Scholars Journal of Applied Medical Sciences (SJAMS)
Abbreviated Key Title: Sch. J. App. Med. Sci.
ISSN 2320-6691 (Online)
ISSN 2347-954X (Print)

A Unit of Scholars Academic and Scientific Society, India
www.saspublishers.com

Community Medicine

An Assessment of Risk Behaviors among the Adolescent Students in the District of Burdwan, West Bengal

Dr. Aditi Das[1], Dr. Rupali Thakur[2*], Dr. Pranoy Ghosh[3], Dr. Harshal Tukaram Pandve[4]
[1]Assistant Professor, Dept of Physiology, Malda Medical College & Hospital, Malda, India
[2]Assistant Professor, Dept of Community Medicine, Opp. Shyam Sayer, Khosbagan, Bardhaman, West Bengal, India
[3]Medical Officer, west Bengal Health Services West Bengal India
[4]Professor & HOD, Dept. of Community Medicine, ESIC Medical College, Sanathnagar, Hyderabad, India

Original Research Article

***Corresponding author**
Dr. Rupali Thakur

Article History
Received: 02.05.2018
Accepted: 12.05.2018
Published: 30.05.2018

DOI:
10.36347/sjams.2018.v06i05.002

Abstract: Adolescence is the time to build healthy behavior, attitude and lifestyle that contribute to current and future health. They are the most vulnerable group to the risky behavior. Serious health and safety issues such as motor vehicle crashes, violence, and substance abuse, injuries from aggression, suicidal ideation and risky sexual behaviors can adversely affect adolescent health. Given the nature and consequences of adolescent risk behaviors there is an imperative need to understand the entire array of these interrelated risk behaviors. To assess certain risk behaviors among the adolescent students. To explore any health risk behaviors differences according to their age, gender and region. Community based cross-sectional design. The study was conducted in period of July 2012- August 2012. The study was conducted in nearby accessible schools, two from urban and three from rural areas of Burdwan district. The study was conducted among 1109 students of 9th to 12th class. The survey was adopted the Youth Risk Behavior Survey Questionnaire developed by CDC to monitor health risk behaviors. The questionnaire was self-administered by the students in one period‘s time. Some modifications were done in instruments after a pilot study. The participation rate of the students was 91.72%. The mean age of the participants was 15 (±1.61) years. 20% to 30% of students reporting at least one health risk behavior from each of the domains. There is considerable number of students with at least one health risk behavior, which needs to be addressed thoroughly
Keywords: Adolescents, Students, Risk behavior, Assessment.

INTRODUCTION

Health is defined by World Health Organization (WHO) as “health is a state of complete physical, mental and social well-being and not merely an absence of disease or infirmity”. In recent years this statement has been amplified to include the ability to lead a “socially and economically productive life” [1]. A sound mind in a sound body has been recognized as a social ideal for many centuries. Mental health is the balanced development of the individual’s personality and emotional attitudes which enable him to live harmoniously with his fellow-men [2]. Imbalance in this balanced developmental process leads to rising of risk behaviors.

World Health Organization defined ‘adolescence’ as age group of 10-19 years. Being the period of transition from childhood to adulthood, it is the time to build healthy behavior, attitude and lifestyle that contribute to current and future health [3-5]. This period is also a time of preparation for undertaking greater responsibilities and a time to ensure healthy all-round development [6].

Serious health and safety issues such as motor vehicle crashes, violence, injuries from aggression and suicidal ideation often aggravated by alcohol and illicit drugs, increased susceptibility to chronic diseases from substance use, and risky sexual behaviors which include sexually transmitted infections and unwanted pregnancy from sexual experimentation can adversely affect adolescent and young adults[5,7-8] .

Some adolescents also struggle to adopt behaviors that could decrease their risk of developing chronic diseases in adulthood, such as eating nutritiously, engaging in physical activity, and choosing not to use tobacco [9].

Given the nature and consequences of adolescent risk behaviors there is an imperative need to understand the entire array of these interrelated risk behaviors and promote activities to alter the circumstances that give rise to and sustain such cluster [10].

Therefore, this study was aimed to determine the prevalence of risk behaviors among school-going adolescents and to identify its socio-demographic correlates.

