends who were taking alcohol and drugs in various forms on adolescent sexuality. It is found that adolescent sexuality was two times more (13%) among those whose friends were taking alcohol compared to those whose friends were not taking alcohol (4.6%).

Similarly, adolescent sexuality was 1.5 times higher (13%) among those whose friends were taking drugs compared to those whose friends were not taking drugs (9%).The association of adolescent sex behavior with company of friends taking drugs and alcohol is statistically significant. The involvement increases steadily among oral drug takers

 ISSN: 2349–2880

(10%) to using Puffs (21%) to inject Table drug users (IDUs) (29%).

Association of Attitude and Peer Involvement in Sex with Adolescent Sexual behavior

Table 11 describes that the adolescents whose attitude is permissive about premarital sex are 6 times more indulged in sex (31%) than those who do not endorse premarital sex (5%). Similarly, adolescents who perceive that their friends are involved in sex are 4 times more involved in sex (17%) than those whose friends are not involved (4%).

Taking Drugs like-SP Relipen, Phensidly etc	Involvement in Sexual Act among Adolescents			Total (%)
	Yes (%)	No (%)	No Response (%)	
Yes	81 (20.9)	301 (77.9)	4 (1.2)	386 (100)
No	219 (8.2)	2409 (90.6)	32 (1.2)	2660 (100)
Total	300 (9.8)	2710 (88.9)	36 (1.3)	3046 (100)
Taking Drugs like -Brown sugar, Cocaine, heroin	Involvement in Sexual Act among Adolescents			Total (%)
	Yes (%)	No (%)	No Response (%)	
Yes	30 (29.7)	71 (70.3)	0 (0.0)	101 (100)
No	268 (9.1)	2631 (89.6)	36 (1.3)	2935 (100)
Total	298 (9.8)	2702 (88.9)	36 (1.3)	3036 (100)

Table 8.Association between various types of drugs consumption behavior and adolescent sex

For Fun	Friends taking Drug (%)	Breaking up with boy/ girl friend (%)	Stress of study (%)	Parents separated (%)	Others (%)	Total (%)
	62 (68.9)	16 (17.8)	9 (10)	5 (5.6)	8 (8.9)	90

*Multiple responses

Table 9.Association between various reasons for taking drugs and adolescent sex (N=416)*

Friends taking Alcohol	Involvement in Sexual Act among Adolescents			Total (%)	P Value
	Yes (%)	No (%)	No Response (%)		
Yes	252 (12.9)	1685 (86.3)	15 (0.8)	1952 (100)	<0.05
No	50 (4.6)	1022 (93.6)	20 (1.8)	1092 (100)	
Total	302 (9.9)	2707 (88.9)	35 (1.1)	3044 (100)	
Friends taking Drugs	Yes (%)	No (%)	No Response (%)	Total (%)	P Value
Yes	146 (12.7)	993 (86.6)	8 (0.7)	1147 (100)	<0.05
No	155 (9.1)	1708 (90.4)	27 (1.5)	1890 (100)	
Total	301 (9.9)	2701 (88.9)	35 (1.2)	3037 (100)	
Type of Drugs	Involvement in Sexual Act among Adolescents			Total (%)	P Value
	Yes (%)	No (%)	No Response (%)		
Injectable	28 (28.6)	69 (70.4)	1 (1.0)	98 (100)	<0.05
Puffs	30 (20.8)	113 (11.9)	1 (12.5)	144 (13.1)	
Oral	55 (10.1)	483 (89.1)	4 (0.7)	542 (100)	

Table 10.Association between friends taking alcohol, type of drugs and adolescent sex

Nothing wrong in Pre-Marital Sexual Intercourse	Involvement in Sexual Act among Adolescents			Total (%)	P Value
	Yes (%)	No (%)	No Response (%)		<0.05
Agree	126 (30.7)	282 (68.6)	3 (0.7)	411 (100)	
Disagree	114 (5.3)	2036 (94.2)	12 (0.5)	2162 (100)	
Don't Know	57 (12.5)	397 (86.9)	3 (0.6)	457 (100)	
Friends involved in Pre-Marital Sex	Yes (%)	No (%)	No Response (%)	Total (%)	P Value
Yes	226 (17.4)	1068 (82.1)	7 (0.5)	1301 (100)	<0.05
No	65 (4.0)	1536 (95.4)	9 (0.6)	1610 (100)	

