International Journal of Community Medicine and Public Health
Srinivas N et al. Int J Community Med Public Health. 2017 Apr;4(4):954-958
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20170950

Original Research Article

Prevalence of overweight and obesity, body image perception and weight control practices among college going adolescent girls in Mysore District, Karnataka

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Received: 08 February 2017
Accepted: 27 February 2017

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ABSTRACT

Background: The World Health Organization has described obesity as one of today's most neglected public health problems. Body image is a psychosocial dimension of body size that encompasses both perceptual and attitudinal factors and has been associated with eating disorders. Adolescents are becoming over conscious of their body image. Body weight perception refers to the personal evaluation of one's weight irrespective of actual BMI. The objectives of the study was to assess the prevalence of overweight and obesity, body image perception and weight control practices among college going adolescents girls and to determine differences between existing BMI and body image perception among college going adolescents girls.
Methods: A cross-sectional study was conducted among college going adolescents girls in Mysore district**,** two colleges were randomly selected and 661 study participants were participated in the study. Data was collected through a self-administered pre tested structured questionnaire and height and weight were measured using standard tools to calculate body mass index.
Results: Among the study percipients prevalence of overweight and obesity was found to be 36 (5.4%) and 43 (6.5%) respectively, whereas 70 (10.6) feel they are obese and 386 (59.2%) were ever practiced weight control methods. Body image perception and actual weight were found to statistically significant.
Conclusions: Perception about body image as obese was higher among adolescents. Hence adolescents should be given education regarding body mass index and expected BMI for their age and about appropriate dietary practices.

Keywords: Prevalence of obesity, Body image perception, Weight control practices

INTRODUCTION

Globally, non-communicable diseases are increasingly recognized as a major cause of morbidity and mortality. The countries of the South-East Asia region are facing a double burden, with a heavy load of infectious diseases and an increasing burden due to non-communicable diseases.[1] The increasing burden of non-communicable diseases, particularly in developing countries including India, threatens to overwhelm already stretched health services. Several diseases come under the umbrella of non-communicable diseases and more common cause is obesity.[2,3] The World Health Organization has described obesity as one of today's most neglected public health problems. Following the increase in adult obesity, the proportion of children and adolescents who are overweight and obese have also been increasing.[4]

Body weight plays key role for adolescent students for their physical look and psychological wellbeing. Body weight is associated with body image and health status of students.[5] In India, body shape and weight is directly

associated with their social life and future marriage life, especially for girls. In urban areas, adolescents are involved in various dietary activities to reduce body weight and they are more conscious for their body image than their rural counterparts.[6]

In countries like India, which are typically known for a high prevalence of under nutrition, a significant proportion of overweight and obese children now coexist with those who are under nourished.[7] The present study was undertaken to estimate the magnitude of overweight/obesity and to know body image perception and weight control practices among college going adolescents girls in southern India. The study was done with the objectives to assess the prevalence of overweight and obesity, body image perception and weight control practices among college going adolescents girls and to determine differences between existing BMI and body image perception among college going adolescents girls.

METHODS

A cross-sectional study was carried out during June-September 2013, in pre-university colleges (11th and 12th) of Mysore District. All college going adolescents from 11th and 12th standard from the selected schools were the study participants.

JSS educational institutions constitute around 30 percentage of educational institutions in Mysore district. The complete list of all colleges under JSS Mahavidhyapeeta was obtained out of which two pre-university college were selected by simple random sampling by using lottery method. Permission from the school authorities was obtained after explaining the objectives as well as the method of study. All adolescent girls from 11th and 12th (PUC) standard from the selected colleges who were present and consenting to participate were included in the study.

A self-administered, pre-tested structured questionnaire was used to elicit information on their socio demographic profile, body image perception and weight control practices. Anthropometric measurements such as weight and height were recorded after standardizing the instruments. Body weight was measured (to the nearest 1 kg) with the subject standing motionless on the weighing scale with feet 15 cm apart. Height was measured (to the nearest 1 cm) with the subject standing in an erect position against a vertical scale of portable stadiometer and with the head positioned so that the top of the external auditory meatus was in level with the inferior margin of the bony orbit. Body mass index (BMI) was calculated as weight in kilograms/height in meter square. Using WHO Asia-Pacific guidelines[8] the patient's were categorized as underweight (<18.5 kg/m^2), normal or lean BMI (18.5–22.9 kg/m^2), overweight (23.0 –24.9 kg/m^2) and obese (≥25 kg/m^2).

