

## Original Research Article

# A study to assess the knowledge and attitude of adolescents towards obesity in a private school in Thrissur district Kerala, India

Garggy Shaji<sup>1</sup>, Navya Choolaparambil Joseph<sup>2\*</sup>, Aswathy Mathu<sup>2</sup>, Vidhu Joshy<sup>3</sup>

<sup>1</sup>Amala Institute of Medical Sciences, Thrissur, Kerala, India

<sup>2</sup>Department of Community Medicine, <sup>3</sup>Department of Statistics, Amala Institute of Medical Sciences, Thrissur, Kerala, India

**Received:** 06 May 2019

**Accepted:** 14 June 2019

### \*Correspondence:

Dr. Navya C. J.,

E-mail: [Cjnavya710@gmail.com](mailto:Cjnavya710@gmail.com)

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## ABSTRACT

**Background:** Overweight and obesity are 5th leading risks for global deaths. Adolescence is a transitional period, which requires special attention. Prevalence of overweight and obesity among children and adolescents has widely increased world-wide, making it one of the most common chronic disorders in this age group. To assess knowledge and attitude of adolescents towards obesity and to assess its associated factors.

**Methods:** This was a descriptive cross sectional study conducted among students of classes 9, 10, 11 and 12 in Devamatha public school, Thrissur from May to November 2018. In total there were 179 students. A pretested self administered questionnaire was used to collect data.

**Results:** 46.4% of adolescents had low knowledge on obesity, 46.9 have moderate knowledge, and only 6.7% of them had high knowledge on obesity. 24.6% of adolescents have negative attitude towards obese individuals, 68.2% had neutral attitude and only 7.3% had positive attitude towards obesity. As the age increases, there is increase in knowledge about obesity and positive attitude towards obese individuals. Both knowledge and attitude is better in children belonging to Christian families. Better knowledge and attitude is seen among students who are hostlers than day scholars. Children with better marks in annual exam had better knowledge and attitude towards obesity. Children who had positive family history for obesity have better knowledge and attitude towards obesity.

**Conclusions:** There is a need for targeted activities to improve the knowledge and attitude of the students towards obesity.

**Keywords:** Cross sectional study, Knowledge, Attitude, Obesity

## INTRODUCTION

The Latin word *adolescere* means “to grow or to mature”.<sup>1</sup> It is a phase separate from both early childhood and late adulthood. It is a transitional period that requires special attention and protection.<sup>2</sup> Since choices made during adolescent years influences later life, high levels of self awareness and self control during mid adolescence will lead to better decision during the transition to adulthood.<sup>3</sup> Health problems in adolescents are road injury, HIV, suicide and interpersonal violence causing

mortality and mental health problems, followed by health compromising behaviours causing mortality.<sup>4</sup> Among these, this research is based on obesity. The number of adolescents who are obese or overweight is increasing in both low and high income countries.<sup>4</sup> Prevalence of overweight and obesity among children and adolescents has widely increased world-wide, making it one of the most common chronic disorders in this age group.<sup>6</sup> Globally, over 2 billion children and adults suffer from health problems related to being obese.<sup>7</sup> Prevalence of overweight and obesity among children and adolescents

has widely increased world-wide, making it one of the most common chronic disorders in this age group.<sup>6</sup> Long term health effects include heart diseases, type 2 diabetes, stroke etc. This paper has 2 sections: first of all we look at the knowledge of the student regarding obesity. Do people recognize obesity when it exists and what do they think as its causes and consequences. Second, we look at the peoples view towards those who are obese and in particular, the extent to which obese individuals is thought to be the object of social stigma. It helps to understand the public attitude towards those who are obese.

This study was conducted with following objective: to assess the knowledge and attitude of adolescents towards obesity and to assess its association with other factors.

## METHODS

Cross sectional study, conducted from May 2018 to November 2018 among students of classes 9, 10, 11 and 12 of Devamatha Public School, Thrissur.

