



A Study on the Impact of an Interventional Package on Adolescent BMI

Pauline Sharmila

Faculty of Nursing, Department of Pediatric Nursing, SGT University, Gurugram, India

ABSTRACT

A healthy lifestyle is the foundation to good life. It includes consuming a balanced diet, regular exercise and maintaining a healthy weight in our day to day life. [1] This study used a quasi experimental method with a pre-post test control group design. Sample size was 400, 200 in experimental group and 200 in control group and multistage sampling technique was adopted. Experimental group received exercise therapy, education and lifestyle modification counseling sessions and behavior modification sessions and the BMI was assessed every 3 months in 9 months. The study findings revealed that there was a statistically significant difference seen in the mean scores of knowledge at $p < 0.01$ between pretest and posttest among adolescents in the experimental group. Practices to improve the lifestyle became favorable in the experimental group and the BMI also showed considerable change.

Key Words: *lifestyle, BMI, adolescents, behavior modification*

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INTRODUCTION

Healthy life style is a very important component to be incorporated in our daily life. The benefits of observing a healthy lifestyle includes maintaining an ideal BMI, sound mental health, less incidence of non communicable diseases, good sleep and a long life span. [1, 2, 3] It is important to start adopting a healthy lifestyle at the onset of adolescent period itself because it could reduce the risk of the development of serious health effects such as hypertension, diabetes mellitus, high cholesterol, stroke and cardiac disorders in the adult life.[4,6] Obesity is found to be increasing among adolescents in the developing countries and the major reason is due to unhealthy lifestyle patterns. [5,7]

Adolescents in India are more prone for nutritional associated disorders which are mainly due to changes in life style, reduced physical activities and adoption of fast food and junk food culture which leads to an abundance in consumption of energy filled foods. [8] These food items have high amount of sugars and unsaturated fats and contain very less nutrients which leads to harmful health on a long run. Children should be molded at their adolescent stage to follow favorable lifestyle patterns so that they can continue it throughout their life span. [9,10,11]

OBJECTIVES OF THE STUDY

- I. To plan, validate, and implement a lifestyle and behaviour modification intervention on BMI
- II. To assess the efficacy of lifestyle and behaviour modification interventions on BMI in terms of change in
 - knowledge of adolescents
 - Life style Practices of adolescents.
 - BMI of adolescents
- III. To describe the frequency of dietary consumption among the adolescents with a view to identify possible dietary factors regulating the BMI.
- IV. To find out the correlation between the knowledge and practice in management of obese and overweight adolescents.

HYPOTHESES

Hypotheses were tested at 0.05 significance.

H_{01} : there will be no significant difference in the mean pre and post intervention adolescent's knowledge scores within the group and between the groups.

H₀₂: there will be no significant difference in the mean pre and post intervention adolescents practice scores within the group and between the groups.

MATERIAL AND METHODS

Quantitative research approach was adopted with non-randomized pre- posttest control group design. The primary study was done in selected colleges in Sharda University and Noida International University in Greater Noida. The target population was bachelor degree students who were overweight and obese and the accessible population included all the bachelor degree students who were overweight or obese, aged 18 - 19 years. 400 samples were selected with 200 in experimental and 200 in control group. Multistage purposive sampling and randomized sampling technique was used to select the samples. Informed consent was obtained and anonymity of the participants was maintained.

The instruments used for data collection in this study consist of following parts

Part-I: Demographic Performa.

Part- II: Knowledge questionnaire regarding the lifestyle and behavioral modification

Part-III: Practice questionnaire regarding the lifestyle and modification

Ethical clearance was obtained from the IEC and written permission was obtained from the HOD's and Deans of the respective departments and colleges. Data was taken over a period of 9 months.

RESULTS

The analysis was organized and described under the following headings:

Section 1: Baseline characteristics of adolescents

Section 2: Comparison of the level of knowledge and practice on diet, activity/ exercise and behavioral modification in the experimental and control group of adolescents.

Section 3: Effectiveness of educational package on knowledge scores and practices scores among adolescents

Section 4: Comparison of BMI in the experimental and control group of adolescents

Section 5: Dietary consumption of the adolescents with a view to identify possible dietary factors regulating the BMI

Section 6: Co-relation between knowledge and practice of adolescents.

