Original Research Article

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Life style associated risk factors in teenage students, in Miraj town: a cross sectional descriptive study

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ABSTRACT

Background: The transition from childhood to adulthood may be referred to as 'adolescence' or 'teenage'. Adolescence is not only a time of opportunity but also of vulnerability to risky behavior, which can have life-long consequences, especially on education, career and various aspects of health. Behavior patterns that influence health in adulthood have their origin in adolescence. Considering such factors, the present study had been undertaken with the objectives to study dietary habits and nutritional status of study population, to study knowledge, attitude & practices of study population regarding risk factors and to study the significant behavioral deviation including drug abuse.

Methods: Cross sectional, descriptive study was being conducted in selected High schools and Junior Colleges in the Miraj town. The method of data collection was the pre-designed, pre-tested proforma. The data was analyzed by using SPSS.

Results: Overall prevalence of under-nutrition was 49.83%. Prevalence of overweight and obesity was 3.68% and 1.49% respectively. Overall prevalence of overweight and obesity was more in participants with habit of eating outside home. Various forms of tobacco, alcohol and pan masala were used by 58.9% of the family members / friends / peer groups of the study participants.

Conclusions: The students of age group 18-19 year were more likely to have risk taking behavior than students of age-group 13-17 year.

Keywords: Adolescence, Lifestyle, Risk factors

INTRODUCTION

The transition from childhood to adulthood may be referred to as 'adolescence' or 'teenage'. It is a period of dramatic growth and development. As a child evolves into adult, a complex myriad of physiologic as well as psychologic alteration takes place.² Adolescence is the period of acquiring new capacities. It is not only a time of opportunity but also of vulnerability to risky behavior, which can have life-long consequences, especially on education, career and various aspects of health.³ Adolescence is a period of rapid development when

young people are faced with many new situations. This presents not only the opportunities for progress but also the risks to health and well-being. As the adolescents face the challenges of the second decade of life, a little help can go a long way in channeling their energy towards positive and productive paths. Neglect of adolescents can lead to problems, both immediately and in the years ahead.⁴ Adolescents form prospective human resource for the society. The period of transition from childhood to adulthood is hazardous for adolescent health, because they often develop behavioral problems and improper lifestyle changes in absence of proper guidance and counseling, which has its reflection in the form of various diseases in adult life.⁵

The reason - why this period of life should receive greater attention from the health community is because, the behavior patterns that influence health in adulthood have their origin in adolescence.²

Considering such factors, the present study had been undertaken to observe the 'lifestyle associated risk factors' in teenage students.

Aim and objectives

- To study dietary habits, nutritional status and it's correlates in study population.
- To study the significant behavioral deviation including drug abuse.

METHODS

A cross sectional, descriptive study was carried out in selected High schools and Junior Colleges in the Miraj Town during January 2008 to December 2008. There are

total 25 High schools and 3 Junior colleges. Out of these every 3rd institution was selected by systematic random sampling as per the guidance from the statistician. The students from these educational institutes of both the genders in the age group of 13+ to 19+ years were included in the study. The teen-agers, who were willing to participate in the study, were included with the due permission from their teachers / institutional authorities. Total 3420 students were studied from the selected High schools & Junior College. The method of data collection was the pre-designed, pre-tested Proforma. Lifestyle associated risk factors studied were dietary habits, physical activity and substance use.

RESULTS

3420 eligible students were surveyed, after resorting to the requisite inclusion & exclusion criteria; and according to the random sampling methods already quoted in the methodology.

In all the three age groups, number of students was more or less evenly distributed, with marginally more number in the age group of below 15 years.

Table 1: Age and gender-wise habit of eating food outside home by 3420 participants.*

Sr.	Age	Gender	Frequency of eatin	Frequency of eating food outside home		Total	P value by χ²test
No.	group	Gender	<2 times in week	2-4 times in week	>4 times in week		
	13+ to 15	M	261 (35.08)	303 (40.72)	180 (24.19)	744	
1		F	317 (57.42)	207 (37.5)	28 (5.25)	552	< 0.001
	years	T	578 (44.59)	510 (39.35)	208 (16.04)	1296	
M 146 (23.85) 258 (42.15) 208 (33.98)	208 (33.98)	612					
2	15+ to 17	F	193 (49.30)	175 (40.50)	64 (14.81)	432	< 0.001
	years	T	339 (32.47)	433 (41.47)	272 (26.05)	1044	
	17+ to 19	M	113 (17.19)	301 (45.81)	243 (36.98)	657	
3		F	160 (37.82)	189 (44.68)	74 (17.49)	423	< 0.001
	years	T	273(25.27)	490 (29.35)	317 (29.35)	1080	
		M	520 (25.83)	862 (42.82)	631 (31.34)	2013	
4	Total	F	670 (47.61)	571 (40.58)	166 (11.79)	1407	< 0.001
		T	1190 (34.79)	1433 (41.90)	797 (23.30)	3420	

