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Community Medicine

ASSESSMENT OF ADOLESCENT HEALTH USING GSHS SCALE IN URBAN FIELD PRACTICE AREA OF SSMC TUMKUR

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ABSTRACT **Background:** According to WHO, adolescent is any person between ages 10 and 19. Adolescence is a period of transition between childhood and adulthood. During this period an adolescent encompasses physical, sexual, cognitive, social, and emotional changes. This study aims at assessing Adolescent Health using GSHS Scale. **Objectives:** To assess health and the factors influencing adolescent health among adolescents (13-19 years) of Tumkur City. **Methodology:** This cross-sectional study was conducted in Urban Field Practice Area of Sri Siddhartha Medical College, Tumkur, Karnataka from Jan 2022 to May 2022. A total of 204 Adolescents of age group between 13 and 19 was taken for study using GSHS scale. **Results:** Most of the students (37.8%) don't skip their breakfast and have it regularly. Many (41%) of the adolescents used to watch advertisements about carbonated soft drinks and were aware of it. When we studied association between regular physical activity and weight reduction, we got statistically significant results (p = 0.001). Though most of them (76.6%) doesn't smoke, 3.8% of them said they would smoke a cigarette if offered by friend. It was seen that there was no significant association between those who were educated on importance on physical activity and those who did daily exercises. On an average (31.6%) the adolescents were getting 6-8 hours of sleep during normal school days. **Conclusion:** To Promote Healthy Ageing Adolescents should be aware of good habits and have Knowledge about Healthy lifestyle.

KEYWORDS : Adolescence, GSHS Scale, Adolescent Health

INTRODUCTION

The period between childhood and maturity, between the ages of 10 and 19, is known as adolescence. It is an important time in human development that lays the foundation for long-term health.[1]

Teenagers develop physically, mentally, and emotionally quickly. Their emotions, thoughts, decisions, interactions with people, and interactions with their surroundings are all impacted by this.[1]

As a result of their increased anxiety and anticipation brought on by these changes, people begin to act in unsafe ways that endanger their present and future health. In adults, diseases or habits that begin in adolescence are responsible for over two thirds of early deaths and one third of the entire burden of disease.[2]

There are 253 million adolescents in the age group 10-19 years in India. This age group comprises of individuals in a transient phase of life requiring nutrition, education, counselling and guidance to ensure their development into healthy adults. They are susceptible to several preventable and treatable health problems, like early & unintended pregnancy, unsafe sex leading to STI/HIV/AIDS, nutritional disorders like malnutrition, anemia & overweight, alcohol, tobacco and drug abuse, mental health concerns, injuries and violence.[3]

By providing the necessary building blocks for growth, development, and maintaining health status as nutrition is a significant factor of adolescent health. Teenagers have developed harmful eating habits, such as the consumption of flavored meals, carbonated soft drinks, and foods high in trans fatty acids and free sugars, due to modern lives and easy access to foods that provide energy. Cardiovascular and other non-communicable diseases develop earlier due to the health effects of these habits.[4]

There is strong evidence that, raised BMI during adolescence is associated with raised risk of developing hypertension and/or cardiovascular disease (CVD) as an adult and also there is a 12% increase in risk of developing CVD for each unit increase in BMI among adolescents. Undernutrition is also another important problem that needs to be addressed, according to national data 41.9% girls and 44.8% boys between 15-19 years are underweight (BMI <18.5) while 54% of girls and 29% of boys are anemic.[5]

In addition to inadequate nutrition, there is an increase in alcohol consumption and smoking cigarettes seen among the youth due to peer pressure or self-interest, causing rise in risk of early death from non-communicable diseases. As per the results of a large-scale survey conducted across India in 2021, majority of older adults between 45 and 59 years old consumed alcohol in the country. Teenagers made up an alarming 8.3 percent, despite minimum drinking age varying across some states in the country. It was also seen that about 17 percent of adults between the ages 30 and 44 years were smokers. Furthermore, over 16 percent of young adults smoked regularly in the year 2021.[6]

Teenagers are becoming less active globally due to increased access to cars, technology, and a lack of interest in outdoor activities. This is one of the factors contributing to rising rates of obesity and hypertension. India is ranked eighth with overall prevalence of insufficient physical activity in adolescents at 73.9 per cent.[7]

In the context of non-communicable diseases, care, and knowledge towards the reduction of exposure to major risk factors is critical and also in order to understand where we stand in the prevention and control of risk factors in medical education, the present study is undertaken.[3]

In India adolescents and young people aged 10-19 years, account for nearly one quarter of the total population. They deserve much needed attention as they hold the key to breaking entrenched cycles of poverty, inequity and deprivation.[3]

In this setting, the Global school-based Student Health Survey, GSHS is the basic tool for the decision making,with GSHS valid and reliable information can be obtained to create awareness among youth about the various risk factors of non-communicable diseases.