Section 7: Association between levels of post-test knowledge with the selected demographic variables among experimental group

There was a statistically notable difference seen in the mean scores of knowledge at $p < .001$ between pretest and posttest among adolescents in the Experimental group. Hence researcher failed to accept null Hypothesis H₀₁

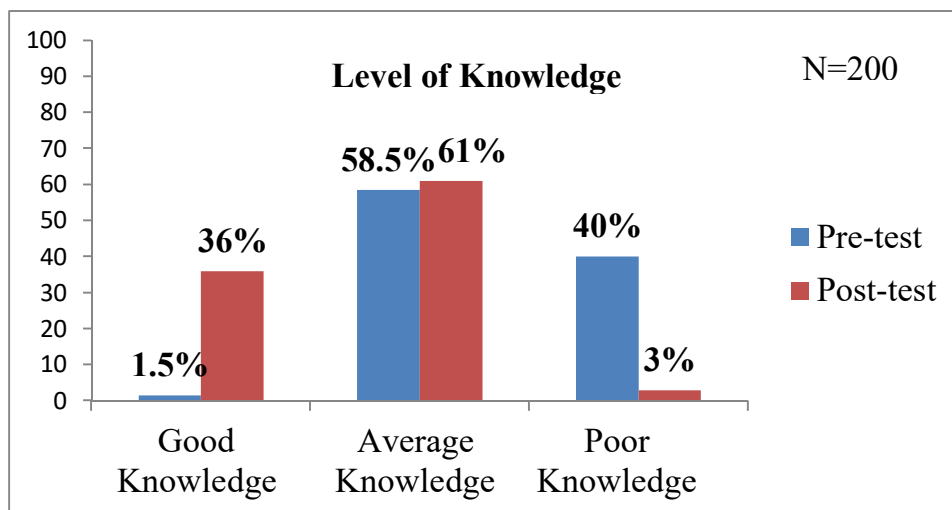


Figure No. 1: Percentage of late adolescents according to their level of their knowledge.

This figure explains that after the pretest the knowledge increased in the experimental group. In the pretest only 1.5% had good knowledge but during the post test the % of people having good knowledge increased to 36 % which indicates that the package was successful in improving the level of knowledge among the students in the intervention group.

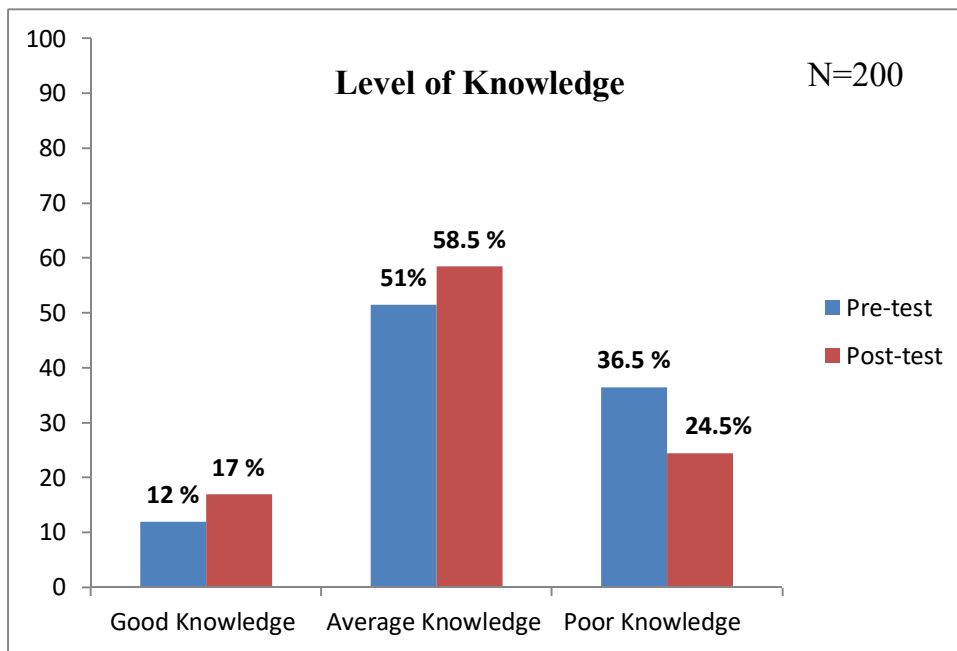


Figure no 2: Percentage of late adolescents according to their level of knowledge in the control group during pre and post test

This figure explains the level of knowledge in the control group in the pre and post test. There was a slight increase in the % of students who had good knowledge after the post test.

