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Assessment Of Obesity And It's Contributing Factors Among Adolescents At Selected Schools : A Cross- Sectional Study

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Abstract

Introduction: *Obesity is a complex condition that occurs when a person weighs more than what is considered healthy for their height. It affects both adults and children. Various factors contribute to excessive weight gain, including eating habits, physical activity, and sleep patterns, as well as medical and social determinants.*

Objectives : *PRIMARY OBJECTIVE : To assess obesity and it's contributing factors among adolescents at selected schools. SECONDARY OBJECTIVES: 1)To assess the obesity among adolescents at selected school.2)To find out the factors contributing to obesity among adolescents at selected schools.3)To find out the association between factors contributing to obesity and selected demographic variables among adolescents at selected schools.*

Methodology: *This study was based on quantitative approach. "Non experimental Cross sectional study design " was used with the objective to assess the obesity and factors contributing to obesity among adolescent at selected schools.*

Result: *In the present study 32.86% of the adolescents were Optimal, 2.86% of them were overweight and 64.29% of them were Obese. Minimum BMI Score was 19.70 and maximum BMI Score was 31.9. Mean BMI score was 25.8±2.46.*

Conclusion: *After the detailed analysis, this study leads to the following conclusion : The study reveals that in Nutritional factor 37.14% of the adolescents consume excess calories, 57.14% of them frequently consume fast food or processed snacks, 55.71% included fruits in their diet daily, 71.43% of them include salad in their meal, 64.29% experienced food craving, 64.29% adherent to consistent meal schedule, 72.86% of them consume more than three meals per day, 75.71% of them consume in between snack snacks and 61.43% of adolescents consume balanced diet. In Medical Factors 4.29% have diagnosed with medical conditions, 2.86% of adolescents are taking prescribed medications, 14.29 % of adolescents are experiencing hormonal dysfunction, metabolic disorder and thyroid related issues. In Physical and Leisure activity 71.43% of them watch television while eating meals, 57.14% of them do not practice meditation or yoga during leisure time, 91.43% are actively engage in hobbies during free time , 88.57% of them participate in sports , 84.29% are interested in activities such as camping or outdoor excursions, 78.57% having screen time more than three hours , 85.71% of them having physical education (PE) period , 55.71% attend social gatherings more frequently, 87.14% achieving adequate sleep on a regular basis .In Psychological Factors 8.57% of them experience significant stress or anxiety , 65.71% are concerned about your body image , 21.43% are receiving criticism about their appearance or weight , 21.43% of them tend to eat more when they are experiencing sadness or emotional stress , 11.43% of them are prescribed antidepressant medications .In Family 42% having history of obesity in their immediate family , 21% of adolescent's parents are enthusiastic about food and dinning , 32% of adolescent's parents having health conditions like cardiovascular disease , diabetes mellitus or high blood pressure , 19% of adolescent's family participate in activities like walking or cycling. There is association of obesity and it's contributing factors with age, monthly family income and residence and there is no association of contributing factors with any other demographic variables.*

Key words: *Obesity, Adolescent, Contributing factors*

INTRODUCTION

Adolescence, spanning ages 10 to 19, is the transitional period between childhood and adulthood. It is a crucial stage for establishing a foundation for good health, marked by rapid physical, cognitive, and psychosocial development. These changes influence adolescents' emotions, thoughts, decision- making, and interactions with their surroundings. While often seen as a healthy period, adolescents experience considerable death, illness, and injury, much of which is preventable or treatable. During this time, adolescents form behavior patterns related to diet, physical activity, substance use, and sexual activity that can either promote their health and the well-being