Objectives

- To assess certain risk behaviors among the adolescent students.
- To explore any health risk behaviors differences according to their age, gender and region

MATERIALS AND METHODS

- Design of study: Community based Cross-sectional design
- Study Period: July 2012- August 2012
- Study Place: The study was conducted in nearby accessible schools, two from urban and three from rural areas of Burdwan district
- Study Sample: The study was conducted among all the (1109) students of 9^{th} to 12^{th} class
- Study subjects: The study was done only in late adolescent age group, as the early adolescent age group was unable to respond to questionnaire.
- Sampling technique: In conformity with the CDC guideline to conduct such surveys; no sampling in the selected section of each class was done.
- Pilot study: Pilot study was done two school one from urban and another from rural. Data was collected from 9^{th} class of both schools. Some modification was done in questionnaire after the pilot study.
- Data collection: The school authorities and the legal guardians of the students were briefed about the purpose, content, anonymous nature and confidentiality of the survey and a written consent was obtained from both of them. After the data collection was done, one lecture session was conducted on hazards of youth risk behaviors and adoption of healthy lifestyle in each school.
- Study Instrument: The survey was adopted the Youth Risk Behavior Survey Questionnaire developed for the purpose by CDC; that was modified and validated to suit the needs and interests in our communities. This questionnaire was self-administered by the students in one period‘s time.
- Analysis: Done by using software SPSS-16. Categorical variables were summarized by percentages. Continuous variable were summarized by mean.
- Inclusion Criteria: Only those who showed written consent letter from their guardians
- Exclusion Criteria: Those students who failed to get consent from their parents to participate and the questionnaire not filled properly was excluded.
- Ethical clearance:
- Ethical clearance was obtained from institutional ethics committee of Burdwan Medical College before the study was conducted.
- The permission was taken from all the Head Masters and Head Mistress of the schools to conduct the study and the objective of the study was explained to them.
- Informed written consents were obtained from the guardians of the students before conducting the study.
- Confidentiality: Names were not taken during data collection. So the interview was taken in secret. The collected data were stored and analyzed with strict confidentiality.
- Risk behavior measures: The risk behavior comprises of Behavioral domains.

Physical safety was measured by two items related to wearing of seat belts and usage of mobile phone while cycling.

Violent Activity was assessed by ten questions related to carrying of weapon in last 30 days, involvement in physical fight and its effects,

Suicidal behavior was assessed by four questions related to feeling of sadness/ hopelessness for two weeks in a row, actually attempted suicide in last 12 months for which they had treated medically in last 12 months.

Substance use was measured by fourteen items related to lifetime and current use of tobacco and alcohol.

Body image and nutritional behavior were measured by self-assessing of their body image and care of their body build, also habit of taking nutritional as well as junk foods.

Physical activity was assessed by taking their habit of playing as well as spending their time in television and playing video/ computer games.

Sexual risk behavior was measured by four items relating to premarital sexual intercourse, sexual debut, number of partners and protection during sexual intercourse.

Socio-demographic and cultural variables: Socio-demographic variables included age in completed years, gender and geographical location of schools (rural or urban). Subjective socioeconomic status (SES) was categorized as lower (< Rs. 450), upper lower (450-899), lower middle (900-1499),

upper middle (1500-2999) and upper class (Rs. > 3000) as perceived by the participants [B.J. Prasad's Scale].

RESULTS

The participation rate of the students was 91.72% and 100 questionnaires were rejected for inconsistent/ incomplete responses. The final analysis was done with 1109 adolescents studying in class IX-XII of the selected schools. The mean age of the participants was 15 (±1.61) years. In urban area, 28.58% were males and 20.46% were females. In rural area, 22.72% were males and 28.22% were females. Most of the students were belong to Hindu religion (76.10%) and that of 18.30% of Muslim Religion. 20% to 30% of students reporting at least one health risk behavior from each of the domains.

Table-1: Socio Demographic characteristics of study population

Socio Demographic characteristics	Urban		Rural		Total	
	N= 544	%	N= 565	%	N=1109	%
Age (years)						
12-15	277	50.90	282	49.91	559	50.40
16-19	267	48.10	283	58.09	550	49.60
Gender						
Male	317	58.27	252	44.60	569	51.30
Females	227	41.73	313	55.39	540	48.70
Religion						
Hindu	436	80.14	408	72.21	844	76.10
Muslims	95	17.46	108	19.11	203	18.30
Christian	4	0.75	6	1.06	10	0.90
Others	9	1.65	43	7.92	52	4.70
Class						
9^{th}	161	29.60	198	35.04	359	32.37
10^{th}	148	27.20	145	25.66	293	26.42
11^{th}	122	22.42	102	18.05	224	20.19
12^{th}	113	20.78	120	21.23	233	21.02