^{*}Parentheses show group-wise percentages.

Table 2: Gender-wise values of mean, median & mode for weight, height and BMI.

Parameter	Measure	Boys	Girls	Total
	Mean \pm SD	47.62 ± 7.83	43.73 ± 7.50	46.02 ± 7.93
Weight in Kg	Median	48	44	46
	Mode	53	45	45
	Mean \pm SD	157.71 ± 7.36	154.03 ± 6.87	156.20 ± 7.39
Height in cms	Median	158	154	156
	Mode	157	150	154
	Mean \pm SD	19.14 ± 2.97	18.44 ±3.06	18.85 ± 3.03
BMI	Median	19.04	18.17	18.67
	Mode	19.83	19.81	18.73

Above Table 1 shows that frequency of eating outside the home increased from early adolescence (16.04%) to late adolescence (29.35%). In all ages, tendency to eat

frequently outside the home was significantly higher in males.

Above Table 2 indicates that, overall mean weight, mean height and mean BMI were more in boys as compared to the girls. These values increased with increasing age in both the genders.

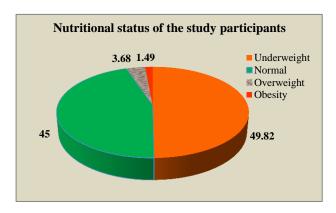


Figure 1: Nutritional status of study participants.

The figure shows that, overall prevalence of undernutrition was 49.82%. The prevalence of under nutrition was more in males accounting for 51.71% compared to females (47.12%).

The overall prevalence of overweight and obesity was 3.68% and 1.49% respectively.

Table 3 indicates that, overall prevalence of overweight and obesity was more in participants with habit of eating outside home ≥2 times / week accounting for 69.84% and 72.55% respectively.

Table 4 indicates that, overall habit of doing physical activity was seen in 81.96% study participants. Males were involved more (93.54%) compared to females (65.39%) in doing physical activity. Involvement in physical activity increased from early adolescence to late adolescence in boys, while in girls it was in reverse fashion which shows statistically significant difference.

Table 3: Co-relation of overweight and obesity with the habit of eating outside home.*

Esting food		BMI				
Eating food outside	Overweight ¹		Obese ²		Total	
outside	Male	Female	Male	Female	Male	Female
<2	12 (17.1)	26 (46.4)	3 (12.5)	11 (40.7)	15 (16.0)	37 (44.6)
≥2	58 (82.9)	30 (53.6)	21 (87.5)	16 (59.3)	79 (84.0)	46 (55.4)
Total	70 (100.0)	56 (100.0)	24 (100.0)	27 (100.0)	94 (100.0)	83 (100.0)

^{*}Parentheses show group-wise percentages; $^{1}\chi^{2} = 12.67$, d.f.=1, p\le 0.001 $^{2}\chi^{2} = 5.08$, d.f.=1, p=0.024.

Table 4: Age and gender wise habit of physical activity in the 3420 participants.*

Ago (in rooms)	Candon			
Age (in years)	Gender	Involved	Not Involved	Total
		[N = 2803]	[N = 617]	[N = 3420]
	M	675 (90.73)	69 (9.27)	744 (100.0)
13 to 15 ¹	F	397 (71.92)	155 (28.08)	552 (100.0)
	T	1072 (82.71)	224 (17.28)	1296 (100.0)
	M	584 (95.42)	28 (4.58)	612 (100.0)
15+ to 17^2	F	293 (67.82)	139 (32.18)	432 (100.0)
	T	877 (84.01)	167 (15.99)	1044 (100.0)
17+ to 19 ³	M	624 (94.98)	33 (5.02)	657 (100.0)
	F	230 (54.37)	193 (45.63)	423 (100.0)
	T	854 (79.07)	226 (20.93)	1080 (100.0)
	M	1883 (93.54)	130 (6.46)	2013 (100.0)
Total	F	920 (65.39)	487 (34.61)	1407 (100.0)
	T	2803 (81.96)	617 (18.04)	3420 (100.0)

(Parentheses shows group-wise percentage); M: Male F: Female; $^{1}\chi^{2}=78.387$, d.f.= 1, p<0.001; $^{2}\chi^{2}=143.569$, d.f.=1, p<0.001; $^{3}\chi^{2}=256.385$, d.f.=1, p<0.001.