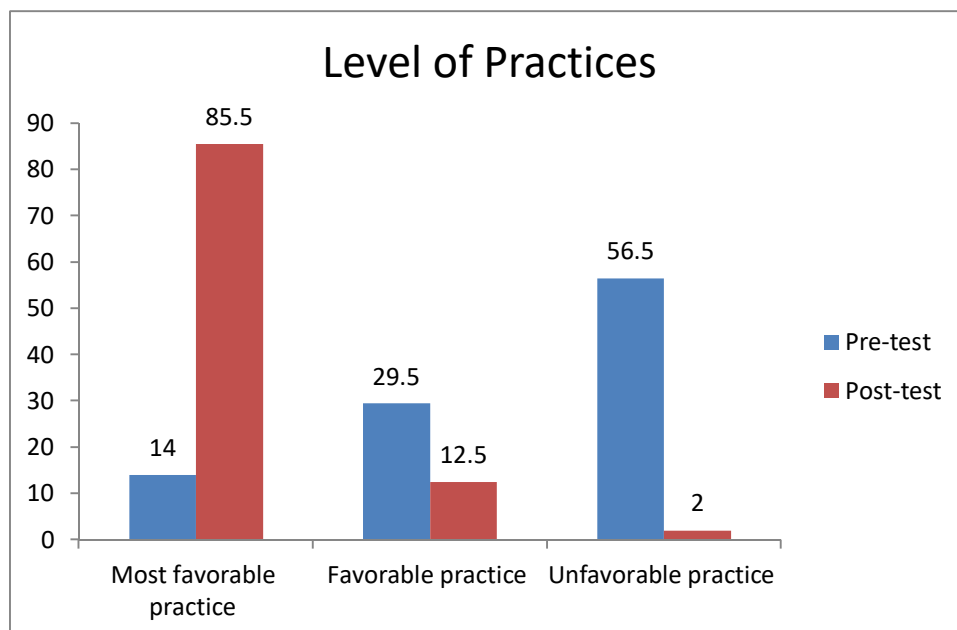


Figure 3: percentage of late adolescents' level of practices in the interventional group during pre and post test.

There was a statistically notable difference in the mean scores of practices at $p < .001$ between pretest and posttest among adolescents in the Experimental group. Hence researcher failed to accept null Hypothesis H_{02} .