Table-2: Distribution (Percentage) of Risk Behaviors by Region

Risk Behaviors	Urban		Rural		Total	
	N= 544	%	N=565	%	N=1109	%
Never wearing seat belts	125	22.97	265	46.90	390	35.16
Using phone while cycling (≥1 time in past 30 days)	237	43.56	167	29.55	404	36.42
Involvement in physical fight (≥1 time in past one year)	334	61.39	126	22.30	460	41.47
Feeling sad and hopeless in past one year	105	19.30	93	16.46	198	17.85
Actually Attempted Suicide (≥ 1 time in past one year)	41	7.53	41	7.25	82	7.39
Smoking (≥1 day in past 30 days)	102	18.75	57	10.09	159	14.33
chewing tobacco (≥1 day in past 30 days)	134	24.63	139	24.60	273	24.61
Drinking alcohol (≥1 day in past 30 days)	44	8.08	42	7.43	86	7.75
Eating fried foods (≥1 in past 7 days)	410	75.36	323	57.16	733	66.09
Watching television (≥2 hours in an average school day)	12	2.20	11	1.94	23	2.07
Playing video/ computer games (≥1 hour in an average school day)	49	9.0	21	3.71	70	6.31
Premarital sexual intercourse	15	2.75	3	0.53	18	1.62

Table-3: Distribution (Percentage) of Risk Behaviors by Gender

Risk Behaviors	Males		Females		Total	
	N=569	%	N=540	%	N=1109	%
Never wearing seat belts	164	28.82	226	41.85	390	35.16
Using phone while cycling (>1 time in past 30 days)	250	43.93	154	28.51	404	36.42
Involvement in physical fight (≥1 time in past one year)	278	48.85	182	33.70	460	41.47
Feeling sad and hopeless in past one year	108	18.98	90	16.67	198	17.85
Actually Attempted Suicide (≥ 1 time in past one year)	40	7.02	42	7.77	82	7.39
Smoking (≥1 day in past 30 days)	149	26.18	10	1.85	159	14.33
chewing tobacco (≥1 day in past 30 days)	166	29.17	107	19.81	273	24.61
Drinking alcohol (≥1 day in past 30 days)	76	13.35	10	1.85	86	7.75
Eating fried foods (≥1 in past 7 days)	398	69.94	335	62.03	733	66.09
Watching television (≥2 hours in an average school day)	11	1.93	12	2.22	23	2.07
Playing video/ computer games (≥1 hour in an average school day)	31	5.44	39	7.22	70	6.31
Premarital sexual intercourse	15	2.63	3	0.55	18	1.62

OBSERVATIONS AND RESULTS

The magnitude of health risk behavior was assessed by various domains.

Physical safety

The prevalence of adolescents not using seat belts for atleast once in their lifetime was 35.16% and the other aspect that not to use mobile phone while cycling was 63.5%. In case of wearing seat belts, more than half of rural females do not care to use seat belts; probable reason may be poor infrastructure of rural vehicles and lack of knowledge of safety education. This domain needs more research in Indian context.

Violent Activity

It was assessed by carrying of weapon in last 30 days, involvement in physical fight. Almost 41.47% of adolescents were involved in physical fight. Involvement in physical fight was found to be a grave risk in the urban areas (61.39%) than those of rural adolescents (22.30%). The proportion of carrying weapon was much higher in rural males (20.2%) than urban males (13.2%).

Suicidal behavior

It was assessed by four questions related to feeling of sadness/ hopelessness for two weeks in a row, actually attempted suicide in last 12 months for which they had treated medically in last 12 months. Percentage of feeling sad and hopeless was more in urban adolescence than the rural. Approximate 7% percentage of adolescents had suicidal ideation attempt in case of urban and rural region and similarly, there was no gender difference noted.

Substance use

Was measured by fourteen items related to lifetime and current use of tobacco and alcohol

Smoking

It is revealed that either casual or compulsive smoking is reported by about one third of the males. Nearly every tenth of the urban male was a regular smoker, while the comparable rural figure was 6%. 41.5% and 33.9% students of age group of 16-17yrs and 18-19yrs respectively were smoked in past 30 days. The very meager proportions of females who smoked in last thirty days were found to be similar between rural and urban areas.