MATERIALS & METHODS

A cross-sectional study was conducted in the Urban Field Practice Area of Sri Siddhartha Medical College, Tumkur, Karnataka from January 2022 to May 2022 to assess health and the factors influencing adolescent health.

Study Participants were selected from the data base maintained in UHTC , A total of 417 (with an average prevalence of 15% to non-communicable disease) [8] adolescents aged between 13 and 19 were selected by simple random sampling and interviewed using a semi-structured questionnaire using GSHS Scale after obtaining consent from each participant.

Institutional Ethical clearance was taken before the study.

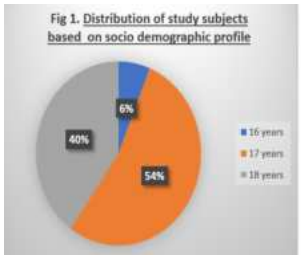
Categorical values are expressed in proportions. Chi-square test had been used for testing the association between the various domains, P-value less than 0.05 was taken as statistically significant.

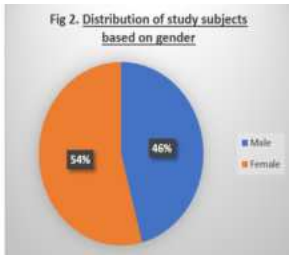
Statistical Analysis

Data collected was entered and analyzed using SPSS version 22.0. Statistical analysis was done using descriptive statistics like proportion. Chi-square test had been used for testing the association between the various domains, P-value less than 0.05 was taken as statistically significant.

RESULTS

Table 1. Distribution of Study Subjects Based on Socio Demographic Profile





In this study most of the study subjects were 17 years of age 112(53.6%) followed by 84 (40.2%) of them being 18 years of age. 113(54.1%) of the study subjects were females and 96(45.9%) were males.

Table 2. Distribution of study subjects based on Dietary Questionnaire

Ate breakfast in last 30 days			About their weight		
OPTIONS	FREQUENCY	PRECENTAGE	OPTIONS	FREQUENCY	PRECENTAGE
Never	16	7.7	Very underweight	14	6.7
Rarely	33	15.8	Slightly underweight	41	19.6
Sometimes	39	18.7	About the right weight	113	54.1
Most of the time	42	20.1	Slightly overweight	38	18.2
Always	79	37.8	Very overweight	3	1.4
Total	209	100	Total	209	100
Changes about the weight			Weight measurement in past 12 months		
No changes	73	34.9	YES	148	70.8
Lose weight	39	18.7	NO	61	29.2
Gain weight	50	23.9	Total	209	100
Stay the same	47	22.5			
Total	209	100			
Reason to skip breakfast			Any exercise to lose weight last 30 days		
I don't skip	81	38.8	YES	52	24.9
I have not time	37	17.7	NO	157	75.1
I can't eat early	17	8.1	Total	209	100
No food in home	9	4.3	YES	29	13.9
Others	65	31.1	NO	180	86.1
Total	209	100	Total	209	100
Any dietary changes to lose weight in last 30 days			Fasting >24 hrs. to lose weight		
YES	57	27.3	YES	33	15.8
NO	152	72.7	NO	176	84.2
Total	209	100	Total	209	100
Vomit or take laxative to lose weight			Exercise to gain weight		
YES	24	11.5	YES	34	16.3
NO	185	88.5	NO	175	83.7
Total	209	100	Total	209	100
Increased dietary habits to gain weight			Any medication without doctors to gain weight		
YES	48	23	YES	28	13.4
NO	161	77	NO	181	86.6
Total	209	100	Total	209	100
Getting lunch to school			Breakfast offered at school		
Never	61	29.2	Never	63	30.1
Rarely	23	11	Rarely	15	7.2
Sometimes	41	19.6	Sometimes	29	13.9
Most of the times	16	7.7	Most of the times	33	15.8
Always	68	32.5	Always	69	33
Total	209	100	Total	209	100
Lunch offered at school			Milk and milk products used in a day		
Never	56	26.8	Never	56	26.8
Rarely	20	9.6	Rarely	20	9.6
Sometimes	23	11	Sometimes	23	11
Most of the times	25	12	Most of the times	25	12
Always	85	40.7	Always	85	40.7
Total	209	100	Total	209	100
Salty foods used in a day			Fat rich food used in a day		
I don't use	39	18.7	I don't use	57	27.3
<1 time	44	21.1	<1 time	45	21.5