Statistical analysis

Data was analyzed using SPSS version.22.0. The socio demographic characteristics, prevalence of overweight and obesity, body image perception and weight control practices were presented using descriptive statistics like proportions and percentages. Chi square test was applied at 95 per cent confidence interval (95% CI). The p value <0.05 was considered as statistically significant.

RESULTS

Among 661 study participants majority belong to17 years age group 363 (54.9%), majority resides in urban area 453 (68.5%), almost all were Hindu by religion 633 (95.8%) and 343 (51.9%) were using mixed diet. Overweight and obesity was more common among urban residents 62 (12.0%) and young adolescents i.e. 49 (13.5%) as shown in Table 1.

Table 1: Distribution of study participants based on socio demographic characteristics and BMI.

Variable	Category	Frequency	Normal weight	Overweight/obese
Age in years	17	363(54.9)	314(86.5)	49(13.5)
	18	298(45.1)	268(89.9)	30(10.1)
Residence	Rural	208(31.5)	191(91.8)	17(8.2)
	Urban	453(68.5)	391(86.3)	62(12.0)
Religion	Hindu	633(95.8)	558(88.2)	75(11.8)
	Others	28(4.2)	24(85.7)	4(14.3)
Diet	Veg	318(48.1	278(87.4)	40(12.6)
	Mixed	343(51.9)	304(88.6)	39(11.4)

Figures in parenthesis indicate percentage.

In this study 283(42.8) belong to low weight but normal category, 299 (45.2%) belong to normal weight category, prevalence of overweight and obesity was found to be 36 (5.4%) and 43(6.5%) respectively as given in Table 2.

Among study participants majority perceive average body image 439 (66.4), whereas 70 (10.6) feel they are obese and majority feel the reason for body image perception were self-perception 392 (59.3) and friends 231 (34.9). Majority 319 (48.3) feel desired weight to be the present weight, whereas 254 (38.4) feel it should be a little lighter as given in Table 3.

Among study participants majority perceive to be average weight, of which 42 (9.6) were found to be over-weight/obese. About 26 (3.9) feel that they are obese, of which 9 (34.6) are Overweight/Obese. Body image perception and actual weight were found to statistically significant (p=0.001) as in Table 4.

Table 2: Distribution of study participants based on prevalence of obesity by body mass index.

BMI cut off points	Significance	Frequency	Percentage
18.5-19.9	Low weight but normal	283	42.8
20-22.9	Normal	299	45.2
23-24.9	Overweight	36	5.4
≥ 25	Obese	43	6.5
Total		661	100.0

Table 3: Distribution of study participants based on body image perception.

Category	Frequency	Percentage
Body image perception		
Thin	126	19.1
Average	439	66.4
Overweight	70	10.6
Obese	26	3.9
Total	661	100
Reason for body image perception*		
Media influence	36	5.4
Friends	231	34.9
Self-Perception	392	59.3
Relatives	185	27.9
Other Reason	20	3.1
Desired weight		
Little Lighter	254	38.4
Present Weight	319	48.3
Little Heavier	88	13.3
Total	661	100

* Multiple response

Table 4: Distribution of study participants based on association between perceived weight versus actual weight.

Category	Perceived	Actual	
		Normal	Over-weight/ Obese
Thin	126(19.1)	125(99.2)	1(0.8)
Average	439(66.4)	397(90.4)	42(9.6)
Over-weight	70(10.6)	43(61.4)	27(38.6)
Obese	26(3.9)	17(65.4)	9(34.6)
Total	661(100)	582(88.1)	79(11.9)

Figures in parenthesis indicate percentage, Chi square value=77.1, p=0.001

Among study participants majority 386 (59.2%) were ever practiced weight control methods, were as 112 (17.1%) were currently practicing weight control methods. only few 64 (13.3%) were regular in practicing weight control methods, whereas only 52 (11.9) were successful in it as shown in Table 5.

