



Assessment of the magnitude of behavioural risk factors among school going adolescents of Kashmir Valley: A cross sectional study

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Abstract

Background: Adolescents are one sixth of the world's population and account for 6% of the world's global burden of disease and injury. The unique health issues associated with adolescence have been little understood and, in some cases,, ignored. Adolescence is a period when many risk or protective behaviours start or are consolidated which have major effects on future adult health. Examples include diet and physical activity, substance use and sexual risk behaviours.

Objectives: i) To assess the magnitude of various behavioural risk factors among school going adolescents.

Methodology: A cross sectional study design was adopted and the study was conducted in a total of 8 schools. 614 students in the age group of 10-19 years (adolescents) selected from high and higher secondary schools (both government and private) were included in the study. Data was collected using modified WHO Global School Based Health Survey Questionnaire which includes questions on various behavioural risk factors like dietary behaviours, mental health, physical activity, substance abuse and violence. Weight and height of the adolescents were also taken to assess their nutritional status.

Results: In the present study 45% of the participants resorted to diet restriction. 32.9% of the participants had taken fast food in the last one week. 19.2% of the adolescents felt lonely either always or most of the time in the last 12 months. 18.2.5% of the participants had disturbed sleep either always or most of the time in the last 12 months and 8.8% of them reported having had suicidal thoughts in the past 12 months. 3.9% of the participants had ever smoked cigarettes, 3.9% had ever consumed alcohol & 1.8% had ever used drugs. 28.3% of the adolescents reported having been physically attacked, 25.6% reported having indulged in a physical fight and 12.5% reported having been bullied.29.5% had a screen time of 3 hours or more. Also 36.5% of the participants reported that there was no slot for physical activity in the school time table.

Conclusion: A considerable proportion of the adolescents were undernourished. It was also observed that behavioral risk factors like unhealthy eating habits and lack of physical activity were quite prevalent in the adolescents. Some of the adolescents were also indulged in substance abuse while others felt lonely, had disturbed sleep or had suicidal thoughts. Health education on all these behavioural risk factors should be given in the schools in order to improve the health of the adolescents. Incorporation of life skills education in the school curriculum will help in improving the mental health of the adolescents.

Keywords: adolescents, behavioural risk factors, substance abuse, mental health, violence

1. Introduction

Adolescents are not simply old children or young adults. Adolescents are one sixth of the world's population and account for 6% of the world's global burden of disease and injury ^[1].

In 2015, more than 1.2 million adolescents died. More than 3000 adolescents die every day from largely preventable causes such as unintentional injuries; violence; sexual and reproductive health problems, including HIV; communicable diseases such as acute respiratory infections and diarrheal diseases; non communicable diseases, poor nutrition, substance use and suicide. Even more suffer from ill-health due to these causes ^[1].

Adolescence is also a period when many risk or protective behaviours start or are consolidated. Examples include diet and physical activity, substance use and sexual risk behaviours. These will have major effects on future adult health. For 10–14-year

olds, unsafe water, unsafe sanitation and inadequate hand washing are major health risks for both boys and girls ^[13]. For 15–19-year olds, health risk factors such as alcohol and tobacco use, unsafe sex and drug use also become very important, along with intimate partner violence and occupational hazards. For years, the unique health issues associated with adolescence have been little understood or, in some cases, ignored ^[1]. Keeping in view the above facts about adolescent health, the present study was conducted to assess the risk or protective behaviours among school going adolescents using the school-based student health survey questionnaire. The Global school-based student health survey questionnaire is a self-administered questionnaire to obtain data on young people's health behaviour and protective factors related to the leading causes of morbidity and mortality among children and adults worldwide ^[2]

2. Objectives

To assess the magnitude of various behavioural risk factors among school going adolescents.