Formula for calculating sample size was  $n=4pq/d^2$ . P=prevalence of students with poor knowledge,  $q=1-p$ ,  $d=20\%$  of  $p$ ,  $n=120$ , we have taken 179 students. Prevalence of poor knowledge of obesity among adolescents was 67% as a study conducted in Amritsar.<sup>9</sup> All students of 9th 10th 11th and 12th who have given consent to participate in the study are included. After obtaining prior permission from the authorities. I randomly selected students of classes 9, 10, 11 and 12. Then the purpose of the study was explained to them in detail. They were assured of anonymity and confidentiality. Questionnaire was administered in

English and collected back after completing. Data was entered using MS Excel. Statistical analysis was done using SPSS Version 20.

## RESULTS

### *Socio-demographic characters of study population*

50.3% children were males and 49.7% were females. A large proportion of the study subjects were Christians (56.4%), followed by Hindus (32.4%) and Muslims (10.6%). Most of the subjects were nuclear (74.9%) followed by 3 generation family (14%) and then joint family (10.1%). Most of subjects were dayscholars (74.9%) and only few were hostelers (25.1%). Positive family history of obesity was present among 9.5% of the study population.

### *Nutritional status of the study population*

Nutritional status according to BMI for Age was calculated. In this study most of the adolescents were having normal BMI for their age (65.4%). 26.2% of the subjects had overweight for their age and 8.4% of the subjects were undernourished.

**Table 1: Frequency of study population based on age.**

Stage (in years)	Frequency	%
<b>Early adolescence (10-13)</b>	22	12.3
<b>Middle adolescence (14-16)</b>	124	69.3
<b>Late adolescence (17-19)</b>	33	18.4

**Table 2: Assessment of knowledge regarding obesity.**

Questions	0		1	
	Incorrect knowledge	%	Correct knowledge	%
<b>1. Body mass index (BMI) is used to classify a person as obese</b>	64	35.8	115	64.2
<b>2. Apart from BMI ,waist circumference and waist/hip ratio can be used to assess obesity</b>	110	61.5	69	38.5
<b>3. Obesity can be caused due to overeating, especially fast foods</b>	17	9.5	162	90.5
<b>4. A person may be obese due to his parents being obese</b>	99	55.3	80	44.7
<b>5. Obesity can be prevented</b>	27	15.1	152	84.9
<b>6. Obesity can occur at any age</b>	28	15.6	151	84.4
<b>7. Obesity is an indicator of good health</b>	15	8.4	164	91.7
<b>8. Obesity is a problem in the world today</b>	50	27.9	129	72.1
<b>9. Obesity is a problem in India</b>	95	53.1	84	46.9
<b>10. Obesity is a key risk factor for other diseases like diabetes, hypertension</b>	44	24.6	135	75.4
<b>11. Obesity is more in urban areas.</b>	55	30.7	124	69.3
<b>12. Obesity can be corrected by surgical methods</b>	106	59.2	73	40.8
<b>13. Obesity may lead to cancer especially breast and colon cancer</b>	128	71.5	51	28.5

**Table 3: Adolescents according to knowledge about obesity.**

Knowledge	Score	Frequency	%
Low	<8	83	46.4
Moderate	8-10	84	46.9
High	>10	12	6.7
Total	13	179	100

**Knowledge regarding obesity among study population**

For assessing the knowledge of adolescents towards obesity, a set of 13 questions were given. Students who gave right answers were given a score of 1 and those who were wrong or unaware were given a score of 0. In these questions, the total score is 13 and of it, a student who scores <8 is considered to have low knowledge, score of 8-10 is considered to have moderate knowledge and those who score >10 is considered to have high knowledge on obesity according to Bloom's cutoff criteria.

Only 6.7% of them have high knowledge about obesity. 46.4% have low knowledge and 46.9% have moderate knowledge on obesity.

