



## A STUDY TO EVALUATE THE EFFECTIVENESS OF A SELF-INSTRUCTIONAL MODULE (SIM) ON KNOWLEDGE REGARDING OBESITY PREVENTION AMONG STUDENTS IN NELAMANGALA

Mrs. Sartaj S\* | Mrs. Lithial Selvakumari A\*\*

\*Assistant Professor, OBG Nursing Kalipalya Chanappa Institute of Nursing, Nelamangala, Karnataka, India.

\*\*Principal, Mathrushree Institute of Nursing, Nelamangala, Karnataka, India.

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### ABSTRACT

Healthcare providers use BMI-for-age growth charts to measure size and growth patterns in children. A high BMI may be a sign of high body fat. BMI doesn't measure body fat directly. But it alerts your child's healthcare provider your child may need more tests to see if excess fat is a problem. BMI percentile cutoffs define a level above which your child may be more likely to develop weight-related health issues. Childhood obesity is a complex disease occurring when a child's weight is significantly above the healthy range for their age and height. By 2025, India is projected to have over 17 million obese children, ranking second globally. Objective: This study aimed to evaluate the effectiveness of a self-instructional module (SIM) on knowledge regarding the prevention of obesity among students in selected schools in Nelamangala. Methods: A quasi-experimental design was utilized with a sample of 50 students. Knowledge was assessed via a structured interview schedule before and after the administration of the SIM. Results: The overall mean knowledge score increased from 49.92% in the pre-test to 62.08% in the post-test, representing an enhancement of 12.16%. The calculated paired t-value (8.602) was statistically significant ( $P < 0.05$ ). Conclusion: The self-instructional module is an effective tool for improving knowledge regarding obesity prevention among adolescents.

**Key Words:** Childhood obesity, Self-instructional module, Obesity prevention, Adolescent health, Knowledge, School-based intervention.

### ABOUT AUTHORS:



Mrs. Sartaj S. is working as an Assistant Professor in OBG Nursing at Kalipalya Chanappa Institute of Nursing, Nelamangala. She is actively involved in teaching, clinical supervision, and academic research in maternal and women's health nursing..



Mrs. Lithial Selvakumari A. is the Principal of Mathrushree Institute of Nursing, Nelamangala. She has extensive experience in nursing education, academic administration, and institutional leadership, contributing significantly to the development of nursing professionals.



## INTRODUCTION

Childhood obesity is medically defined as having a Body Mass Index (BMI) at or above the 95th percentile for children of the same age and sex. Unlike adults, children's BMI is age- and sex-specific because body composition varies during growth. Recent statistics indicate that 19.3% of children in the United States have obesity, with rates reaching 21.2% among those aged 12 to 19. In developing countries, the increasing incidence of childhood obesity presents a significant public health and socioeconomic burden. Currently, approximately 200 million school-aged children worldwide are estimated to be overweight. Addressing this requires effective educational strategies to promote healthy lifestyle habits. World Health Organization (WHO) and IOTF for Asian Indian adults for overweight and obesity, respectively but these are not applicable for children and adolescents. Over the years, there has been a lack of consensus on the various cut-points or definitions used to classify obesity and overweight in children and adolescents. This makes it difficult to interpret and compare the global or national prevalence rates.

At present the potential public health issue that is emerging is the increasing incidence of childhood obesity in developing countries and the resulting socioeconomic and public health burden that will be faced by these countries in the near future. The prevalence is increasing at a fast rate and presently, about 200 million school-aged children are estimated to be overweight at the global level. In the year 2025, India will have over 17 million obese children and stand second among 184 countries where the number of obese children is concerned.

## METHODOLOGY

- **Design:** A quasi-experimental pre-test/post-test design.
- **Setting:** Selected high schools in Nelamangala.
- **Sample:** 50 students selected via sampling techniques.
- **Demographics:** 64% of respondents were aged 15–16, and 56% were female. 66% belonged to nuclear families, and 60% had no previous exposure to obesity prevention education.
- **Tool:** A structured interview schedule and a Self-Instructional Module (SIM) focusing on obesity prevention.