Tobacco chewing

It appears from the table that rural males (34.12%) are significantly more affected with the habit of chewing or snuffing tobacco than their urban counterparts (25.24%) while the trend is just reverse in case of females (16.93% vs. 23.79%).

Alcohol

Out of those males who had had alcohol (12.6% urban and 14.3% rural) majority were occasional consumers taking alcohol in one to nine times in their lifetime. The practice was even meager among the females.

Physical health and related behaviour

Urban females were detected to be most sedentary in habit (30.4%) and less than one fifth (17.6%) undertake daily physical activity. More than a fifth (20.8%) of urban males also did not practise any physical work. Rural males and females; expectedly were more active than their comparative groups. Sports activity was found to be common only in case of rural males (65.5%); only 39.4% of urban males were involved in such activity.

Sexual activity

Sexual activity was almost same in urban and rural males as well as in females. Pre-marital sexual intercourse was to be more common in male adolescents compare with females. Most of them had it after the age of 16 yrs. multiple sex partners was reported by 0.9% male students. Barrier method practice was found to be more common.

DISCUSSION

Magnitude

The magnitude of health risk behavior was assessed by various domains. The prevalence of students not using seat belts for atleast once in their lifetime was 35.16% and the other aspect that not to use mobile phone while cycling was 63.5%. This domain needs more research in Indian context. Higher prevalence of other health risk behaviors like feeling sad or hopeless, smoking behavior and sexual behavior were reported by Springer *et al*. [5]. A higher percentage of our study population took junk foods, e.g., drinking carbonated water: 43.10% and having fried foods: 66.09%. The overall higher prevalence of overweight (13.43%) and obesity (10.27%) was detected in the present study than reported by other Indian study [11]. Sedentary life styles led by our respondents were 17.04%. Not only that, more than half of adolescent students spend their time by watching television (57.34%) and playing video games (55.63%) at least one hour in average school going days. These domains also need further studies.

Location of school

The proportion of carrying weapon was much higher in rural adolescence (20.2%) than urban males (13.2%). But reverse trend was observed in case of physical fight like other studies [5, 7]. Present study has also reported grave risk of physical fight in case of urban adolescence. Finding similar with the study of Springer *et al*. [5] this study shows higher prevalence

of addictive and the suicidal behavior in urban students.

Present study shows more of urban adolescence is involved in sexual behavior. Finding does not match with other studies [5, 7, 12].

Age

Present study shows higher prevalence of smoking and drinking in older adolescence (33%). Same findings are reported from other studies [5, 7]. More accessibility, less parental control, peer pressure, exposure to stressful situation and attraction to the mass media might be the reason. Higher prevalence of sadness and suicidal behavior was found in the age group of 16-17 years, may be because of academic pressure of board exams; whereas K. Mukhopadhyay *et al*. [12] and Sharma *et al*. [13] found significantly higher prevalence of sadness and suicidal behavior among older adolescence. Exposure to sexual intercourse was higher among older adolescence across the globe including the present study.

Gender

Present study has reported that boys were more likely to be involved in aggressive behavior, addictive behavior and sexual risk behavior. But in case of girls, they were more likely to be sad and had suicidal ideation attempt. This findings does not differ from other studies [5, 7, 12]. Present study has assessed important domain of nutrition and physical activity in which girls has shown to be worst in eating foods, salads and green leafy vegetables and they were the only one who show sedentary lifestyle.

This habit of not eating healthy food items is adopted by adolescence very easily as the junk food like fast food items and cold drinks are easily available in nearby counters. Sedentary life style is becoming more common because of more attraction of adolescent towards watching television, playing with video games and computers. These important domains need more research.

Socioeconomic status

In consistence with other national and international studies, the present study show higher rates of substance use and sexual activity by low SES adolescents. A literature review observed that low SES is associated with poor adopting functioning and increased likelihood of aggressive and suicidal behaviors.

Limitation

Social desirability bias and peer pressure bias are two well-known bias in any risk behavior assessment through self-administered questionnaire, and that too, in school setting. Several individual and family related variables, which might act as effect modifier or confounder on adolescents'risk behavior, were not considered in the study.

CONCLUSION

Family and school contexts as well as individual characteristics are associated with health and risky behaviors in adolescents. The results should assist health and social service providers, educators, and others in taking the first steps to diminish risk factors and enhance protective factors for our young people.

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