**Attitude towards obesity in study population**

A set of 15 questions were given. Depending on the positive, negative or neutral attitude, scores of 4, 0 and 2 were given. Total score was 60. Those students with score <36 are said to have negative attitude towards obesity. Score of 36-48 suggests neutral attitude and score >48 suggests positive attitude.

14.6% of adolescents have negative attitude. 68.2% have neutral attitude and only 7.3% have positive attitude towards obesity.

**Correlation between knowledge and attitude**

Pearson correlation coefficient (r)=0.085, p=0.260.

**Positive correlation**

As age increases, there is a positive attitude towards obesity and increased knowledge about obesity.

Females have better attitude towards obesity compared to males and no significant association with knowledge.

**Table 4: Assessment of attitude towards obesity.**

	Positive attitude	%	Neutral attitude	%	Negative attitude	%
1.It's good for a person to look obese	5	2.8	36	20.1	138	77.1
2.Obese people tend to be more lazier and self-indulgent than normal weight person	90	50.3	43	24	46	25.7
3.Obese people have no will power	23	12.9	42	23.5	114	63.7
4.Obese people are unattractive	25	14	62	34.6	92	51.4
5.Obese people have poor self control	44	24.6	68	38	67	37.4
6.Obese people have no endurance	38	21.2	79	44.1	87	34.7
7.Obese people are inactive	57	31.9	58	32.4	64	35.7
8.Obese person can lose weight and maintain that weight lose by appropriate dieting and physical exercise	151	84.3	16	8.9	12	6.7
9.Obesity management is necessary in long term	134	74.9	33	18.4	12	6.7
10.Obese people will have poor Interpersonal relationships	28	21.2	59	33	82	45.8
11. Obese people's academic performance will be poor	36	20.1	31	17.3	112	62.6
12.Obese people cannot do well in sports and arts	40	22.3	53	29.6	86	48
13.Obese individuals have difficulties in achieving their dreams in life	37	20.7	46	25.7	96	53.7
14.Supportive counseling can help obese individuals to come up in their daily performance	120	67.1	46	25.7	13	7.2
15.Health education about the risk associated with obesity plays an important role in preventing it	135	75.4	37	20.7	7	3.9

**Table 5: Adolescents according to attitude towards obesity.**

Attitude	Score	Frequency	%
Negative	<36	44	24.6
Neutral	36-48	122	68.2
Positive	>48	13	7.3
Total	60	179	100

**Table 6: Association of age with knowledge and attitude.**

Age	Frequency	Mean score for attitude	P value	Mean score for knowledge	P value
Early adolescents	22	28.77	<0.001		0.530
Middle adolescents	124	39.31			
Late adolescents	33	48.52			

**Table 7: Association of gender with attitude.**

Gender	Frequency	Mean attitude	P value
Male	90	38.08	<0.001
Female	89	41.36	

**Table 8: Association with place of stay.**

Stay	Frequency	Mean knowledge score	P value	Mean attitude score	P value
Day scholar	134	7.21	0.039	39.60	0.685
Hostler	45	8.04		40.04	

**Table 9: Association of academic performance with knowledge and attitude.**

	Pearson correlation coefficient(r)	P value
Marks and knowledge	0.020	0.802
Marks and attitude	0.283	0.0001

**Association with religion**

No significant difference in knowledge and attitude of children, belonging to different religion (p value being 0.166 and 0.519).

**Association with type of family**

There is no significant difference in knowledge and attitude of children, whether they belong to nuclear, joint or 3 generation family (P value being 0.292 and 0.193).

Compared to day scholars, hostlers have better knowledge and attitude towards obesity.

**Association of BMI with knowledge and attitude of adolescents**

Children with more BMI have better attitude towards obesity. Pearson correlation coefficient is 0.267 and P value being 0.000.

As academic marks or performance increases, knowledge and attitude increases.

