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Assessment Of Body Weight, Weight Perception, And Weight Reduction Approaches Among Adolescents

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Abstract:
Background of the study: *The adolescence stage is a critical stage of physical development. Body weight and body image concerns mainly influence self-esteem, emotional health and eating behavior.*
Aim: *This study examines the body weight, weight perception, and weight reduction approaches among adolescents of both genders at Pediatric OPD, at a selected Hospital in Chengalpattu District.*
Objectives: *1. To assess the actual body weight of the adolescents. 2. To assess the weight perception among adolescents. 3. To assess the weight control approach among adolescents. 4. To find out the correlation between weight perception and weight control approach among adolescents. 5. To find out the association between adolescents' body weight and weight control approach with their selected demographic variables.*
Materials: *A quantitative approach with a cross-sectional research design was adopted.*
Results: *The major findings show that the mean BMI was 19.806 ± 5.178. Findings on nutritional status shows that 45.27% of the participants were undernourished, 39.74% were normally nourished and 14.99% were overnourished. Adolescent's weight perception shows that 53.85% of them perceived themselves as being overweight. Adolescents weight reduction approach finding shows that only 50% of them followed good weight reduction practices. The correlation between weight perception and the weight reduction approach was r=0.61, which shows when overweight perception increases weight reduction practices also increase. The results show that the adolescent's nutritional status was associated with previous knowledge of weight (p-0.0025), gender (p-0.034) and type of family (p-0.034) associated with the weight reduction approach of the adolescents.*
Conclusion*: The findings suggest the need to provide the right information on nutritional assessment and optimal weight maintenance to adolescents to prevent under nutrition, & obesity and its associated comorbidities in their later life.*
Keywords*: Body mass index, body weight perception, weight reduction approaches, and adolescents.*

INTRODUCTION:

Childhood obesity remains a significant global issue, with CDC statistics indicating that 20.9% of teenagers (ages 12-19) are overweight or obese. Research shows that 80% of obese teenagers will become obese adults, with a high risk of obesity lead to morbidities like heart disease and diabetes. Additionally, overweight teenagers often face negative body image, impacting their mental health. Weight is influenced by factors such as genetics, diet, and physical activity and is commonly measured in kilograms or pounds. While weight can indicate health, body composition is also crucial for a comprehensive assessment of overall well-being.

OBJECTIVES:

1. To assess the actual body weight of the adolescents.
2. To assess the weight perception among adolescents.
3. To assess the weight control approach among adolescents.
4. To find out the correlation between weight perception and weight control approach among adolescents.
5. To find out the association between body weight and weight control approach of adolescents with their selected demographic variables.

HYPOTHESIS:

Ho1-There is no statistical relationship between weight perception and the weight control approach among adolescents.

Ho2 - There is no statistical association between the body weight of adolescents with their specified demographic variables.

Ho3 - There is no statistical association between the weight reduction approach of adolescents with their selected demographic variables.

Material and method:

The study used a non-experimental- cross-sectional design with a quantitative approach and was conducted among adolescents in the Pediatric outpatient department at Chettinad Hospital & Research Institute in Chengalpattu District. The sample size was 78 and the purposive sampling technique was adopted. The questionnaire tools will be given and 30 min are assigned to them to fill in the answers. Ethical principles of research were followed. The data was collected through a direct observation & structured questionnaire. The data was analyzed by using SPSS.

Inclusion criteria:

The study includes adolescents who were willing to participate and in the age of 13-19 years.

Exclusion criteria:

The present study excludes adolescents who were mentally and physically disabled with serious health issues.

RESEARCH VARIABLES:

The demographic questions are Age, gender, education, family monthly income, family type, area of residence, and source of information.

DATA COLLECTION TOOL:

Part 1: Demographic variables of adolescents.

Part 2: Actual weight calculation using an electronic weighing machine with WHO Z score BMI interpretation.

Part 3: Structured questionnaire on weight perception.

Part 4: Structure questionnaire on weight control approach.