1 time	36	17.2	1 time	43	20.6
2 times	33	15.8	2 times	38	18.2
3 times	42	20.1	3 times	16	7.7
4 times	5	2.4	4 times	9	4.3
≥ 5 times	10	4.8	≥ 5 times	1	0.5
Total	209	100	Total	209	100
Fruit juice used in a day			Advertisements watched about carbonated - drinks or fast foods		
I don't use	44	21.1	I don't watch	32	15.3
<1 time	55	26.3	Never	30	14.4
1 time	70	33.5	Rarely	55	26.3
2 times	23	11	Sometimes	68	32.5
3 times	6	2.9	Most of the times	24	11.5
4 times	4	1.9	Total	209	100
≥ 5 times	7	3.3			
Total	209	100			
TV ads watched for carbonated drinks or fast foods			Internet ads watched for carbonated drinks or fast foods		
I don't watch TV	56	26.8	I didn't see	30	14.4
A lot	37	17.7	A lot	41	19.6
A few	86	41.1	A few	89	42.6
None	30	14.4	None	49	23.5
Total	209	100	Total	209	100
Calls and messages encouraging to visit carbonated drink websites			Availability of carbonated soft drinks in school		
I didn't get	46	22	Yes	63	30.1
A lot	29	13.9	No	146	69.9
A few	48	23	Total	209	100
None	86	41.1			
Total	209	100			
Availability of fat foods in school			Advertisements for carbonated soft drinks in school		
Yes	56	26.8	I didn't see	56	26.8
No	153	73.2	A lot	23	11
Total	209	100	A few	60	28.7
	None	70	33.5		
	Total	209	100		
Teaching benefits of healthy eating in school			Teaching benefits of eating fruits and vegetables		
Yes	85	40.7	Yes	108	51.7
No	75	35.9	No	71	34
I don't Know	49	23.4	I don't Know	30	14.4
Total	209	100	Total	209	100
Teaching about safe preparation or store food			Teaching about healthy way to gain weight		
Yes	70	33.5	Yes	71	34
No	107	51.2	No	107	51.2
I don't Know	32	15.3	I don't know	31	14.8
Total	209	100	Total	209	100
Teaching about healthy way to lose weight					
Yes	69	33			
No	112	53.6			
I don't know	28	13.4			
Total	209	100			

Study subjects when interviewed using dietary questionnaire it was seen that most of them 79(37.8%) eats breakfast in the last 30 days and 16 (7.7%) never had breakfast.

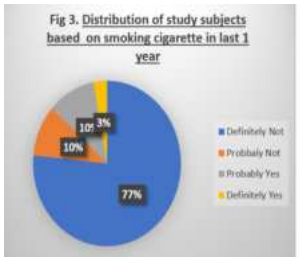
When asked about weight majority 113(54.1%) felt they were about the right weight and 3(1.4%) felt they were very overweight and 73(34.9%) felt they had no changes in their weight in last 30 days, whereas 39 (18.7%) felt they lost some weight. 148 (70.8%) of the study subjects measured their weight in past 12 months whereas the rest of them did not. 157 (75.1%) of the study subjects did not do any exercise to lose weight in last 30 days.

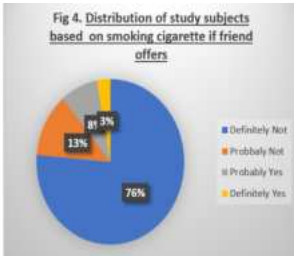
152(72.7%) did not have any dietary changes to lose weight in last 30 days. 33(15.8%) of them did more than 24 hours fasting to lose weight. 24(11.5%) took laxatives to lose weight and 175 (83.7%) did not do any exercise to gain weight. 161(77%) did not increase their dietary habits to gain weight. 28 (13.4%) of them took medications to gain weight.