3. Methodology

A cross sectional study design was adopted and the study was conducted in a total of 8 schools which were randomly selected from two districts (one rural and one urban) of Kashmir. The present study was conducted for a period of 2 months. 614 students in the age group of 10-19 years (adolescents) selected from high and higher secondary schools (both government and private) were included in the study. Students who were present on the day of the data collection and gave consent to be a part of the study were included. Data was collected using modified WHO Global School Based Health Survey Questionnaire which includes questions on various behavioural risk factors like dietary behaviours, mental health, physical activity, substance abuse and violence. Weight and height of the adolescents were also taken to assess their nutritional status. Proper permission was taken from Director School Education, Kashmir. Confidentiality was maintained at all times and students in need of medical attention were appropriately referred.

3. Results

Table 1: General characteristics of the study participants

	Frequency	Percent
Age		
10-13 years	10	1.6
14-16 years	322	52.4
17-19 years	282	45.9
Gender		
Male	314	51.1
Female	300	48.9
Location of school		
Rural	320	52.1
Urban	294	47.9
Type of school		
Government	526	85.7
Private	88	14.3

Table 1: A total of 614 adolescents were included in the study. 52.4% of the adolescents belonged to 14-16 years age group followed by 17-19 years (45.9%) and 1.6% in the 10-13 years age

group. There were almost equal number of males and females (51.1% and 48.9% respectively) and adolescents from rural and urban areas (52.1% and 47.9% respectively). 85.7% of the adolescents were from government schools while as only 14.3% were from private schools.

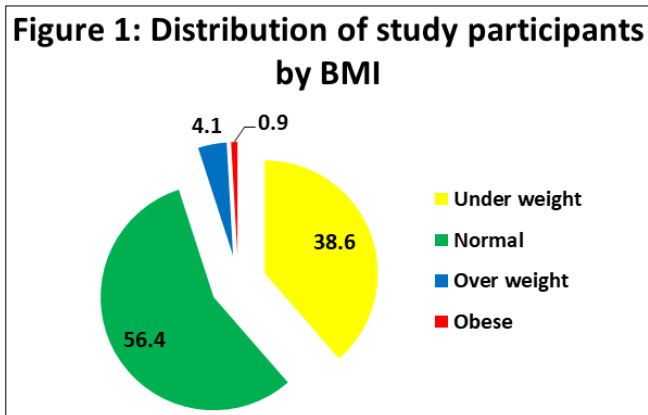


Fig 1: Out of the 614 adolescents 38.65 were underweight, 4.1% were overweight and 0.9% were obese.

Table 2: Distribution of study participants by Dietary Behavior

	Gender				Total		P value
	Male		Female		frequency	percent	
	frequency	percent	frequency	percent	frequency	percent	
Resort to diet restriction							
Yes	135	43.0%	141	47.0%	276	45.0%	0.33
No	179	57.0%	159	53.0%	338	55.0%	
Taken fast food last week							
Yes	117	37.3%	85	28.3%	202	32.9%	0.01
No	197	62.7%	215	71.7%	412	67.1%	
Carry lunch pack							
Yes	132	42.0%	175	58.3%	307	50.0%	<0.001
No	182	58.0%	125	41.7%	307	50.0%	

Table 2: In the present study 45% of the participants resorted to diet restriction. More females (47%) than males (43%) resorted to this practice. 32.9% of the participants had taken fast food in the last one week. Significantly greater number of males had taken fast food in the last one week (p value 0.01). 42% of the females & 58% of males did not carry a lunch pack to school. In comparison to males more females carried lunch packs to school and the difference was statistically significant (p value <0.001).