Table 1: Frequency distribution of demographic variables of adolescents
N=78

S.no	Specified Demographic variable	f	%
1.	**Age in years**		
a)	13- 15	31	39.75%
b)	16-19	47	60.25%
2.	**Gender**		
a)	Female	30	38.46%
b)	Male	48	61.54%
3.	**Area of residence**		
a)	Urban	31	39.74%
b)	Rural	47	60.25%
4.	**Educational Standard**		
a)	Secondary & high school	33	42.30%
b)	Higher Secondary school	45	57.70 %
5.	**family income per month**		
a)	Less than Rs.20,000	16	20.52%
b)	Rs.20,000 and above.	62	79.48%

6.	**Types of family**		
a)	Nuclear family	30	38.46%
b)	Joint family	48	61.53%
7.	**Sources of Previous knowledge on body weight**		
a)	Printed material.	9	11.53%
b)	Friends and relatives.	27	34.61%
c)	Health Worker.	20	25.64%
d)	Social media or the internet.	22	28.22%

Table 1 shows that 60.25% of study participants were aged 16 to 19 years. The majority of the participants were male and most of them resided in rural areas. About 57.70% of them were in a higher secondary education level. Most of the adolescent's monthly family income was Rs 20,000 and above. The majority 61.53% belong to a joint family, and most sources of previous knowledge on body weight are from friends and relatives.

Table 2: The Mean body mass index (BMI) of adolescents
N=78

SNO	Sample size	Mean BMI	Standard deviation
1.	78	19.806	5.178

Table 2**:** shows that the mean and standard deviation of body mass index of the study participant was 19.806 $\pm$ 5.178.

Table 3: Nutritional status of adolescents based on WHO Z score interpretation
N=78

S.NO	Nutritional status	F	%
1.	Severe undernutrition	17	21.79%
2.	Undernutrition	23	23.48%
3.	Normal nutrition	31	39.74%
4.	Overweight	2	2.564%
5.	Obese	5	6.410%

Table 3**:** Results show that 39.74% of adolescents were having normal nutritional status.

Table 4: Obesity status of adolescents
N=78

S.NO	Classification	Range	f	%
1..	Class 1 – obese	30.1-34.9	3	3.84%
2.	Class 2 – obese	35-39.9	2	2.56%
3.	Class 3 - obese	40 and above	0	0%

Table 4: Results show that 3.84% of study participants were in the category of class 1- obesity, & 2.56 % of study participants were in the category of class 2-obesity.

Table 5: Weight perceptions of adolescents
N=78

S.NO	Weight perception	f	
How do you perceive yourself about your Weight			
1	Underweight	17	21.79%

2	Normal weight	42	24.35%
3	Overweight	19	53.85%

Table 5: shows that 21.79 % of adolescents perceived themselves as underweight, 53.84%perceived themselves as normal weight and 24.35% perceived themselves as overweight.

Table 6: Weight reduction approach among adolescents

N=78

SNO	Approach	f	%
1	Minimal weight control approach	39	50%
2	Fair weight control approach	31	39.75%
3	Good weight control approach	08	10.25%

Table 6 shows that 50% of the adolescents followed the minimal weight reduction approach, 39.74 followed the fair weight reduction approach and 10.25 followed the good weight reduction approach.

Table 7: Correlation between weight Perceptions and Weight reduction approach among adolescents

N=78

s.no	Variables	Mean	Stranded derivation	R value
1.	Weight Perception	**2.025**	**0.683**	0.61
2.	Weight reduction approach	**4.089**	**2.204**	

Table 7 : Shows that there is a moderate positive correlation between weight perception and weight loss approach. It revealed that when the weight increases weight loss approach also increases. Hence the null hypothesis H_o1 is rejected.

Table 8: Association between Demographic variables and Nutritional status of Children

N=78

s.no	Demographic Variables	Severe Undernutrition	undernutrition	Normal weight	Overweight	Obese	total	P value
1.	**Age in year**							0.0577 NS
	a)13-15 years	3	9	15	0	4	31	
	B)16-19 years	14	14	16	2	1	47	
Total		17	23	31	2	5	48	
2.	**Gender**							0.6229 NS
	Female	5	7	15	1	2	30	

	Male	12	16	16	1	3	48	
Total		17	23	31	2	5	78	
3.	**Area of residence**							
	Urban	9	10	12	0	0	31	0.1990 NS
	Rural	8	13	19	2	5	47	
Total		17	23	31	2	5	78	
4.	**Educational status**							
	Secondary & high school level	4	9	15	1	4	33	0.2007 NS
	Higher secondary level	13	14	16	1	1	45	
Total		17	23	31	2	5	78	
5.	**Family income per month**							
	Less than Rs.20,000	6	4	5	1	0	16	0.0577 NS
	Rs 20,000 and above.	11	19	26	1	5	62	
Total		17	23	31	2	5	78	
6.	**Types of family**							
	Nuclear family	7	8	14	1	0	30	0.4046 NS
	Joint family	10	15	17	1	5	48	
Total		17	23	31	2	5	78	
7.	**Sources of previous knowledge on body weight**							
	Printed material	0	6	3	0	0	9	

