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# A Study to Determine the Prevalence of Childhood Obesity and Its Associated Factors Among School Children at Selected Higher Secondary Schools of Murshidabad with A View to Conduct an Awareness Programme

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**Abstract**: A study to determine the prevalence of childhood obesity and its associated factors among school children at selected higher secondary schools within you to conduct an awareness programme. The objectives of the study are to find the prevalence of obesity among school children, to find associations between prevalence of childhood obesity with their socio demographic variables, to validate and conduct awareness program on prevention of childhood obesity. In this study a survey approach was used and descriptive study design was selected. 116 samples were selected by using probability, stratified random sampling technique. The reliability of the tool was established by Spearman's correlation coefficient formula where (r=0.99). The data was collected by using the tools socio demographic profile, weighing scale and stadiometer. The results of the present study were the prevalence of overweight 11.20% and obesity 1.73%.

**Key words:** Prevalence, Childhood obesity.

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**Introduction:**

The childhood is the time which is full of fun and memorable time in anyone's life. It is the golden period of time in which children exposes gradually to the external environment and learn many new things. They suffer from various type of communicable and non-communicable diseases like Diabetes Mellitus, Cancer etc. Some of this non-communicable disease arises during their adulthood but the risk factor identified in their lifestyle practices like consumption of fast food, lack of exercise, less physical activity etc. This risky lifestyle practices are associated with childhood obesity.

This research aims to determine the prevalence of childhood obesity and its associated factors among school children in selected higher secondary schools of Murshidabad. The overarching purpose is to conduct an awareness program aimed at improving awareness and minimizing childhood obesity. The study's objectives include identifying the prevalence of obesity among school children, exploring associations between childhood obesity and selected socio-demographic variables, and validating and conducting an awareness program for obesity prevention. Assumptions include the honest response of school children during the survey, their willingness to participate in the awareness program, a reduction in physical activity, an increased habit of consuming fast food, and a potential lack of awareness about the consequences of obesity among children. The study is delimited to children in standard VII to VIII in the selected schools of Murshidabad.

The operational definition of prevalence in this study refers to all current cases of obesity (old and new) at a given point in time (Aug 23 to Sep 13) among estimated children of VII and VIII standard in Murshidabad district. Obesity is defined as a BMI above the 95th percentile for age in both boys and girls, with underweight, healthy weight, overweight, and obesity categorized based on BMI percentiles.

**Research Methodology:**

The research adopts a quantitative survey approach with a non-experimental descriptive study design, conducted at Ladhuram Tosniwal Sarada Bidya Mandir for the main study and GitaRam Gurukul for the pilot study.

The population comprises school-going children, and the sample includes students of class VII and VIII present during the study period. The sample size for the main study is 116, while the

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pilot study involves 36 participants. Probability stratified random sampling is employed, with inclusion criteria covering school-going children of standard VII and VIII who are present during the study and willing to participate. Exclusion criteria include children with chronic diseases or those taking long-term medication.

Variables of the study include the research variable of childhood obesity prevalence and demographic variables such as age, gender, activity level, food habits, and sleep patterns. Research tools include a socio-demographic profile questionnaire, a weighing scale, and a stadiometer, utilizing self-reporting and observation techniques. Reliability testing through the test-retest method yields high scores for the weighing scale (0.99) and stadiometer (0.99). Ethical considerations involve obtaining consent from the principal of GitaRam College of Nursing and the Headmaster of Ladhuram Tosniwal Sarada Vidya Mandir.

The plan of analysis includes sections for describing demographic characteristics, presenting frequency distribution and percentage of BMI, determining the prevalence of obesity among school children, and exploring the association between obesity prevalence and socio-demographic variables. The study aims to contribute valuable insights for addressing childhood obesity and promoting awareness in the school setting.

**Results:**

**Section- A:**

In the present study total 116 students were participated. Out of 116 student majority 96(82.76%) were in the age group of 12 to 14 years and only 20 (17.24%) of them were in the age group of>15 to16 yours; Among them 58(50%) were female and 58 students are (50%) male; Equal number of students were participated from class VII and VIII. More than half of students 59 (50.87%) have reported that they do not have the history of obesity in their family and only 57 students (49.13%) have reported about their family history of obesity; Out of 116 students, Majority 82(70.69%) belonging from nuclear family, only 34 students (29.31%) were belonging from joint family. Maximum students 106 (91.38%) were non-vegetarian, only ten students (8.62%) were vegetarian; Comparatively more number of students 39 (33.62%) reported that they consume fast food once in a month or less, 37 students (31.90%) consume fast food once in a week, 32 students (27.58%) consume fast food 2-3 days in a week and only 8 students consume fast food every day; Out of 116 students 30 (25.87%) reported that they perform outdoor games 2 to 3 days in a week, only 21 students (18.10%) once in a week and