Table 3: Mental Health of study participants

	Gender				Total		p value
	Male		Female		frequency	percent	
	Frequency	percent	frequency	percent	frequency	percent	
During the past 12 months felt lonely							
Never	75	23.9%	75	25.0%	150	24.4%	0.001
Rarely	12	3.8%	24	8.0%	36	5.9%	
Sometimes	149	47.5%	161	53.7%	310	50.5%	
Most of the time	49	15.6%	28	9.3%	77	12.5%	
Always	29	9.2%	12	4.0%	41	6.7%	
Unable to sleep during last 12 months							
Never	86	27.4%	85	28.3%	171	27.9%	0.707
Rarely	38	12.1%	29	9.7%	67	10.9%	
Sometimes	129	41.1%	135	45.0%	264	43.0%	

Most of the time	38	12.1%	34	11.3%	72	11.7%	
Always	23	7.3%	17	5.7%	40	6.5%	
Had suicidal thoughts during past 12 months							
Yes	27	8.6%	27	9.0%	54	8.8%	0.86
No	287	91.4%	273	91.0%	560	91.2%	

Table 3: 19.2% of the study participants felt lonely either always or most of the time in the last 12 months. The differences in the responses by males and females was statistically significant (p value 0.001). 18.2.5% of the participants had disturbed sleep

either always or most of the time in the last 12 months. 8.8% of the participants reported having had suicidal thoughts in the past 12 months.

Table 4: Distribution of study participants by Tobacco/Substance Use

	Gender				Total		p value
	Males		Females		frequency	percent	
Ever smoked cigarette	frequency	percent	frequency	percent	frequency	percent	<0.001
Yes	22	7%	2	0.66%	24	3.9%	
No	292	92.9%	298	99.3%	590	96.1%	
Ever Consumed Alcohol							
Yes	22	7.0%	2	0.7%	24	3.9%	<0.001
No	292	93.0%	298	99.3%	590	96.1%	
Ever Used Drugs							
Yes	9	2.9%	2	0.7%	11	1.8%	0.03
No	305	97.1%	298	99.3%	603	98.2%	

Table 4: 3.9% of the participants had ever smoked cigarettes, 3.9% had ever consumed alcohol & 1.8% had ever used drugs. All forms of substance abuse were significantly more common

among males (p values of <0.001, <0.001 and 0.03 for cigarettes, alcohol and drugs respectively).

Table 5: Violence among the study participants

	frequency	percent
Physically attacked/past 12 months		
Yes	174	28.3%
No	440	71.7%
Indulged in physical fight/past 12 months		
Yes	157	25.6%
No	457	74.4%
Bullied during past 30 days		
Yes	77	12.5%
No	537	87.5%

Table 5: 28.3% of the participants reported having been physically attacked, 25.6% reported having indulged in a

physical fight and 12.5% reported having been bullied.

Table 6: Distribution of study participants by Physical Activity

	Gender				Total		p value
	Male		Female		Total		
	frequency	percent	frequency	percent	frequency	percent	
Time spend watching television/playing computer games/day							
< 3 hrs	214	68.2%	219	73.0%	433	70.5%	0.187
>= 3 hrs	100	31.8%	81	27.0%	181	29.5%	
Slot for physical activity in school time table							
1-3 times a week	92	29.3%	67	22.3%	159	25.9%	0.118
Almost daily	116	36.9%	115	38.3%	231	37.6%	
Never	106	33.8%	118	39.3%	224	36.5%	

Table 6: 51.5% of the participants were physically active as per guidelines [3] and 29.5% had a screen time of 3 hours or more. Also 36.5% of the participants reported that there was no slot for physical activity in the school time table.

Regarding sanitation and hygiene, 99.2% of the adolescents reported having safe drinking water at school and almost all adolescents (99.5%) reported that they had sanitary latrine facility available within the school premises. However, only 72% of the adolescents used soap when washing hands. Only 8.5% of

the adolescents had received sex education at school and 9.1% had received sex education at home. Education about menstrual hygiene had been received by most of the adolescent girls at home (70.6%).