	Friends and relative	7	7	10	2	1	27	0.0025 *S
	Health workers	3	4	10	0	3	20	
	Social media or internet.	7	6	8	0	1	22	
Total		17	23	31	2	5	78	

Table 8: Shows that there is a statistical association between source of previous knowledge on body weight and nutritional status (p 0.0025). It denotes that children received information on body weight from relatives and health workers had normal nutritional status. There was no statistical association between other demographic variables like age, gender, area of residence, education, family income and type of family. Hence the hypothesis H02 is partially accepted. Hence the hypothesis H_o2 is partially accepted.

Table 9: Association between weight reduction approach and demographic variables
N=78

S.no	Demographic Variables	Minimal weight control approach	Fair weight control approach	Good weight control approach	Total	P value
1.	**Age in year**					0.0656 NS
	a)13-15 years	13	14	4	31	
	B)16-19 years	25	17	5	47	
Total		38	31	9	78	
2.	**Gender**					
	a)Female	17	11	2	30	0.0342 *S
	b)Male	21	20	7	48	
Total		38	31	9	78	
3.	**Area of residence**					0.0656 NS
	a)Urban	15	12	4	31	
	B)Rural	23	19	5	47	
Total		38	31	9	78	

4.	**Educational status**					
	a)No formal educational.	0	0	0	0	0.2018 NS
	b)primary/secondary school education.	13	16	4	33	
	c)High school /Higher secondary education.	25	15	5	45	
Total		38	31	9	78	
5.	**Family income per month**					
	a)Less than Rs.20,000	6	8	2	16	3 .881 NS
	b)Rs 20,000 and above.	32	23	7	62	
Total		38	31	9	78	
6.	**Types of family**					0.0342 *S
	a)nuclear family	11	13	6	30	
	b)Joint family	27	18	3	48	
Total		38	31	9	78	
7.	**Sources of previous knowledge on body weight?**					0.0661 NS
	a)Printed material	6	3	0	9	
	b)friends and relative	13	12	2	27	
	c)Health workers	11	5	4	20	
	d)Social Media or internet .	8	11	3	22	

Table 9 The result shows that there is a statistical association between gender and type of family with the weight control approach of the adolescents, but no association of weight control approach with other demographic variables. Hence the null hypothesis H_o3 is partially accepted.

DISCUSSION

The main aim of the study is to assess the body mass index (BMI), nutritional status, weight perception, and weight reduction approach among adolescents. BMI measures body fat based on height and weight. Elevated BMI associated with type 2 diabetes and cardiovascular diseases. Dietary habits, physical activity, genetics, hormonal and psycho-social factors play a major role in adolescent's BMI. A total of 78 adolescents participated. The major findings show that the mean BMI was 19.806 ± 5.178. Findings on nutritional status shows that 45.27% of the participants

were undernourished, 39.74% were normally nourished and 14.99% were overnourished. Adolescent's weight perception shows that 53.85% of them perceived themselves as being overweight. Adolescents weight reduction approach finding shows that only 50% of them followed good weight reduction practices. The correlation between weight perception and the weight reduction approach was r=0.61, which shows when overweight perception increases weight reduction practices also increase. The results show that the adolescent's nutritional status was associated with previous knowledge of weight (p-0.0025), gender (p-0.034) and type of family (p-0.034) associated with the weight reduction approach of the adolescents.

CONCLUSION:

The study examined adolescent's body weight, weight perception, and weight loss approaches, revealing significant insights. Many perceived themselves as normal weight, while notable numbers identified as underweight or overweight, correlating with their weight loss behaviors. Gender and family type influenced weight control strategies, with distinct patterns in males and those from joint families. Nutritional assessments showed concerning rates of undernutrition and obesity, emphasizing the need for targeted interventions. Understanding these dynamics is crucial for effective public health strategies to improve adolescent well-being. The study highlights the importance of accurate body weight perception and tailored interventions for healthy weight management. Addressing these factors can better support adolescents in achieving optimal health outcomes.

Conflict of interest: Nil

Ethical Aspects: Ethical principles were followed and institutional human ethical committee clearance was obtained from the Chettinad Academy of Research and Education.

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