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PREVALENCE OF OVERWEIGHT AND OBESITY AMONG ADOLESCENTS OF NAVI MUMBAI: A CROSS SECTIONAL STUDY

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ABSTRACT

Introduction: Adolescence is one of the fundamental processes of life, where transformation in composition of the body along with behavioral and physiological take place making the adolescents one of the most vulnerable group of population in the community and it is extremely important to take care of their nutritional as well as health status. **Materials and methods:** The present study was carried out to find the prevalence of obesity in adolescents of Navi Mumbai, so that; their health and well-being can be improved. A total of 315 adolescents both male and female within the age range of 15-19 were selected after proper sample size calculation. For data collection a pre-tested self-report questionnaire was used in order to find out the level of obesity and factors leading to overweight and obesity. **Results:** Our study reveal that 74% of the adolescents living in Navi Mumbai had a normal body mass index (BMI)-for-age, 17.4% are overweight while 8.5% are obese. **Conclusion:** Our study concludes that the level of overweight and obesity increase with an increase in age and grade.

KEYWORDS: Adolescents; Obesity; Overweight; Body mass index (BMI).

INTRODUCTION

Adolescence is a phase of growth from childhood to adulthood characterized by structural body changes with unique distribution of body fat quantity and location along with physiological changes. Adolescents constitute 1/6th of the world's population and there are more than 1.2 billion adolescents globally forming 18% of world population while 88% of the adolescents live in developing countries. India is the leader in the group of adolescents globally while India ranks 4th globally with an adolescent population of 41 million. The most concerning point regarding adolescents is that the urban population of adolescents which was 50% in 2009 will rise to 70% in 2050 and the largest increase will be in developing countries, an alarming situation putting additional burden to accommodate the health and well-being of this huge chunk of population.[1]

World Health Organization (WHO) has expressed concern about the prevailing trends of childhood obesity globally. The global prevalence of overweight and obesity has risen from 1980 to 2013 by 47.1% for children and adolescents. The prevalence is more demonstrating in developed countries rising from 16.9% to 23.8% in males, while 16.2% to 22.6% in females. The data from developing countries shows the rise in prevalence from 8.1% to 12.9% in males, while 8.4% to 13.4% in females.[2]

The knowledge about one's ideal body weight also has a role and is major driving force for the weight management strategies. The studies have shown that adolescents who have normal BMI-for-age but perceive themselves as obese or overweight are at greater risk for developing eating disorders. This wrong perception can lead them to potentially harmful behaviors like dieting, slimming pills, or diuretics, etc. although the onset of exercise to lose weight has no harmful effect.[3] On the other hand, if a person is obese or overweight but perceives oneself to be normal, this self-perception can predispose such individuals to co-morbid conditions, which can be easily avoided by giving them awareness of the ideal BMI-for-age. Although, the topic of relationship between self-perception of ideal body size and obesity has been studied in the developed countries, the data on this topic in developing countries is scarce and there is a need to explore this in the developing countries. The risk of being overweight in adulthood is greater with higher degrees of overweight in childhood and in the later adolescent years.[4] Being overweight, in turn, is recognized as a significant risk factor for chronic diseases such as arteriosclerosis, ischemic heart disease and diabetes; all of which are major causes of morbidity

and mortality.[5,6] Overweight during adolescence also has social, economic, and psychological consequences, including effects on academic performance and psychosocial functioning.[7] Obesity has numerous socially related consequences in later life such as lower wages, less likelihood of marriage, and less education.[8] In order to improve the health and well-being of adolescents, this study was designed to assess the frequency of obesity pertinent to the adolescent population of Navi mumbai.

METHODOLOGY

A cross-sectional study was conducted by interviewing 315 adolescent subjects between 15-19 years of age from Navi mumbai. Subjects were selected through convenient sampling. Children with physical or mental disability, and reported chronic illness were excluded. A guided questionnaire was circulated among the adolescents by using convenient sampling technique to assess their; age, grade, obesity trend in the family, knowledge and perception about weight, knowledge of ideal BMI, weight check in one year, self-perception, and BMI-for-age. The data was entered and analyzed using SPSS version 21.

RESULTS

A total of 316 adolescents were assessed and frequencies and percentages of all the variables were calculated. Age and grade wise frequency of adolescents were evaluated (Table 1). Out of the total 316 respondents, 167 (52.8%) were females and 149 (47.1%) were males. Maximum adolescents were found in age group 16-17 years, which were 85 (26.9%), while the minimum respondents were found in the age range of 17-18 years which were 70 (22.15%). There were 167 (52.85%) students from the O levels, while 149 (47.15%) were from the A levels.

Variables		Frequency	Percentage
Gender	Male	149	47.2
	Female	167	52.8
Age	15-16	82	25.9
	16-17	85	26.9
	17-18	70	22.2
	18-19	79	25.0
Grade	O-levels	167	52.8
	A-levels	149	47.2
Knowledge about ideal BMI	Do not know	146	46.2
	Know	170	53.8
Weight checked in last one year	Not checked	83	26.3
	Checked	233	73.7
Self-perception	Just the right weight	198	62.7
	A bit too fat	79	25.0
	Fat	39	12.3

Maximum frequency of 187 was observed in adolescents who thought that none of their parent was obese, while 129 said that at least one of the parents was obese. There were 170 adolescents who had knowledge about the ideal weight for their age while 146 had no knowledge of what their ideal weight should be. There were 233 adolescents who had their weight checked in the last one year, while 83 of the adolescents had not checked their weight in the last one year. The maximum frequency of 198 was observed in adolescents who considered themselves to be of right weight, while only 39 considered that that are far too fat (Table 1). The BMI of the respondents was a very important variable which was based on the BMI-for-age of the individuals. When calculated, 234 respondents had a BMI-for-age value of less than +1 Z-score, 55 had a BMI-for-age value of greater than +1 Z-score, while 27 had a BMI-for-age value of greater than +2 Z-score. In terms of percentage, 74% respondents had a BMI for-age value of less than +1 Z-score, 17.4% had a BMI-for-age value of greater than +1 Z-score, while 8.5% had a BMI-for-age value of greater than +2 Z-score.

DISCUSSION

Obesity is considered a disease in its own right and in this study adolescents were found with this problem. Hence, it is also considered as one of the key risk factors for other chronic diseases together with smoking, high blood pressure and high blood cholesterol. In the analysis carried out for World Health Report (WHR) 2002, approximately 58% of diabetes, 21% of ischemic heart disease and 8-24% of certain cancers globally were attributable to a BMI above 21 Kg/m^2. Several studies support our findings.[9-11] Body mass index is the most frequently and widely used method due to its simplicity and ease of application.[12] In this study, BMI was used for categorizing individuals in normal, overweight and obese categories according to previous standards. Obesity are now dramatically on the rise in low and middle-income countries particularly in urban setting.[13] Supporting this statement studies from countries such as India [14] and Sri Lanka [15] also show the high prevalence of overweight and obesity in their population and more so in urban, affluent settings. The prevalence of obesity, though representing a small proportion of our community, constitute a high prevalence of overweight

and obesity i.e. (17.4%) and (8.5%) respectively. Our study is comparable to the data available from other countries like India, Sri Lanka, Qatar and Iran.[14-16] In our study, there is high prevalence of overweight and obesity compared to the above study.

CONCLUSION

Our study conclude that the obesity and overweight is prevalent in students of urban Navi mumbai. There is a high likelihood that a person who is overweight or obese in adolescence will carry it in the adult life and thus will be exposed to life-threatening non-communicable diseases. However, an immediate intervention on healthy diet might be started to overcome this situation.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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