## RESULTS

**Table 1: Distribution of Students According to Demographic Variables (N = 50)**

| Variable                              | Category       | Frequency (n) | Percentage (%) |
|---------------------------------------|----------------|---------------|----------------|
| <b>Age</b>                            | 13–14 years    | 18            | 36%            |
|                                       | 15–16 years    | 32            | 64%            |
| <b>Gender</b>                         | Male           | 22            | 44%            |
|                                       | Female         | 28            | 56%            |
| <b>Religion</b>                       | Hindu          | 22            | 44%            |
|                                       | Christian      | 17            | 34%            |
|                                       | Muslim         | 11            | 22%            |
| <b>Type of Family</b>                 | Nuclear        | 33            | 66%            |
|                                       | Joint          | 11            | 22%            |
|                                       | Extended       | 6             | 12%            |
| <b>Food Pattern</b>                   | Vegetarian     | 24            | 48%            |
|                                       | Non-Vegetarian | 26            | 52%            |
| <b>Previous Exposure to Knowledge</b> | Yes            | 20            | 40%            |
|                                       | No             | 30            | 60%            |

### Description:

Majority (64%) of respondents were aged 15–16 years. Most participants were females (56%). Majority belonged to nuclear families (66%) and 60% had no previous exposure to knowledge regarding prevention of obesity.

**Table 2: Comparison of Pre-Test and Post-Test Knowledge Scores (N = 50)**

| Test               | Mean  | Median | SD   | Mean %        | CV    |
|--------------------|-------|--------|------|---------------|-------|
| Pre-Test           | 12.48 | 11.50  | 3.72 | 49.92%        | 29.81 |
| Post-Test          | 15.52 | 16.00  | 3.79 | 62.08%        | 24.43 |
| <b>Enhancement</b> | —     | —      | —    | <b>12.16%</b> | —     |



### Description:

The overall mean percentage of pre-test knowledge was 49.92%, which increased to 62.08% in the post-test, showing an enhancement of 12.16% after administration of the Self-Instructional Module (SIM).

**Table 3: Paired 't' Test Showing Effectiveness of Self-Instructional Module (N = 50)**

| Knowledge Aspect                          | Pre-Test Mean % | Post-Test Mean % | Mean Difference | Paired t-value | p-value  | Significance |
|---|-----------------|------------------|-----------------|----------------|----------|--------------|
| Knowledge Regarding Prevention of Obesity | 49.92%          | 62.08%           | 12.16%          | 8.602          | p < 0.05 | Significant  |

Since the calculated t-value (8.602) is greater than the table value (1.96) at 0.05 level of significance, the difference between pre-test and post-test knowledge scores is statistically significant. Hence, the null hypothesis ( $H_0$ ) is rejected and the research hypothesis ( $H_1$ ) is accepted.

### DISCUSSION

The present study assessed the effectiveness of a Self-Instructional Module (SIM) on knowledge regarding prevention of obesity among adolescents. The findings revealed that the overall mean percentage of knowledge increased from 49.92% in the pre-test to 62.08% in the post-test, indicating a significant improvement of 12.16%. The calculated paired t-value (8.602) showed statistical significance at  $p < 0.05$ , confirming that the SIM was effective in enhancing students' knowledge. These findings are consistent with previous research indicating that structured educational interventions significantly improve adolescents' awareness and understanding of obesity prevention.

Regarding demographic variables, significant associations were observed with age, gender, and father's educational status, suggesting that these factors may influence knowledge acquisition. However, religion, mother's education, occupation, leisure activities, food pattern, type of family, and previous exposure did not show significant association.

The results emphasize the importance of structured educational interventions in schools to improve adolescent health awareness.

### CONCLUSION

The study concludes that the Self-Instructional Module (SIM) was effective in improving knowledge regarding prevention of obesity among adolescents. There was a statistically significant increase in post-test knowledge scores compared to pre-test scores.

Educational interventions such as SIM can serve as cost-effective and practical tools for promoting awareness about obesity prevention in school settings. Early health education plays a crucial role in preventing lifestyle-related disorders among adolescents.

The study recommends implementation of regular school-based health education programmes to promote healthy lifestyle practices and prevent obesity among adolescents.

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