of those around them or pose risks to their present and future health.[1]
Overweight and obesity are characterized by an abnormal or excessive accumulation of fat that poses a risk to health. A body mass index (BMI) greater than 27 is classified as overweight, while a BMI over 30 is considered obese.[2]
If one parent is obese, there is a 50% chance that their child will also be obese. However, if both parents are obese, the likelihood rises to 80%. While some medical conditions can contribute to obesity, less than 1% of cases are caused by physical issues. Obesity in children and adolescents may result from poor eating habits, overeating or binge eating, lack of physical activity (such as sedentary behavior), family history of obesity, medical conditions (like endocrine or neurological disorders), medications (such as steroids or certain psychiatric drugs), stressful life events (like separations, divorces, moves, deaths, or abuse), family or peer difficulties, low self- esteem, depression, or other emotional challenges. Obese children should undergo a comprehensive medical evaluation by a pediatrician or family doctor to rule out physical causes. If no physical disorder is found, weight loss can only be achieved by reducing calorie intake and increasing physical activity. Sustainable weight loss requires self-motivation.[3]

BACKGROUND OF STUDY

Previously regarded as health issues primarily affecting adults, overweight and obesity are now increasingly common among children and adolescents (Wang, 2004). In Tanzania, children's physical development shows a decline in fitness and an increase in fat accumulation, which may be a result of prolonged adiposity (Kafyulilo, 2006). The noticeable rise in fatness among children, observed in the author's initial study on overweight and obesity, prompted further investigation into this growing concern. In the first study, significant adiposity was particularly evident among urban children (Kafyulilo, 2006). Sushruta, an Indian surgeon, linked diabetes and cardiac problems to obesity in the sixth century BCE. In order to treat illness and its effects, he ad vised physical activity. Humanity has faced a food shortage for the majority of recorded history.
As a result, obesity has historically been associated with success and money. In the Middle Ages and Renaissance, as well as in the ancient East Asian civilizations, it was typical among top officials in Europe. Tobias Venner,an English physician who wrote in the 17th century, is ecognized as one of the first authors to use the term.[4]

NEED OF THE STUDY

A study involving 385 adolescents examined the prevalence and causes of obesity. Using WHO BMI standards, 6.8% were found to be obese, 17.1% overweight, 53.8% had normal weight, and 22.3% were underweight. Key factors linked to obesity included gender, socioeconomic status, eating habits, chocolate intake, transportation mode, physical activity, and screen time. Adolescents who exercised or played sports had healthier BMIs, while those with over 2 hours of daily screen time were more likely to be obese. The study highlights the need for policies promoting healthy lifestyles to prevent long-term health risks.[5]
One of the simplest medical conditions to identify but one of the hardest to treat is obesity. Future load on health costs and services will be significantly impacted by the health effects of obesity.
Around the world, childhood obesity is becoming more common. It is linked to a number of risk factors for later heart disease and other chronic illnesses. These risk variables might be influenced by the link between childhood and adult obesity, but they also might function on their own. Therefore , the researcher felt the need to assess the obesity and contributing factors of obesity among adolescents.

ETHICAL CONSIDERATION

The ethical committee of the institution approved the study proposal. Authorization was granted by the relevant authorities in the selected schools. Consent was obtained from both the parents and the individual participants after explaining the research process in their native language. The investigator ensured confidentiality by using code numbers to protect the participants' information.

CONCEPTUAL FRAMEWORK

The conceptual framework for the present study is developed from the Health Belief Model.

REVIEW OF LITERATURE

1. Review of literature related of adolescents.
2. Review of literature related of obesity among adolescents.

3. Review of literature related to contributing factors of obesity among adolescents.

OBJECTIVES

Primary objective

1. To assess obesity and it's contributing factors among adolescents at selected schools.

Secondary objectives

1. To assess the obesity among adolescents at selected school.
2. To find out the factors contributing to obesity among adolescents at selected schools.
3. To find out the association between factors contributing to obesity and selected demographic variables among adolescents at selected schools.

ASSUMPTIONS

1. Adolescents are obese .
2. There may be some association between obesity and it's contributing factors .
3. There may be some association between obesity and selected demographic variables.