68 (32.5%) always got lunch to school and 61 (29.2%) never got. 69 (33%) were always offered breakfast at school. 85 (40.7%) were always offered lunch at school. 63(30.1%) of them used milk and milk products at least once in a day.

44(21.1%) used salty foods less than once a day. 57 (27.3%) of them does not use fat rich food at all. 70(33.5%) of them had a fruit juice at least once a day. 68(32.5%) of them sometimes watched advertisements related to carbonated drinks and fast foods and 24(11.5%) of them watched advertisements most of the time.

Table 3. Distribution of Study Subjects Based on Tobacco Questionnaire





Among the 209 study subjects 160(76.6%) definitely did not smoke cigarette at all whereas 22(10.5%) probably smoked and 6(2.9%) definitely smoked cigarette.

158(75.6%) of them definitely does not smoke cigarette even if friend offers whereas 17(8.1%) probably will smoke if friend offers and 8(3.8%) definitely will smoke cigarette if friend offers

Table 4. Distribution of Study Subjects Based on Physical Activity Questionnaire

Sports teams played by student			Sleeping hours during normal school days		
OPTIONS	FREQUENCY	PERCENTAGE	OPTIONS	FREQUENCY	PERCENTAGE
0 teams	91	43.5	≤ 4 hrs	41	19.6
1 team	48	23.0	5 hrs	35	16.7
2 teams	45	21.5	6 hrs	66	31.6
≥3 teams	25	12.0	7 hrs	38	18.2
Total	209	100.0	8 hrs	23	11.0
			9 hrs	3	1.4
			≥ 10 hrs	3	1.4
Exercise to strengthen muscle in last 1 week			Stretching exercise done in last 1 week		
0 days	99	47.4	0 days	74	35.4
1 day	29	13.9	1 day	35	16.7
2 days	25	12.0	2 days	33	15.8
3 days	16	7.7	3 days	22	10.5
4 days	13	6.2	4 days	14	6.7
5 days	16	7.7	5 days	15	7.2
6 days	2	1.0	6 days	6	2.9
7 days	9	4.3	7 days	10	4.8
Total	209	100.0	Total	209	100.0
Teaching about physical fitness development in class			Teaching about preventing injuries during physical activity		
Yes	80	38.3	Yes	78	37.3
No	100	47.9	No	103	49.2
I don't know	29	13.8	I don't know	28	13.4
Total	209	100.0	Total	209	100.0
Teaching about the benefits of physical activity			Teaching about opportunities for physical activity in community		
Yes	104	49.8	Yes	83	39.7
No	69	33.0	No	78	37.3
I don't know	36	17.2	I don't know	48	23.0
Total	209	100.0	Total	209	100.0

When study subjects were asked on physical activity questionnaire, 91(43.5%) did not play sports as part of any team, 99(47.4%) did not do any exercise on nay of the days in last 1 week. 100(47.9%) of them were not taught about any physical development in school at all. 66(31.6%) sleeps for at least 6 hours in a day and 41 (19.6%) of them had sleep for less than 4 hours in a day. 74 (35.4%) of the participants did not do any stretching exercise at all in last 1 week. 103(49.2%) of the study subjects were not taught about preventing injuries during physical activity. 104(49.8%) of them were not taught benefits of physical activity and 83(39.7%) of them were taught about opportunities for physical activity in community.

Table 5. Distribution of Study Subjects Based on Association Between Health Eating Education and Various other Determinants

Taught Benefits of Healthy Eating in School						
Options	Yes	No	Don't Know	Total	Chi Square	P Value
Had Breakfast in last 30 days						
Never	1	3	0	4	22.455	0.004
Rarely	4	11	4	19		
Sometimes	8	4	5	17		
Most of the time	16	2	2	20		
Always	16	10	12	38		
Total	45	30	23	98		
Weight measurement in past 12 months						
Yes	38	20	13	71	6.670	0.036
No	7	10	10	27		
Total	45	30	23	98		
Getting Lunch to School						
Never	24	5	7	36	23.884	0.002
Rarely	3	6	4	13		
Sometimes	4	11	1	16		
Most of the times	5	2	2	9		
Daily	9	6	9	24		
Total	45	30	24	98		
Milk and Milk Products Used in a Day						
I don't use	5	7	2	14	24.128	0.020
<1 time	4	7	8	19		
1 time	17	7	4	28		
2 times	14	3	4	21		
3 times	4	6	3	13		
4 times	0	0	2	2		
>/5 times	1	0	0	1		
Total	45	30	23	98		
Advertisements watched about carbonated drinks or fast foods						
I don't watch	5	8	5	18	15.888	0.044
Never	8	4	3	15		
Rarely	15	7	5	27		