Table 11.Association between attitude towards premarital sex, friends' involvement and adolescent sexual behavior

Determinants of Sexual behavior among Adolescents

Attempt is also made to apply logistic regression analysis to identify determinants of sexual activity among adolescents. For the analysis of determinants of adolescent sexuality, only those variables which show significant association were considered as explanatory or predictor variables (each represented in categories). They are from different sections of questionnaire viz., background profile, life style and media exposure, risk behavior, peer influence and attitude etc, and results are presented in Table 12, Table 13 and Table 14. Table 12 shows that the odds of indulging in sexual activates are significantly higher (nearly 2 times) among males as compared to females. However, as compared to Hindus, odds of having sex among other religions were higher but statistically not significant. Similarly, results show that indulgence in sex increases from class 9th to 12th but not statistically significant. Odds of indulgence in sex was higher among Arts (1.3 times) and Common Stream (2.2 times) than Science, higher among Government schools than Missionary Schools, almost two times higher in Non-Coed Schools than Co-ed schools, more in English medium Schools than Mizo-medium Schools, two times higher among part time working adolescents than non-working, and more in nuclear families compared to joint and extended ones. It appears that odds of indulgence are more among adolescents from higher income group families (Rs>20,000) than lower income group (< Rs15,000). This may be due to the fact that adolescents from higher income families are at more liberty to spend on partying, picnic, movies, consumption of alcohol etc.

Determinants	Categories	Sig	Exp (B)
Sex of respondent	Male	0.000	2.584
	Female®		
Native place of adolescent	Rural	0.130	1.298
	Urban®		
Religion	Christianity	0.991	1.020
	Buddhism	0.881	1.219
	Muslim	0.198	8.054
	Hindu®	0.522	
Class of studying	8®	0.542	
	9	0.904	1.103
	10	0.944	1.057
	11	0.505	2.139
	12	0.356	2.860
Subject stream	Science®	0.481	
	Arts	0.306	1.297
	Common Stream	0.373	2.180
Type of school/ college	Mission®	0.513	
	Government	0.953	1.29
	Private	0.472	0.707
Category of school/ college	Co-ed®		
	Non Co-ed	0.288	1.870
Medium of education	English	0.181	1.430
	Mizo®		
Working Part Time	Yes	0.143	1.931
	No®		
Type of Family	Nuclear	0.541	1.447
	Joint	0.389	1.526
	Extended®	0.688	
Parents' Monthly Income	<5000	0.365	0.692
	5000 -10000	0.079	0.559
	10001 -15000	0.684	0.847
	15001 -20000	0.009	0.368
	20000+®	0.108	

Table 12.Odds ratios for indulging in sex by background variables

 ISSN: 2349–2880

Determinants	Categories	Sig	Exp (B)
Going for Party/ Picnic with Friends	Yes	0.823	1.084
	No®		
Any of the following served in the party/ picnic			
a)Drink (Alcohol)	Yes	0.045	1.522
	No®		
b)Puffing	Yes	0.516	1.240
	No®		
c)Drugs	Yes	0.059	1.901
	No®		
Spending leisure time in			
a)Sports	No	0.777	1.054
	Yes®		
b)Listening music	No	0.080	1.384
	Yes®		
c)Reading Novel, Magazine	Yes	0.637	1.098
	No ®		

Table 13.Odds ratios for indulging in sex by outside leisure activities

Determinants	Categories	Sig	Exp (B)
Ever Watch Pornographic Movies	Yes®		
	No	0.594	0.540
Taking tobacco products like Cigarette, Pan, Gutka etc	Yes	0.005	4.454
	No®		
Frequency of tobacco taking	Not at All®	0.308	
	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
Taking alcohol	Yes	0.353	0.643
	No®		
Frequency of taking alcohol during last 4 weeks	Not at All®	0.111	
	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	0.633
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®		

Table 14.Odds ratios for indulging in sex by adolescent's life style and deviant behavior