RESEARCH METHODOLOGY RESEARCH APPROACH

In this study, Quantitative research approach was adopted to assess the obesity and factors contributing to obesity among adolescent at selected schools.

RESEARCH DESIGN

In this study "Non experimental Cross sectional study design " was used with the objective to assess the obesity and factors contributing to obesity among adolescent at selected schools.

RESEARCH SETTING

The study was conducted in selected schools of the city.

VARIABLE OF THE STUDY

Research variable: In descriptive research studies variables are observed under natural setting as they exist, without manipulating or imposing the effect of intervention or treatment.

Demographic variable

Age (in year), gender, monthly family income (in Rs.), religion , type of diet , Body mass index (BMI), birth order and residence.

POPULATION

Population is selected for present study are all adolescents.

TARGET POPULATION

Target population of present study are all adolescent between the age group 14 to 18 of selected schools.

ACCESSIBLE POPULATION

All adolescents between the age group 14 to 18 years of selected schools and who are available at the time of study.

SAMPLE

Sample taken from adolescent in selected schools of the city.

SAMPLE SIZE

70 adolescent from selected schools

SAMPLING TECHNIQUE

The sampling technique used in the study was non probability purposive sampling technique.

TOOL

The tool used in this study consist of two major sections:

Section -A

It consist of 8 demographic variables like Age, gender, religion, monthly family income , type of diet, birth order , body mass index and residence.

Section-B

Checklist on contributing factors to obesity . This checklist is made to assess the factors contributing to obesity among adolescent at selected schools.

It consist of five contributing factors and questions related to the factors. Total 30 items are present in the checklist.

RESULTS:

Table IV.1: Percentage wise distribution of Adolescents according to their demographic characteristics. n=70

Demographic Variables	Frequency	Percentage(%)
Age(yrs)		
14	17	24.3
15	21	30.0
16	20	28.6
17	12	17.1
18	0	0
Gender		
Male	31	44.3
Female	39	55.7
Religion		
Hindu	46	65.7
Muslim	10	14.3
Christian	4	5.7
Buddhist	9	12.9
Monthly family income(Rs)		
Less than 10000	4	5.7
10001-15000	13	18.6
15001-20000	27	38.6
More than 20000	26	37.1
Type of Diet		
Vegetarian	32	45.7
Non Vegetarian	37	52.9
Ovo-Vegetarian	1	1.4
Birth Order		
First	33	47.1
Second	30	42.9
Third and above	7	10.0
Residence		
Urban	56	80.0
Rural	7	10.0
Semi Urban	7	10.0

Table IV.2: Assessment with level of Obesity
n=70

Level of Obesity	Score Range	Level of Obesity	
		Frequency	Percentage
Underweight	18.5 kg/m2	0	0
Optimal	18.5-24.9 kg/m2	23	32.86
Overweight	25-29.9 kg/m2	2	2.86
Obese	30 kg/m2	45	64.29
Minimum score		19.70	
Maximum score		31.9	
Mean BMI score		25.8±2.46	