Table 5: Distribution of study participants based on weight control practices.

Category	Response	Frequency	Percentage
Ever practiced	Yes	386	59.2
	No	266	40.8
	Total	652	100
Currently practicing	Yes	112	17.1
	No	546	82.9
	Total	658	100
Regularity of usage	Yes	64	13.3
	No	418	86.7
	Total	482	100
Successful outcome	Yes	52	11.9
	No	384	88.1
	Total	436	100

Among study participants majority 109 (55.5%) were using weight control method on self-advise, only few were advised by Doctor 31 (9.1%) or dietician 6 (1.7%). Majority 87 (31.4%) were used to skip meal as a weight control method, but only few 7 (2.5%) were involved in exercise as in Table 6.

Table 6: Distribution of study participants based on weight control method practiced.

Category	Frequency	Percentage
Weight control method was advised by		
Dietician	6	1.7
Doctor	31	9.1
Friends/relatives	105	30.7
Self	190	55.5
Other	10	2.9
Total	342	100
Weight control method practiced		
Dieting	49	17.7
Restricting oil intake	82	29.6
Skipping a meal	87	31.4
Not eating in between meals	27	9.7
Exercise	7	2.5
Binge eating	25	9.0
Total	277	100

DISCUSSION

This study was conceived to estimate the prevalence of overweight and obesity, body image perception and weight control practices among college-going adolescents

and to describe the factors contributing to it. The prevalence of overweight and obesity was found to be 5.4% and 6.5%, respectively and combined prevalence was found to be 11.9% in this study. A study by Prentice and Jebb reported the prevalence of overweight and obesity to be 8.5% and 3.5% respectively Which are similar to our findings.[9] A study in Mysore by Nagaraj et al showed prevalence of overweight and obesity to be 13.7 % and 6.0% respectively, and combined prevalence was 19.7% which is on higher side compared to this study.[10] The prevalence of overweight/obesity is higher among urban residents 12% in this study, which is similar to the findings of the study by Saraswathi et al.[11]

Indian adolescent female students are more conscious about their body weight and body image.[12] In this study 14.5% perceive to be overweight/obese and 59.3% feel the reason for body image perception was self-perception and friends 34.9% and 48.3% feel desired weight to be the present weight, whereas 38.4% feel it should be a little lighter. There is mismatch between body image perception and actual body weight and which is found to be statistically significant. Similar findings were observed in Kerala by Flower et al.[13] Studies by Levy and Heaton have also reported the prevalence of faulty body images among college-girls.[13]

In this study 17.1% are currently practicing weight control methods, whereas 59.2% were ever practiced weight control methods, but only 13.3% were regular in practicing weight control methods and few were successful in weight control. More than half of the girls belonging to various weight categories desired their weight to be changed. Studies conducted by Flower et al and Ash et al have observed similar findings.[13,15] In this study 55.5% were using weight control method on self-advise, only few were advised Doctor or Dietician. Weight control method usually practiced was by skipping a meal but, only 2.5% were involved in physical exercise as a mode of weight reduction.

CONCLUSION

This study found considerable differences in body weight and image perception and, prevalence of overweight/obesity. The study indicates that large proportion of the subjects could not appropriately classify their weight status. Body weight perception and dissatisfaction are major correlates for weight control practices. Overweight subjects should be better informed and empowered to follow recommended weight loss strategies. Nutrition and Health Education on importance of physical activity for college girls will have a great impact on improving the overall health.

ACKNOWLEDGEMENTS

The authors express their sincere gratitude to the JSS Mahavidhyapeeta for providing support for conducting study; all the participants for being part of the study and, postgraduates and staff, Department of Community Medicine, JSSMC, Mysore, Karnataka, India, for their continuous support.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Srinivas N, Ravi MR, Prashantha B, Prakash B. Prevalence of overweight and obesity, body image perception and weight control practices among college going adolescent girls in Mysore District, Karnataka. Int J Community Med Public Health 2017;4:954-8.