4. Discussion

In our study out of the 614 adolescents 38.65 were underweight. Similar prevalence of thinness among adolescent girls in Kashmir was also reported by Ali D *et al.* (35.7%)^[4]. A much lower prevalence of underweight was reported by SP Reddy *et al.* among adolescents in South Africa (9%)^[5]. In the present study 4.1% of the adolescents were overweight and 0.9% were obese. Ali D *et al.* reported 7.2% adolescent girls to be overweight while as SP Reddy *et al.* reported 16.9% of adolescents to be overweight and 4% to be obese^[4, 5]. In the present study 32.9% of the participants had taken fast food in the last one week. In a study conducted by Rathi N *et al.* in Kolkatta among 14-16-year-old adolescents reported that 70% of the adolescents had 3 or more servings of fast foods a day before^[6]. Al Faris NA *et al.* also reported that 79.1% of the adolescents consumed fast foods at least once a week^[7]. In the present study 6.5% of the participants always had disturbed sleep while 11.75% of them had disturbed sleep most of the time in the last 12 months. A higher number of adolescents reported having disturbed sleep in a study conducted by GuoLan *et al.* among Chinese adolescents (39.6%)^[8]. 8.8% of the participants in our study reported having had suicidal thoughts in the past 12 months. A higher number of adolescents reported having suicidal ideation in studies conducted by Canbaz S *et al.* in Turkey and Amara T *et al.* in Ethiopia (17.9% and 22.5% respectively)^[9, 10]. 3.9% of the participants had ever smoked cigarettes, 3.9% had ever consumed alcohol & 1.8% had ever used drugs. Almost similar results were reported by Raphael L *et al.* in Kerala 4.72% adolescents had ever used cigarettes/ bidis, 5.7% had ever consumed alcohol and 2.98% had ever used drugs^[11]. Higher numbers were reported by Kaul RR *et al.* among adolescents in Srinagar, Kashmir (12.8% among males and 8.2% among females)^[12] and by Daniel LT *et al.* in Delhi (55.6%)^[13]. In the present study it was seen that all forms of substance abuse were significantly more common among males. Raphael L *et al.* in Kerala also reported significantly higher prevalence of substance abuse among males than females^[11]. In our study, 25.6% of the participants reported having indulged in a physical fight and 12.5% reported having been bullied. Lesser number of adolescents reported having indulged in a physical fight in a study conducted by Sousa S *et al.* in Portugal (7.9%)^[14]. In a study conducted by Jing Wang *et al.* among US adolescents 12.8% of the adolescents reported having been bullied which was similar to the findings of our study^[15]. In the present study all forms of violence was seen more among boys. Similar observations were reported by, Sousa S *et al.* in Portugal, Jing Wang *et al.* in US and by Golshiri P in Iran^[14, 15, 16]. 51.5% of the participants in the present study were physically active as per guidelines. Similar results were reported in a study conducted by Filho VCB in Brazil where 49.5% of adolescents had sufficient physical activity^[17]. A higher number of adolescents (96.7%) were reported to be physically active for more than 1 hour everyday by Prajapati J in Gujarat^[18]. In our study 29.5% had a screen time of 3 hours or more. In a study conducted by Wang H *et al.* in Zhejiang, China it was seen that

42.4% of the students had a screen time of 2 hours or more^[15].

5. Conclusion & Recommendations

As considerable proportion of the adolescents were undernourished, education on the importance of adequate and balanced diet should be included in the school curriculum. It was observed that behavioral risk factors like unhealthy eating habits and lack of physical activity were quite prevalent in the adolescents. This could have adverse consequences for the health of these adolescents, thus calling for a preventive action. A 30-45 minutes of physical activity should be made compulsory in the school time table on daily basis. Sale of junk food in the school canteens should be discouraged. Instead healthy foods like fruits, unprocessed cereal based diets, milk etc. should be kept available. Some of the adolescents were also indulged in substance abuse. Thus Anti-tobacco awareness activities should be started in the school itself. Regarding mental health life skills education can be incorporated in the school curriculum which will help the adolescents to cope with the stresses of life and improve their mental health. The availability of safe drinking water and sanitary wash room facilities in the schools must be ensured.

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