Table 5 indicates that, the most common reason given by the participants for the involvement in physical activity was to remain physically fit followed by, to look smart. Few students gave the reasons like parent's advice and mimicking the friends doing exercise.

Table 6 shows that, there was an inverse correlation between increasing degree of physical activity and prevalence of overweight and obesity i.e. prevalence of overweight and obesity was more in participants involved in light activity compared to vigorous activity.

Table 8 indicates that, the proportion of the participants who were aware regarding hazards of tobacco & alcohol use increased with advancing age. Overall awareness was observed in 92.3% study participants.

Table 5: Reasons for involvement in physical activity.*

Reason for doing physical		Total	
exercise	Male	Female	Total
To remain physically fit	1481 (78.65)	654 (71.08)	2135 (76.16)
To look smart	443 (23.52)	349 (37.93)	792 (28.25)
As friends are doing	112 (5.94)	42 (4.56)	154 (5.49)
Parent's advice	45 (2.38)	17 (1.84)	62 (2.21)

^{*} Multiple responses; ** Participants involved in the physical activity.

Table 6: Co-relation of overweight & obesity with the physical activity.*

			BMI			
Physical activity	Overw	eight ¹	Obe	se ²	Total	
	Male	Female	Male	Female	Male	Female
Light activity	37 (52.9)	34 (60.7)	14 (58.3)	15 (55.6)	51 (54.3)	49 (59.0)
Moderate activity	22 (31.4)	16 (28.6)	8 (33.3)	9 (33.3)	30 (31.9)	25 (30.1)
Vigorous activity	11 (15.7)	6 (10.7)	2 (8.3)	3 (11.1)	13 (13.8)	9 (10.8)
Total	70 (100.0)	56 (100.0)	24 (100.0)	27 (100.0)	94 (100.0)	83 (100.0)

^{*}Parentheses show group-wise percentages; $^{1}\chi^{2}=1.002$, d.f.=2, p= 0.606; $^{2}\chi^{2}=0.117$, d.f.=2, p=0.943.

Table 7: Use of tobacco, alcohol and pan masala by study participants.

	Age in years				D volvo	
		13+ to 15	15+ to 17	17+ to 19 +	Total	P value
Tobacco ¹						
1	Not used	1260 (97.2)	948 (90.8)	903 (83.6)	3111 (91.0)	
2	Ever used	27 (2.1)	63 (6.0)	132 (12.2)	222 (6.5)	< 0.001
3	Regular used	9 (0.7)	33 (3.2)	45 (4.2)	87 (2.5)	<0.001
4	Total	1296 (100.0)	1044 (100.0)	1080 (100.0)	3420 (100.0)	
Alcohol ²						
1	Not used	1296 (100.0)	1002 (96.0)	965 (89.4)	3263 (95.4)	
2	Ever used	0 (0.0)	42 (4.0)	101 (9.4)	143 (4.2)	< 0.001
3	Regular used	0 (0.0)	0 (0.0)	14 (1.3)	14 (0.4)	<0.001
4	Total	1296 (100.0)	1044 (100.0)	1080 (100.0)	3420 (100.0)	
Pan masala ³	3					
1	Not used	1083 (83.6)	625 (59.9)	574 (53.1)	2282 (66.7)	
2	Ever used	167 (12.9)	358 (34.3)	351 (32.5)	876 (25.6)	< 0.001
3	Regular used	46 (3.5)	61 (5.8)	155 (14.4)	262 (7.7)	<0.001
4	Total	1296 (100.0)	1044 (100.0)	1080 (100.0)	3420 (100.0)	

Parentheses show group-wise percentages. $^{1}\chi^{2} = 135.94$, d.f. = 4, p \leq 0.001; $^{2}\chi^{2} = 160.69$, d.f.=4, p \leq 0.001, $^{3}\chi^{2} = 321.12$, d.f.=4, p=<0.001.