Determinants	Categories	Sig	Exp(B)
Approve pre-marital sexual activity	Don't Know	0.000	0.425
	Disagree	0.000	0.186
	Agree®	0.000	
Friends involved in pre-marital sexual activity	Don't Know	0.009	0.229
	No	0.000	0.304
	Yes®	0.000	

Table 15.Odds ratios for indulging in sex by adolescent's attitude about pre-marital sex

Regarding risk among adolescents during partying, it is found that odds of indulgence in sex among party/ picnic goers were slightly higher than non partying adolescents. Those who informed that in the part/ picnic alcohol, drugs and puffs etc are served had higher odds of indulgence in sex which was statistically significant, also. Adolescents who did not spend their leisure time in sports and music were having 1.1 and 1.4 times higher odds respectively. Adolescents who spent their time in reading novels were having higher odds may be due to nature of novel.

Table 14 describes that odds of indulgence in sex was almost half among those who did not see pornographic literature. The odds were 4 times higher among those who consume tobacco products in any form. Table 14 also shows that odds increase as per frequency of tobacco consumption. Similarly odds were on higher side among those who consume alcohol and odds increase as frequency of consumption increases. It was found that adolescents taking drugs like SP Relipen, Phensidly, Corex, Digepum, Correction fluid etc were having 1.6 times higher odds.

Table 15 shows that those adolescents who approve pre-marital sex and their friends were involved in sex, were having significantly higher odds ratio of indulgence in sex.

There is generational change and now there is more influence of western culture among adolescents due to media influence and more openness in society. Regarding peer influence, the possible explanation is that in majority of cases, sexual relations are among friends than outside partners, therefore it shows statistically significant relationship.

Discussion

The present article attempted to find association of adolescent sexual behavior with socio-cultural background, school background, and adolescent behavior which includes the way adolescent spent their time in outings, consuming tobacco products, alcohol, drugs etc, attitude about premarital sex and peer involvement in sex etc.

The results show that though in aggregate approximately 10% adolescents accepted their involvement in sexual behavior, but it is found that more male students (15.6%) were involved in such behavior compared to less than one third among females (4%).

It is likely that males may be over reporting due to boasting masculinity but in case of females, it is under reported due to social stigma and morality etc. Moreover, this gender difference may be due to the fact that some male adolescents may find partners outside their peer group.

It was found that a less percentage of adolescents engaged in healthy entertainment were involved in sex viz., reading magazine/ novel (9%), listening music (12%), but a higher percentage indulged in sex among those who were involved in external activities like sports (17%), hanging out (14%) and watching movies (15%).

The easy availability of internet in mobile may be widely misused (79%) by adolescents for viewing porn clips/ movies. Two times more adolescents (12%) who view porn were involved in sex compared to those who did not view it (5%).There is need to control use of internet in mobile by parents and schools so as to discourage access to pornographic movies to adolescents. The government should ban access to pornographic movies for adolescents.

Indulgence in sex among students taking tobacco was 13%, which increased to 17% for those who drink alcohol and further rose to 21% for those who took banned drugs etc. In view of direct association of consuming tobacco products, alcohol, and drugs with adolescent sexual behavior, government needs to create tougher laws for those who sell tobacco, alcohol, and drugs to adolescents.

Adolescent sexual behavior is a global concern. Similar 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.[12] 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 problems, school related problems, family related problems, social problems, unsafe sex, and tendency of suicide.[13] Children under the age of 14 who reported intentional exposure to pornography, irrespective of source, were significantly more likely to report delinquent behavior and substance use in the previous year.[14] Sexual behavior under the influence of substances such as alcohol or cocaine etc increases risk of STIs and unplanned pregnancy.[15] 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

 ISSN: 2349–2880

to them. Among respondents who drink and use drugs, 16 percent used condoms less often after drinking and 25 percent after drug use.[16]

It appears that to manage adolescent sexual behavior, parents, schools, religious leaders and government, all need to work together. The behavior issues may be addressed by parents, and schools may educate adolescents about risk and serious psychological, physical and social consequences of sex during adolescence. Government may work out strategies under the ARSH Program through better coordination with the school health program for appropriate counseling and skilling adolescents in negotiating peer pressure against indulging in sex.