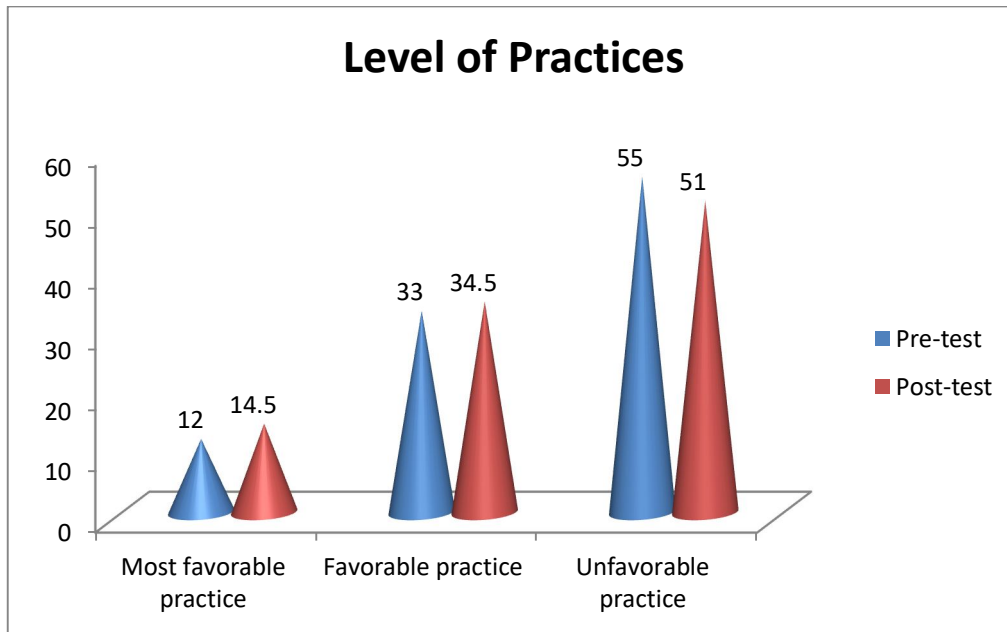


Figure 4: Percentage of late adolescents according to their level of practices in the control group during pre and post test.

In this figure we can see that the most unfavourable practices were about 14.5 in the control group and in the favourable practices there was no big change even after 8 months.

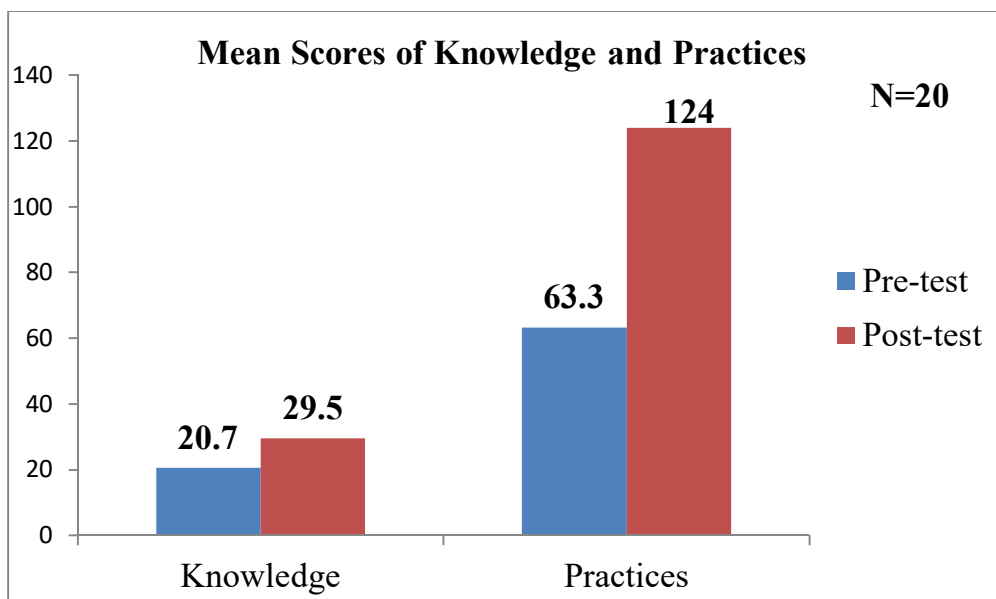


Figure 5: Pretest and post test scores in the experimental group

Comparison of the mean pre-test and post-test scores of knowledge and practices among late adolescents in the experimental group. This figure illustrates that the knowledge score increased from 20.7 to 29.5 and the practice score increased from 63.3 to 124.