Table IV.3: Assessment with factors contributing to obesity
n=70

Sr. no.	Contributing factors	Yes	%	No	%
1.	**Nutrition** Do you consume excess calories?	26	37.14	44	62.86
2.	Do you frequently consume fast food or processed snacks?	40	57.14	30	42.86
3.	Do you include fruits in your diet daily?	39	55.71	31	44.29
4.	Do you include salad in your meal ?	50	71.43	20	28.57
5.	Do you experience late night food craving?	45	64.29	25	35.71
6.	Do you adhere to a consistent meal schedule?	25	35.71	45	64.29
7.	Do you consume more than three meals per day?	51	72.86	19	27.14
8.	Do you consume in between snacks ?	53	75.71	17	24.29
9.	Do you consume balanced diet?	43	61.43	27	38.57
10.	**Medical Factors** Do you have any diagnosed medical conditions?	3	4.29	67	95.71
11.	Are you currently taking any prescribed medications? (If yes specify.....)	2	2.86	68	97.14
12.	Do you experience any hormonal dysfunction, metabolic disorders, or thyroid-related issues?	10	14.29	60	85.71
13.	**Physical and Leisure activity** Do you watch television while eating meals?	50	71.43	20	28.57
14.	Do you practice meditation or yoga during your leisure time?	30	42.86	40	57.14
15.	Do you actively engage in hobbies or interests during your free time?	64	91.43	6	8.57
16.	Do you participate in sports ?	62	88.57	8	11.43
17.	Are you interested in activities such as camping or outdoor excursions?	59	84.29	11	15.71
18.	Is your daily screen time (e.g., television, computer, smartphone) more than three hours?	55	78.57	15	21.43
19.	Does your school have a physical education (PE) period?	60	85.71	10	14.29
20.	Do you attend social gatherings more frequently?	39	55.71	31	44.29
21.	Are you achieving adequate sleep on a regular basis?	61	87.14	9	12.86
22.	**Psychological Factors** Do you experience significant stress or anxiety?	6	8.57	64	91.43
23.	Are you concerned about your body image?	46	65.71	24	34.29
24.	Do you receive criticism about your appearance or weight?	15	21.43	55	78.57
25.	Do you tend to eat more when you are experiencing sadness or emotional distress?	15	21.43	55	78.57
26.	Are you prescribed antidepressant medications?	8	11.43	62	88.57
27.	**Family**	42	60.00	28	40.00

	Is there a history of obesity in your immediate family?				
28.	Are your parents particularly enthusiastic about food and dining?	21	30.00	49	70.00
29.	Do your parents have any of the following health conditions: cardiovascular disease, diabetes mellitus, or high blood pressure?	32	45.71	38	54.29
30.	Does your family participate in activities like walking or cycling?	19	27.14	51	72.86

Table IV.4: Association of obesity with selected demographic variables among adolescents in selected schools. n=70

Demographic Variable	Calculated value			df	Tabulated Value	Level of significance < 0.05	Significance
	t- value	F- Value	p- value				
Age in years		5.80	0.033	3,66	2.68	p<0.05	S
Gender	1.71		0.09	68	2.00	p>0.05	NS
Religion		0.63	0.10	4,65	2.45	p>0.05	NS
Family Income (Rs)		2.72	0.001	3,66	2.68	p<0.05	S
Type of diet		1.35	0.22	2,67	3.07	p>0.05	NS
Birth order		2.33	0.47	2,67	3.07	p>0.05	NS
Residence		2.32	0.046	2,67	3.07	p<0.05	S

DISCUSSION

In the present study 32.86% of the adolescents were Optimal , 2.86% of them were overweight and 64.29% of them were Obese. Minimum BMI Score was 19.70 and maximum BMI Score was 31.9. Mean BMI score was 25.8±2.46.

A study in South Karnataka found that 51.2% of adolescent participants were boys with a mean BMI of 17.3 kg/m^2. Overall, 23.9% were underweight, 60.6% had normal weight, 11.4% were overweight, and 4% were obese. Boys had a 9.3% overweight rate and 5.2% obesity, while girls had 10.5% and 4.3%, respectively. Adolescents spending over 4 hours daily on screens were 7.3 times more likely to be overweight. In a similar study in Hyderabad involving 1208 adolescents (48.5% boys, average age 14.5 years), the mean BMI was 18.0 kg/m^2. Among them, 39.6% were underweight, 39.6% had normal weight, 12.1% were overweight, and 8.7% were obese. Most (91%) watched TV on school days, 69.1% spent over 4 hours daily on screens, 63.3% were non-vegetarian, and 77.3% consumed junk food more than once a week.[6]

CONCLUSION

After the detailed analysis, this study leads to the following conclusion :

