Obesity Prevention Behavior among Adolescent Girls in Selected Arts and science, Engineering and Nursing Colleges.

Ms. Martina Susan K*, Dr. Nesa Sathya Satchi**, Dr. Latha Venkatesan***

*Tutor, Madha College of Nursing,

** Principal & Professor, Apollo College of Nursing, Chennai,

***Principal cum Professor, College of Nursing, AIIMS, New Delhi, India

Correspondence email: drnesasathya_s@apollohospitals.com

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ABSTRACT

Adolescent obesity is considered one of the most serious public health challenges of the 21st century. Globally, around one in 10 young people aged 5–17 years are overweight or obese; with levels increasing rapidly in many countries and regions in recent years. This study was conducted to assess the Obesity Prevention Behavior among Adolescent Girls in Selected Arts and Science, Engineering and Nursing Colleges, Chennai. Methods: A comparative study was conducted among Adolescent Girls using survey approach in Selected Arts and Science; Engineering and Nursing Colleges. Samples were selected in two phases (Phase I and Phase II). In phase one; the participants were selected using a total enumerative sampling method. All adolescent girls were screened for height, weight, and body mass index, and waist-hip ratio to identify the obese adolescent girls. In phase two; all identified obese adolescent girls were included in the study. The identified adolescent girls were given the checklist to assess the obesity prevention behavior on physical activity, sleep behavior & dietary habits. Results: Three hundred adolescent girls were screened for obesity among them overall 33% of adolescent girls were obese in Arts and Science, Engineering, and Nursing colleges respectively. Study findings revealed that the mean and standard deviation of obesity prevention behavior was M=42.70, SD=3.909, M=43.94, SD= 2.977, M=42.97, SD=3.753 in Arts and Science, Engineering and Nursing colleges. Conclusion: The findings of the study revealed that adolescent girls had highly acceptable behavior in art and science, engineering, and nursing colleges.

Key Words: Obesity, Obesity Prevention Behavior, Adolescent Girls.

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INTRODUCTION

India is the second-most populous country in the world that comprises 17% of the world's population and contributes to 16% of the world's deaths due to obesity. According to the World health organization (WHO), the worldwide prevalence of obesity nearly tripled between 1975 and 2016. In 2019, an estimated 38.2 million children under the age of 5 years were overweight or obese. Once

considered a high-income country problem, overweight and obesity are now on the rise in low- and middle-income countries, particularly in urban settings. In Africa, the number of overweight children under 5 has increased by nearly 24% percent since 2000. Almost half of the children under 5 who were overweight or obese in 2019 lived in Asia.

The global action plan on physical activity 2018–2030 encourages more active people for a healthier world" provides effective and feasible policy actions to increase physical activity globally. WHO published ACTIVE a technical package to assist countries in planning and delivery of their responses.

New WHO guidelines on physical activity, sedentary behavior, and sleep in children under five years of age were launched in 2019. Most overweight or obese children now live in developing countries, where the rate of increase has been much higher than that in developed countries and regions, largely because of changes in dietary practices and increasingly sedentary lifestyles (Gupta, 2012). In Tamil Nadu, it indicates a strong influence of local environmental and socio-cultural factors implicating the pattern of overweight and obesity.

The adoption of healthful lifestyles by individuals and families can result in a reduction in many chronic diseases and conditions of which obesity is the most prevalent. Obesity prevention, in addition to treatment, is an important public health priority. The International Classification of Diseases 11 (ICD-11) defines obesity as *"a chronic complex disease defined by excessive adiposity that can impair health. It is in most cases a multifactorial disease due to obesogenic environments, psycho-social factors, and genetic variants. In a subgroup of patients, single major etiological factors can be identified (medications, diseases, immobilization, iatrogenic procedures, monogenic disease/genetic syndrome). Body Mass Index (BMI) is a surrogate marker of adiposity calculated as weight (kg)/height² (m²).

The BMI categories for defining overweight vary by age and gender in infants, children, and adolescents. Prevention of childhood obesity remains a public health priority because obesity is the most prevalent chronic health condition in the pediatric population. Although many social sectors need to be mobilized to completely address this problem, pediatric primary care has a unique role to play, it should be a resource for the community, and can be an integral part of the solution. It highlights the need for monitoring the obesity prevention behavior among adolescents to plan for appropriate measures to manage the problem effectively.(WHO)

Nurses play a vital role in the prevention and management of obesity among adolescents. It highlights the need for monitoring the obesity prevention behavior among adolescents to plan for appropriate measures to manage the problem effectively. However, adolescents studying in different disciplines may differ in their obesity prevention behavior. Hence this study was conducted to assess and compare the obesity prevention behavior among Adolescent Girls in Selected Arts and Science, Engineering, and Nursing Colleges.