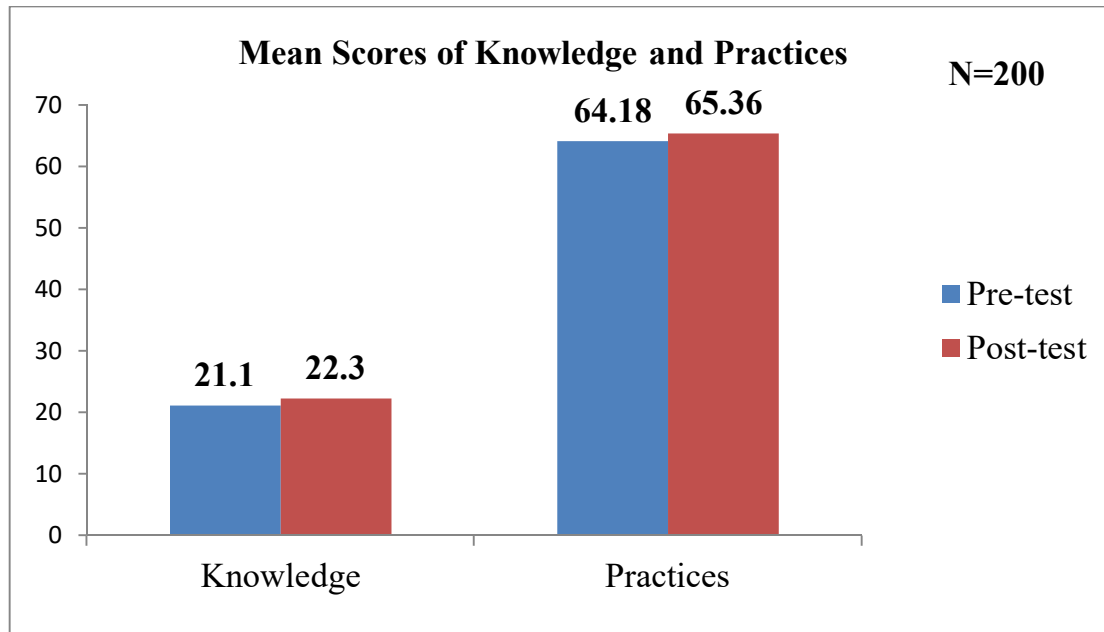


Figure 6: Knowledge and practice scores in the control group

Comparison of knowledge and practices among late adolescents in the control group. After the post test there was no considerable increase in the knowledge or practice among the adolescents in the control group.

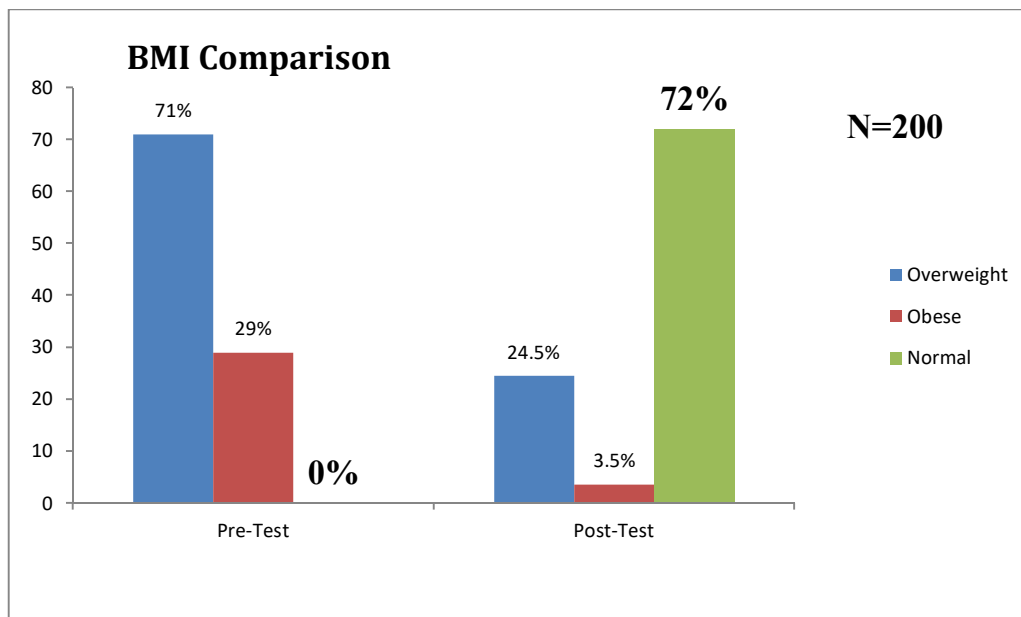


Figure 7: Comparison of BMI among Experimental group.

This figure illustrates the BMI of the experimental group before the intervention and after the procedure. It shows that The BMI considerably decreased from overweight to obese in 42% of the students. After the intervention the number of students who were in the normal BMI category increased to 72 %.