Table 8: Awareness about hazards of tobacco and alcohol use (n=3420).

Aware about		— Total		
hazards	13+ to 15	15+ to 17	17+ to 19 +	Total
Yes	1089 (84.0)	987 (94.5)	1080 (100.0)	3156 (92.3)
No	207 (16.0)	57 (5.5)	0 (0.0)	264 (7.7)
Total	1296 (100.0)	1044 (100.0)	1080 (100.0)	3420 (100.0)

^{*}Parentheses show group-wise percentages. $\chi^2=221.742$, d.f.=2, p \leq 0.001.

DISCUSSION

It was observed that mean weight of boys & girls was (47.62 ± 7.83) and (43.73 ± 7.50) & mean height was (157.71 ± 7.36) and (154.03 ± 6.87) respectively.

Chakrabarty et al conducted a cross sectional study at (Khurda and Cuttack district) Orissa to assess the growth and nutritional status of 328 adolescents aged 10-18 years. It was observed that, the mean weight of boys (40.96 kg) and girls (38.42 kg), mean Height of boys (153.01 cm) and girls (146.26 cm).

Overall prevalence of under-nutrition was 49.82%. Prevalence of overweight and obesity was 3.68% and 1.49% respectively.

Deshmukh et al in their cross sectional study to assess nutritional status of 746 adolescents (both genders) in Rural Wardha, observed that, overall 53.8% of the adolescents were thin; 44% were normal, and 2.2% were overweight.⁷

Overall prevalence of overweight and obesity was more in participants with habit of eating outside home ≥ 2 times / week accounting for 69.84% and 72.55% respectively.

Aggarwal et al observed that, the incidence of obesity/overweight was found to be significantly higher in those adolescents who ate meals outside the home.⁸

Overall habit of doing adequate physical activity was seen in 81.96% participants. Males were involved more (93.54%) as compared to females (65.39%) in doing physical activity.

Singh et al observed that, Males (45.5%) were seen to be more physically active and engaged in sports compared to females (30.7%), which was substantially lower than in the present study.⁹

Ramchandran et al reported the higher prevalence of overweight in lower tertiles of physical activity. ¹⁰

Singh, Gupta conducted a cross-sectional study to determine prevalence of tobacco use and awareness of risks among school children aged 13-18 years (both genders) in Jaipur. It was observed that, among the children who used tobacco, its use was present in family of 86.4% boys. There was a significant influence of smoking or tobacco use in family members on its prevalence in children.

The proportion of the participants having habit of using tobacco, alcohol and pan masala showed an increasing trend with advancing age. Overall use [ever use + regular use] of tobacco products was observed in 9.0%, alcohol in 4.6% and pan masala in 33.3% of the study participants.

Kumar, Prabhu et al conducted a cross-sectional study to assess prevalence of drug abuse among male youths (15-24years) in Tirupati, A.P. ¹² In this study, the current use of tobacco and alcohol was found to be 12.7% and 5.3% respectively.

CONCLUSION

Total sample size was 3420 comprising 59% males and 41% females in the age group of 13 + to 19 + years.

Frequency of eating food outside home was observed more in males and in late adolescents as compared to females & early adolescent age group.

Overall prevalence of under-nutrition was 49.82%. The prevalence of undernutrition was more in males accounting for 51.71% compared to females (47.12%). The overall prevalence of overweight and obesity was 3.68% and 1.49% respectively.

Overall prevalence of overweight and obesity was more in participants with habit of eating outside home ≥ 2 times / week accounting for 69.84% and 72.55%.

Overall habit of doing adequate physical activity was seen in 81.96% participants. Males were involved more (93.54%) as compared to females (65.39%) in doing physical activity.

Prevalence of overweight and obesity was more in participants involved in light activity as compared to those doing vigorous activity.

Overall use [ever use + regular use] of tobacco products was observed in 9.0%, alcohol in 4.6% and pan masala in 33.3% of the study participants. Ever use of the tobacco, alcohol, and pan masala was more (and statistically significant) as compared to the regular use.

Awareness regarding hazards of tobacco & alcohol use increased with advancing age. Overall awareness regarding hazards of the substance use was observed in 92.3% study participants.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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