Conclusion

The message from this article is that factors that put young people at risk for compromising sexual health behaviors are multifaceted. So, the factors that protect young people from risk are equally complex, too. This article may give ARSH program planners and policy makers important clues about as to what influences sexual and reproductive health outcomes among adolescents.

Recommendations

Government needs 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 teachers may be trained to assess warning signs of teenagers' delinquent behavior, followed by a comprehensive evaluation by a 'child and adolescent psychiatrist' under ARSH program.

Adolescent sexual behavior should be viewed as a part of overall high risk social and personal behavior and they should be educated about holistic behavior including harmful effects of consuming tobacco products, alcohol, drugs which will indirectly reduce risk of adolescent sex, also.

Acknowledgements

Authors are grateful to officials of State Education and Health Department and Principals of all selected schools 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.

Conflict of Interest

Authors do not have any conflict of interest in this article.

Disclaimer

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

References

1. Walvoord E. The timing of puberty: Is it changing? Does it matter? *Journal of Adolescent Health* 2010; 47(5): 433-39.
2. WHO. Adolescent Pregnancy-Unmet Needs and Undone Deeds. WHO Discussion Papers on Adolescence. Department of Child and Adolescent Health and Development, 2007.
3. Government of India. Implementation guide on RCH-II, Adolescent Reproductive Sexual Health Strategy, New Delhi: Ministry of Health & Family Welfare, 2006.
4. Ministry of Health and Family Welfare (MOHFW). National Rural Health Mission. Rashtriya Kisjhore Swasthya Karyakram (RKSK). New Delhi: Ministry of Health and Family Welfare, Government of India, 2014.
5. Government of India. Implementation guide on RCH-II, Adolescent Reproductive Sexual Health Strategy, New Delhi: Ministry of Health & Family Welfare, 2006.
6. Tiwari VK, Kumar A. Premarital Sex and Unmet Need of Contraception among Unmarried Youths. Evidences from two Cities of India. *The Journal of Family Welfare* 2004; 50(2): 62-72.
7. Parasuraman S, Kishor S, Singh SK et al. A profile of youth in India. National Family Health Survey (NFHS-3), India, 2005-06. Mumbai: International Institute for Population Sciences, August 2009.
8. World Health Organisation. Early Marriages, Adolescent and Young pregnancies. Sixty Fifth World Health Assembly, Provisional agenda item 13.4, 16 March 2012.
9. Government of India. National AIDS Control Organisation, Department of AIDS Control, Annual Report, 2012-13.
10. Puri S, Bhatia V, Swami HM et al. Awareness of Emergency Contraception among Female College Students in Chandigarh, India. *Indian Journal of Medical Science* Jun 2007; 61(6): 338-46.
11. Tiwari VK, Piang LK, Sherin Raj TP et al. Study on Implementation of Adolescent Reproductive and Sexual Health Scheme in Mizoram. National Institute of Health and Family Welfare, New Delhi, Unpublished Report, May 2014.

12. American Academy of Child and Adolescent Psychiatry. Facts for Families, Teens Alcohol and other drug. July 2013; No 3.
13. Magnani RJ, Mehryar L, Weiss LA et al. Reproductive Health Risk and Protective Factors among Youth in Lusaka, Zambia. *Journal of Adolescent Health* 2002; 30(1): 76-86.
14. Ybarra ML, Michele KJ. Exposure to Internet Pornography among Children and Adolescents: A National Survey. *Cyber Psychology & Behaviour* 2005; 8(5): 473-86.
15. Peter AH, Maxine H, Sherry SB. Risky Adolescent Sexual Behavior: A Psychological Perspective for Primary Care Clinicians. *Topics in Advanced Practice Nursing e-Journal* 2004; 4(1).
16. Ralph WH, Strunin L, Berlin BM et al. Beliefs about AIDS, Use of Alcohol and Drugs, and Unprotected Sex among Massachusetts Adolescents. *Am J Public Health* 1990; 80: 295-99.

Date of Submission: 21st Apr. 2015

Date of Acceptance: 10th May 2015