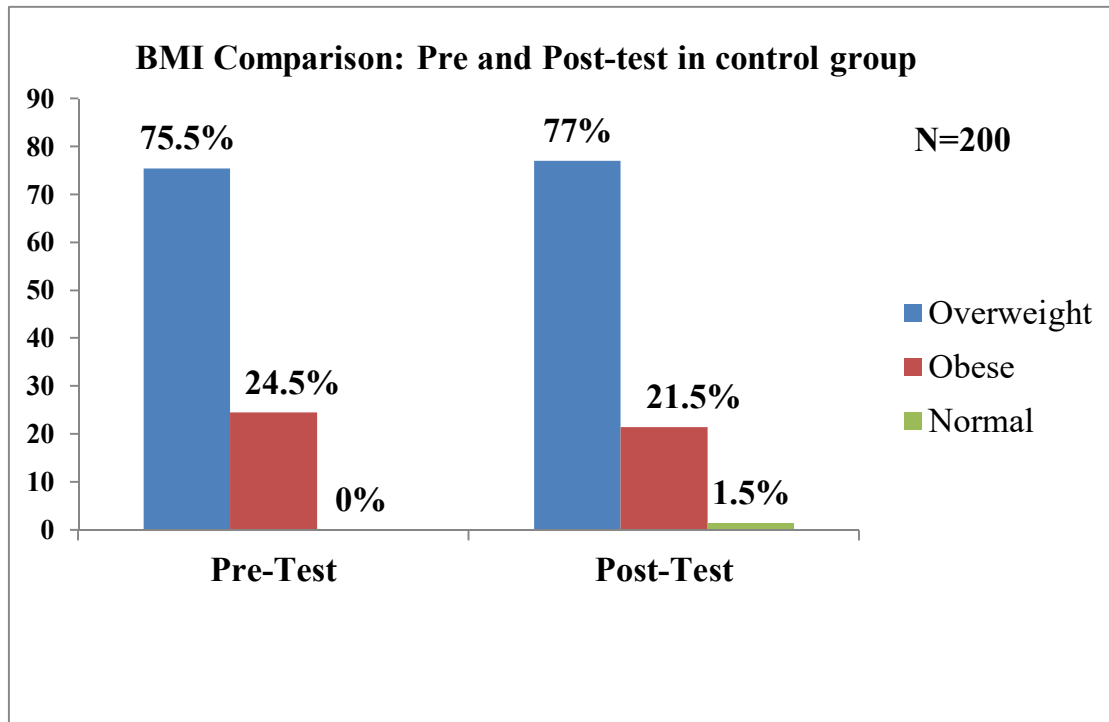


Figure 8: BMI comparison in the control group

In the control group there was no much difference in the overweight status of the adolescents after the post test.

DISCUSSION

After the intervention, there was a prominent change in the dietary practices. There was a reduction in the frequency of intake of cereals such as rice per day. Even, the frequency of consumption of dairy products (such as cheese, butter), fruit juices, sweets, fast foods, fried foods, snacks, carbonated beverages and sweetened beverages has reduced drastically. Intake of pulses, raw vegetables, cooked vegetables milk and fruits got further increased and further reduction in the frequencies of non-vegetarian food was noted. According to the study findings (Table 5), there was a statistically significant difference in the mean knowledge scores at p.001 between pretest and posttest among the candidates in the Experimental group. There was a statistically significant difference in practice mean scores between pretest and posttest among the samples in the Experimental group (p.001).

The study findings reveal that, there was significant difference noted in the mean scores of knowledge and practices at p<.001 between pretest and posttest among late adolescents in the control group.

The study findings reveal that after the intervention, there were only 1.5% of students in control group where the BMI has become normal. But in the experimental group, it is evident that 72% of them reduced their BMI to normal. It is evidenced that the change is due to due to the effect of educational package.

The study findings reveal that, there was Co-relation between post-test knowledge and practice of experimental group on diet, activity/exercise and behavioral modification and it reveals that there is a strong positive co-relationship between knowledge and practice 'r' value is 0.82, p = (0.001)

Over-weight and obesity are one of the major health problems which affects the adolescents - the future resources of our country. [12, 13] It leads to lot of complications like cardiovascular diseases, orthopedic problems and emotional turmoil. [14] So the adolescent's should follow the healthy life style and dietary practices to manage their BMI levels within the normal limits. The current study assessed the effectiveness of a lifestyle and behaviour modification educational package on the BMI of adolescents at various educational institutions. The teaching package was good in terms of changing adolescents' knowledge, practices in managing obesity and overweight, and changes in BMI.

This was statistically proven among the adolescents in the experimental group. The same can be implemented in different settings.

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