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34students (29.31%) participate once in a month or less. Only 31(26.72%) students participate in regular outdoor games.The habit of participation in physical activity of school going children of standard VII and VIII. More than fifty percentage students 61(53%) reported that they participate in physical activity every day; 32 students (27%) reported that they participate in physical activity 2-3 days in a week, 10 students (9%) once in a week and rest of students 13 (11%) once in a month or less.The duration of participation in physical activity of school going children of standard VII and VIII .Out of 116 students 44 (38%) students were reported that they participate in physical activity half an hour to one hour; 36 students (31%) reported more than 1hour, 29 students (25%) perform physical activity less than 30 minutes and only 7 students (6%) have reported that they don't perform any kind of activity. The mode of transportation used to reach school among children of standard VII and VIII. According to information given by the students we found that most of the students 84 (72%) use motorbike bus or car to reach school. There are only 32 students (28%) who have reported that they reached school by cycling. Not a single student walk for going school. The duration of sleeping of school going children of standard VII and VIII. Maximum students 61(53%) were reported that they sleep for 7 hours or less in a-day, 50 students (43%) have reported that they sleep 8 hours in a day and only 5 students (4%) provide information that they sleep more than 8 hours in a day. The habit of spending leisure time of school going children pf standard VII and VIII. In the habit of spending leisure time, out of 116 student's majority 63 (54%), watching television, mobile, computer during leisure time, 32 students (28%) spent leisure time by reading books, hearing music, 10 students (8.6%) playing out door games, only 11 students (9.5%) show other activities during their leisure time.

**Section- B:**

**Table 1: Frequency and percentage distribution of BMI percentile**

| Characteristics | Frequency(f) | % |
|---|---|---|
| <5th percentile | 33 | 28.45 |
| 5th to 85th percentile | 68 | 58.62 |
| 85th to 95th percentile | 13 | 11.20 |
| >95th percentile | 2 | 1.73 |

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**Section- C: Table 4: Prevalence of frequency and percentage distribution of childhood obesity.**

| Sl no | Prevalence | percentage |
|---|---|---|
| 1 | Over weight | 11.20 |
| 2 | Obesity | 1.73 |

**Section D:** Association between the BMI category of school children with their socio demographic variables to taste the hypothesis chi squire was conducted. It was found that there was significant association between family history of obesity with childhood obesity and common mode of transportation availed to reach school as the calculated value of chi was 5.36 and 6.8 which is more than tabulated value. The study also revealed a significant association between duration of sleeping hours at night with childhood obesity in which calculated value of chi was 19.15 more than tabulated p value. Hence childhood obesity has significant association with the three mentioned socio demographic variables. Therefore, it can be interpreted that childhood overweight and obesity is associated with family history of obesity, modes of transportation and duration of sleeping hours.

**Implication:**

The study's implications are broad, spanning nursing administration, practice, research, and education. For nursing administration, the findings emphasize the need for in-service education programs to raise awareness about preventing overweight and obesity among school children. In nursing practice, the study highlights the crucial role nurses play in this prevention and health promotion. Additionally, the research findings may inspire further investigations on a larger scale, contributing to a deeper understanding of the issue. In nursing education, there's a call to integrate knowledge on obesity prevention, risk factors, and health promotion for school children into the curriculum.

**Limitation**:

The study's limitations are twofold. Firstly, it focused exclusively on students aged 12 to 16 years, specifically those in classes VII and VIII. Consequently, the findings may not fully capture the broader spectrum of childhood obesity prevalence in other age groups or educational levels. Secondly, the study faced constraints due to its limited sample size, which may restrict the generalizability of the findings. The confined scope of the study to a specific

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age range and class level emphasizes the need for caution when extrapolating the results to a more diverse population of school children.

**Recommendation:**

The study's recommendations encompass two key areas. Firstly, there is a suggestion to replicate a similar study but with a larger sample size, aiming for a more comprehensive understanding and generalization of the findings to a broader population of students. Secondly, it is recommended to explore alternative teaching strategies, such as video-based instruction or self-instructional booklets, in conducting similar studies. These variations in teaching methods could provide insights into the effectiveness of different approaches in raising awareness and preventing childhood obesity among school children.

**Summary:**

This chapter has deal with the findings of the study, discussion and implication to the nursing fields, limitations, experienced by the student researcher and recommendation for the future research.

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