The study reveals that in **Nutritional factor** 37.14% of the adolescents consume excess calories, 57.14% of them frequently consume fast food or processed snacks, 55.71% included fruits in their diet daily, 71.43% of them include salad in their meal, 64.29% experienced food craving, 64.29% adherent to consistent meal schedule, 72.86% of them consume more than three meals per day, 75.71% of them consume in between snack snacks and 61.43% of adolescents consume balanced diet. In **Medical Factors** 4.29% have diagnosed with medical conditions , 2.86% of adolescents are taking prescribed medications, 14.29 % of adolescents are experiencing hormonal dysfunction , metabolic disorder and thyroid related issues . In **Physical and Leisure activity** 71.43% of them watch television while eating meals, 57.14% of them do not practice meditation or yoga during leisure time , 91.43% are actively engage in hobbies during free time , 88.57% of them participate in sports , 84.29% are interested in activities such as camping or outdoor excursions, 78.57% having screen time more than three hours , 85.71% of them having physical education (PE) period , 55.71% attend social gatherings more frequently, 87.14% achieving adequate sleep on a regular basis .In **Psychological Factors** 8.57% of them experience significant stress or anxiety , 65.71% are concerned about your body image , 21.43% are receiving criticism about their appearance or weight , 21.43% of them tend to eat more when they are experiencing sadness or emotional stress , 11.43% of them are prescribed antidepressant medications .In **Family** 42% having history of obesity in their immediate family , 21% of adolescent's parents are enthusiastic about food and dinning , 32% of adolescent's parents having health conditions like cardiovascular disease , diabetes mellitus or high blood pressure , 19% of adolescent's family participate in activities like walking or cycling.

IMPLICATION OF THE STDUY

NURSING PRACTICE: Nursing combines science and compassion to provide quality care. In adolescent obesity, nurses play a key role in assessment, education, prevention, and management. They teach healthy habits, support weight loss, address emotional issues, and work with other professionals for holistic care. A patient-centered, culturally sensitive approach helps promote long-term health and reduce obesity stigma.

NURSING EDUCATION: The study aims to raise awareness among teachers to educate adolescents about obesity and its risk factors. Nursing education on obesity trains nurses to assess, prevent, and manage obesity through tools like BMI, promoting healthy lifestyles, using behavior change strategies, and collaborating on personalized care plans. It also emphasizes cultural sensitivity, public health advocacy, and patient-centered care.

NURSING ADMINISTRATION: As a nursing administrator, the study findings can be used to organize group discussions, symposiums, and continuing education programs to update staff knowledge. Participant recommendations can help shape policies for obesity prevention. Administrators also play a key role in overseeing research, ensuring ethical standards, supporting staff training, and using findings to improve care and outcomes.

NURSING RESEARCH: Research is a systematic, objective, and scientific approach to understanding events through controlled observation and analysis, leading to generalizations or theories that help predict or control outcomes. Nursing research on obesity focuses on prevention, patient-centered care, behavior change, chronic disease management, and effective care models, aiming to develop evidence-based strategies to improve outcomes.

PERSONAL EXPERIENCES

The study provided an enriching and valuable learning experience for the researcher, enhancing skills in critical thinking, analysis, and effective communication. It was a varied and insightful journey that contributed to the investigator's overall growth. Continuous guidance from the research guide and strong cooperation from the participants boosted the researcher's confidence and made the process a rewarding learning opportunity.

RECOMMENDATION

- Since the present study was conducted on moderate sample,more extensive studies on wider sample is recommended.
- Similar study can be conducted by the assessment of contributing factors to obesity among adolescents.
- A similar study can be conducted on a large sample for wider generalization.
- A study can be conducted by including additional demographic variables. A comparative study can be conducted between rural and urban residence.
- Mannual, information booklet and self -instructional module may be developed in different area .

LIMITATION

- Study is limited to adolescent in selected schools
- The study is not interventional study; only the assessment study.

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