Sometimes	11	11	3	25		
Most of the times	6	0	7	13		
Total	45	30	23	98		

When we studied association between healthy eating education and other determinants like whether they had breakfast in last 30 days, whether weight was measured in last 12 months , frequency of them getting lunch to school , usage of milk and milk products per day and advertisements watched about carbonated drinks or fast foods, it was found that there was significant association.

DISCUSSION

Adolescence is a crucial period for laying the groundwork for a person's health, therefore it's crucial to comprehend the behavioural patterns that emerge as early adolescence gives way to late adolescence. studies on the healthy habits among adolescents may have a significant impact on public health policy by bringing changes and new initiatives to promote a healthy lifestyle.

This study was aimed to assess health and the factors influencing adolescent health among adolescents.

Dietary Pattern

When study subjects were interviewed using dietary questionnaire it was seen that most of them 79(37.8%) eats breakfast in the last 30 days and 16 (7.7%) never had breakfast. 3(1.4%) felt they were very overweight, 33(15.8%) of them did more than 24 hours fasting to lose weight. 24(11.5%) took laxatives to lose weight. 157 (75.1%) of the study subjects did not do any exercise to lose weight in last 30 days. 152(72.7%) did not have any dietary changes to lose weight in last 30 days whereas in another study conducted in Ahmedabad 51.1% of students were underweight while 9% of students were in pre-obese and obese categories and about 52.8% (n=19) of overweight students were trying to lose their weight.[9]

44(21.1%) used salty foods less than once a day. 57 (27.3%) of them does not use fat rich food at all. 70(33.5%) of them had a fruit juice at least once a day. 63(30.1%) of them used milk and milk products at least once in a day. Whereas in another study conducted in West Bengal it was seen that vegetables were consumed in most of the days of the week by 53.6% of the students, 59% students consumed milk for 5-7 days/week while 14.8% students never consumed milk. But only 4.7% consumed fruits for 5-7 days a week, also almost all the family (98.5%) used mustard oil as the main type of cooking oil. All used iodised salt but 13.3% students were in the habit of taking extra salt.[10]

Life Style Patterns

Among the 209 study subjects 160(76.6%) definitely did not smoke cigarette at all whereas 22(10.5%) probably smoked and 6(2.9%) definitely smoked cigarette and in the study conducted in Ahmedabad 2.5% and 7.9% of students smoked cigarettes and used any form of tobacco on one or more days during past 30 days .[9]

Physical Activity Pattern and Other Life Style

When study subjects were asked on physical activity questionnaire, 91(43.5%) did not play sports as part of any team, 99(47.4%) did not do any exercise on any of the days in last 1 week. 66(31.6%) sleeps for at least 6 hours in a day and 41 (19.6%) of them had sleep for less than 4 hours in a day. Whereas in the study conducted in West Bengal 40.5% of the study participants does an adequate amount of physical activity and the mean duration of sleep was 7.98 hours.[10]

CONCLUSION

The findings in the study suggested that good health education among adolescent age group benefits them in developing and following a healthy lifestyle as there was significant association found between healthy eating education and other determinants like whether they had breakfast in last 30 days, whether weight was measured in last 12 months , frequency of them getting lunch to school , usage of milk and milk products per day and advertisements watched about carbonated drinks or fast foods.

From our study we understand that it becomes imperative to keep balance between lifestyle and behavior. A scale like GSHS provide valuable insight into various domains of adolescence like hygiene; dietary behaviors and overweight; physical activity; tobacco use; mental health and several protective factors.

Recommendations

The health promotional activities as well as health education should be incorporated in the schooling life. Our system of education needs to incorporate more behavioral education for a better and healthier future. An integrated action strategy involving various stakeholders (decision makers, community leaders, including teachers, parents, and adolescents) should be undertaken for prevention and control of health risk behaviors among adolescents.

Limitations

The study was done in the field practice area of UHTC, therefore it cannot be generalized.

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