**DISCUSSION**

The present study assessed the knowledge and attitudes of adolescents towards obesity in a representative sample of high school children in Thrissur district. Findings have showed that majority of children have intermediate knowledge on obesity but very small percentage had positive attitude towards obesity. Prevalence of obesity in the study population was not very significant though obesity has to be kept under control for those children so that they develop a healthy body as well as a healthy body image perception. Regardless of differences in methodological approaches, different studies are as follows. In a similar study 100 students were selected of which 93% had below average knowledge on obesity and about 6% had good knowledge.<sup>6</sup> The level of average knowledge among adolescents is higher in my study population than other similar studies. Level of education and motivation may be better in this area compared to other areas where similar studies are conducted. Other studies with similar objectives also gives 1% of students with adequate knowledge and 32% with moderate knowledge on obesity.<sup>8</sup> These studies conducted outside state suggests that level of education may be better in this state than outside. In the study none of the students had favourable attitude towards obesity compared to 7.3% of the study population who had positive attitude towards obesity.<sup>8</sup> Possible explanation for this may be as

education or knowledge increases, students exhibit better attitude and their outlook about obese individuals increases. In this study there is a negative correlation between knowledge and attitude.<sup>8</sup> In this study, there is a positive correlation between attitude and knowledge which can be explained probably by education and better knowledge than that has a direct impact on behaviour and attitude. In the same study, knowledge had an association with age, sex and type of family and attitude had an association with respect to type of family. As academic performance increases, both knowledge and attitude increases. In my study, knowledge increases as age increases, probably due to increase in education but there is no significant difference regarding type of family and sex. Just those females have better attitude. Better knowledge is seen more among hostlers than day scholars probably due to increased interaction between students in hostel. Children who have more BMI have better attitude because they get to know their feelings better. This is the possible explanation. BMI has no association with knowledge in any of the studies.

## CONCLUSION

Only a small percentage of students have high knowledge on obesity. About one-fourth of study population have negative attitude towards obesity and only 7% with positive attitude. There is positive correlation between knowledge and attitude. As age increases, there is increase in positive attitude towards obese individuals. Female students have better attitude towards obesity. Better knowledge is seen among students who are hostlers compared to day scholars. As academic performance increases, knowledge and attitude increases. Better attitude is seen in those children with better marks. Children who have more BMI have better attitude.

## Recommendations

Health education seminars can be conducted to help students in knowing more about obesity, its role in morbidity and mortality. Classes can also be given to

develop a healthy body image perception among adolescents.

*Funding: No funding sources*

*Conflict of interest: None declared*

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

## REFERENCES

1. MacMillan Dictionary for students. MacMillan Pan Limited. 1981: 14
2. Adolescents in India: A profile; UNFPA.
3. Available at: <http://apps.who.int/adolescent/second-decade/section3/page2/mortality.html>. Accessed on 3 January 2019.
4. Available at: <http://apps.who.int/adolescent/second-decade/section3/page4/dalys.html>. Accessed on 3 January 2019.
5. Lissau I, Overpeck MD, Ruan WJ, Due P, Holstein BE, Hediger ML, et al. "BMI and overweight in adolescents in Europe, Israel and U.S. Arch Pediatr Adolesc Med. 2004;158(1):27-33.
6. Mangalathil TX, Kumar P, Choudhary V. Knowledge and attitude regarding obesity among adolescent students of Sikar, Rajasthan. IOSR J Nursing Health Sci. 2014;3(2):44-8.
7. Ebbeling CB, Pawlak DB, Ludwig DS. "Childhood obesity: Public health crisis, commonsense cure". Lancet. 2002;360(9331):473-82.
8. Kaur R, Kumari R, Samuel. A study to assess the knowledge and attitude of adolescents on obesity at selected Senior Secondary Schools in Amritsar. Int J Edu Applied Res. 2014;4(1):35-9.

**Cite this article as:** Shaji G, Navya CJ, Mathu A, Joshy V. A study to assess the knowledge and attitude of adolescents towards obesity in a private school in Thrissur district Kerala, India. *Int J Community Med Public Health* 2019;6:3140-4.