Statement of the Problem

A Comparative Study to Assess the Obesity Prevention Behavior among Adolescent Girls in Selected Arts and Science, Engineering and Nursing Colleges, Chennai.

Objectives of the Study

1. To determine the prevalence of overweight /obesity among adolescent girls in selected arts and science, engineering and nursing colleges.

2. To assess the level of obesity prevention behavior among adolescent girls in selected arts and science, engineering and nursing colleges.

3. To compare the obesity prevention behavior among adolescent girls between selected arts and science, engineering and nursing colleges.

4. To find out the association between selected background variables and obesity prevention behavior between adolescent girls in selected arts, engineering, and nursing colleges.

Null Hypotheses

H01 There will be no significant association between obesity among adolescent girls and the types of colleges.

H02 There will be no significant difference in obesity prevention behavior among adolescent girls between Arts and science, engineering and nursing colleges.

H03 There will be no significant association between selected demographic variables and obesity prevention behavior among adolescent girls in Arts and science, engineering and nursing colleges.

MATERIALS AND METHOD

The study was conducted using a comparative research design at selected Colleges, Chennai. The study was conducted in two phases (Phase I and Phase II). The participants were selected using a total enumerative sampling method. All adolescent girls were screened for obesity by measuring their height, weight, and body mass index, and waist-hip ratio. In phase two; all identified obese adolescent girls were included in the study. The identified adolescent girls were given a checklist to assess the obesity prevention behavior on physical activity, sleep behavior & dietary habits. An extensive review of literature and guidance by experts laid the foundation for the development of study instruments. The tools used for data collection were Demographic variable proforma, Obesity screening tool for adolescent girls, Checklist to assess the Obesity Prevention Behaviour of adolescent girls which were developed by the researcher. The validity was obtained from various experts and reliability was established.

RESULT AND DISCUSSION

Collected data were analyzed using appropriate descriptive and inferential statistics based on the objectives of the study in SPSS-20 and presented through tables and graphs.

Majority of the adolescent girls were from the nuclear family (64%, 32%, 71%), aged 19 years (52%, 48%, 40%), with a monthly income of 10001- 20000 (48%, 42%, 11%) and most of them (85%, 74%, 94%) were non-vegetarian in Arts and Science, Engineering and Nursing colleges respectively.

The clinical variables of participants revealed that, 34%, 60%, 46% of the adolescent girls were between 151-160 centimeters tall and weight was greater than 60 kilograms (37%,33%,48%), with Body Mass Index between 18.5 - 24.9 (66%, 68%, 59%) in Arts and Science, Engineering and Nursing colleges respectively.

The overall prevalence of obesity among adolescent girls which was 33%. With regard to college wise 33%, 31% and 35% of adolescent girls were obese in Arts and Science, Engineering and Nursing Colleges respectively. Similar findings were also reported in a study conducted by Jagadesan (2014) to assess the prevalence of overweight and obesity among children and adolescents in Chennai. The study was carried out on 18,955 children (age 6–11 years) and adolescents (age 12–17 years) across 51 schools (31 private & 20 government).

The prevalence of overweight/obesity was significantly higher in private compared to government schools both by the International Obesity Task Force (IOTF) criteria [private schools: 21.4%,

government schools: 3.6%, (OR: 7.4, 95% CI:6.3–8.6; *P*<0.001) and by Khadilkar criteria (private school: 26.4%, government schools: 4.6% OR: 6.9, 95% CI:6.2–7.8; *P*<0.001). Overweight/obesity was higher among girls (IOTF: 18%, Khadilkar: 21.3%) compared to boys (IOTF: 16.2%, Khadilkar: 20.7%) and higher among adolescents (IOTF: 18.1%, Khadilkar: 21.2%) compared to children (IOTF: 15.5%, Khadilkar: 20.7%).

Table 1: Frequency and Percentage Distribution of Level of Obesity Prevention Behaviour among Adolescent Girls in Arts and Science, Engineering, and Nursing Colleges.

Group	Obesity Prevention Behavior					
	Healthy Behavior		Moderately Healthy Behavior		Unhealthy Behavior	
	f	%	f	%	f	%
Arts and Science (n=33)	24	73	9	27	-	-
Engineering (n=31)	27	87	4	13	-	-
Nursing (n=35)	28	80	7	20	-	-

Table 1 reveals that the majority of the adolescent girls 73%, 87%, 80% had healthy behavior in Arts and Science, Engineering, and Nursing colleges respectively. The above findings are different from the findings of a cross-sectional survey done to find out the prevalence and clustering patterns of multiple health behaviors among a sample of adolescents in the UK by Pearson (2009). One hundred and seventy-six adolescents aged 12–16 years (49% boys). Adolescents wore accelerometers for seven days and completed a questionnaire assessing fruit, vegetables, and breakfast consumption.

The prevalence of adolescents meeting the physical activity ($\geq$ 60 minutes moderate-to-vigorous physical activity/day), fruit and vegetable ($\geq$ 5 portions of FV per day), and breakfast recommendations (eating breakfast on $\geq$ 5 days per week), and clustering patterns of these health behaviors were described. Boys were more active than girls (p < 0.001) and younger adolescents were more active than older adolescents (p < 0.01). Boys ate breakfast on more days per week than girls (p < 0.01) and older adolescents ate more fruit and vegetables than younger adolescents (p< 0.01). Almost 54% of adolescents had multiple risk behaviors and only 6% achieved all three of the recommendations. Girls had significantly more risk factors than boys (p < 0.01).

Table 2: Association between Obesity among Adolescent Girls in Arts and Science, Engineering and Nursing Colleges.

Colleges	Obese	Normal	χ^2 df = 2	P-value

Arts and Science (n = 100)	33	67		
Engineering (n = 100)	31	69	0.362	p > 0.05
Nursing (n = 100)	35	65		

The above table shows that there was no significant association between obesity among adolescent girls and the type of colleges. Hence the null hypothesis H_01 There will be no significant association between obesity among adolescent girls and the type of colleges was retained.

Table 3: Comparison of Mean and Standard Deviation of obesity prevention behavior among adolescent girls between assessments in Arts and Science, Engineering and Nursing Colleges (ANOVA)

Scores	n	Maximum score	Mean	SD	F value	p-value
Global Score	Arts 33	60	42.70	3.91	1.047	0.355
	Eng n=31		43.94	2.97		
	Nsg 35		42.97	3.75		

Table 3 reveals that, there was no significant difference in obesity prevention behaviour among adolescent girls between Arts and Science, Engineering, and Nursing colleges (p>0.05). Hence the null hypothesis Ho2; There will be no significant difference in obesity prevention behaviour among adolescent girls between Arts and science, engineering, and nursing colleges was retained.

Obesity Prevention Behavior among Adolescent Girls in relation to physical activities revealed that 66.66% of Arts & Science adolescents do not involve in any household chores and 39.39% spend time watching television during their leisure time. Almost all the engineering students (93.54%) go for morning/evening walks for a minimum of half an hour but (58.06%) verbalized they don't exercise regularly. Nearly half of the nursing students (54.28%) said for recreation they participate in outdoor games, have physical education class in college every week (51.42%) and (57.14%) said they participate in athletic events, (48.57%) said they do not use the elevator (74.28%) walk whenever going out but (57.14%) do not regularly go for indoor play.

Sleep behavior of the adolescents showed that (69.69%) avoid going to bed even though it is time to

go to sleep and usually have disturbed sleep. Among the engineering students, (48.38%) do something active near bedtime to tire themselves (64.51%) take a nap when possible. Nearly half of them (58.06%) verbalized said woke up full of energy in the morning but (48.38%) said they get sleepy during class. Among nursing students, 54.28% said they usually get up early from bed.

Dietary habit findings of adolescents revealed that (51.51%) of Arts & Science adolescents at least one serving of vegetables or salad a day. The majority of the engineering college adolescents (70.96%) usually snack with crisp (67.74%) & (61.29%) include some chocolate and/or biscuits. Half of the engineering college adolescent girls (51.61%) don't snack between meals. Around (34.28%) of nursing students avoid eating fried foods, (48.57%) often eat sweet snacks between meals (51.42%) buy pastries or cakes but do not drink carbonated drinks.

There was no significant association between selected background variables and obesity prevention behavior among adolescent girls in Arts and Science, Engineering and Nursing colleges. Hence the null hypothesis H_03: There will be no significant association between selected Background variables and obesity prevention behavior among adolescent girls in Art and science, Engineering and Nursing colleges were retained.

CONCLUSION

In recent days, when both parents are employed, they are also involved in their work and don't care much about children's health. Therefore, children and adolescents usually try to engage themselves in watching television and playing games on mobile and electronic devices and become physically inactive. The study findings of this study revealed that adolescent girls had highly acceptable behavior in art and science; engineering and nursing colleges. As a result, children become obese and end up with various physical and psychological problems. Nurses play a vital role in the prevention and management of obesity among adolescents. The Nurse Administrators have a key role to play in conducting innovative workshops, continuing nursing education, and conferences to enhance the updated knowledge on obesity prevention behavior.

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