



Assess the association of body mass index and the life style practices among adolescents

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ABSTRACT

Body mass index is a measure of body fat based on your weight in relation to your height. BMI percentile is the best assessment of body fat. Lifestyle practices are considered to be the important determinant of health and sickness. In our study lifestyle practices include physical activity and dietary practices. The objectives of the study were to calculate the BMI of adolescents, to assess the lifestyle practices of adolescents and to find out the association of BMI and lifestyle practices of adolescents. A quantitative descriptive study was carried out in selected villages of District Sirmour, (HP), using non-probability convenience sampling, 60 adolescents between the age group of 13-19 years were selected from selected areas. Subjects were interviewed using a structured questionnaire regarding demographic variables and checklist for the lifestyle practices which were followed by adolescents. Data was analyzed by manually in terms of descriptive and inferential statistics. The result shows that more than half of the samples were having normal BMI i.e. 34(56.66%), 24(40%) adolescents come under the underweight category, only 2 (3.33%) adolescents come under overweight category and out of 60 samples no one come under obese category. 42(70%) samples have normal good practices, 11(18.33%) were having very good practices, only 7(11.66%)having fair practices and 0(0%) out of 60 samples having poor practices. By applying Chi-square method the level of significance of the association of BMI and lifestyle practices is ($p=0.05$). In conclusion, we as nurses must continue to remind and update the community adolescents about good lifestyle practices and early identification of cases of malnutrition and obesity. Intensive educational campaigns to increase awareness regarding good lifestyle practices in order to increase awareness regarding malnutrition and obesity.

Keywords— BMI, Lifestyle practices

1. INTRODUCTION

Majority of Indian population live in rural areas mainly depending on agriculture for their livelihood and carry out more of the physical activities than the urban population, who are accustomed to a sedentary lifestyle. Diet is a very basic component of lifestyle, which plays an important role in the development and prevention of obesity and overweight. An unhealthy lifestyle practice amongst young people is a serious and unnoticed problem. Physical activities have changed as a result of increased television watching, spending more time on computer and mobile and spending less time on outdoor sports. The deregulations of energy consumption and expenditure related to inappropriate dietary habits and lack of exercises increase the prevalence of obesity and overweight.¹ Obesity is emerging as a serious problem throughout the world, not only among adults but also in children, teenagers, and young adults. Body Mass Index (BMI) is a simple index of weight for height that is commonly used to classify underweight, overweight and obesity and same for both sexes.² An increment of Body-Mass Index (BMI) in the specific population can be explained by the fact that most of the university students undergo through lifestyle changes, such as leaving home, going to university, leaving similar context and starting work and having increased autonomy in decision making. This transitional period between childhood and adulthood affects energy balance leading to weight gain. Specifically, the prevalence of obesity in young adults in 2.9-14.3% in China, 11.0-37.5% in India, around 17 % in the USA, 12.4-31.6% in Latin America and South Africa. A cross-sectional study was conducted on nursing students of Narayan Nursing College, Sasaram, Bihar. BMI was used to define underweight, overweight and obesity in the study population as per WHO. The overall prevalence of underweight, overweight and obesity in the study population was 32.6%, 9.4%, and 2.1%. Among 233 students, 87 were the males and 146 were the females of which 11.5% of males and 8.2% females were overweight. Only 3.4% of females were obese. 54.5% of the students used to skip their breakfast. Body Mass Index (BMI) is a measure of body fat based on your weight in relation to your height, and applies to most adult men and woman aged 20 and over. For children aged 2 and over, BMI percentile is the best assessment of body fat. Body Mass Index (BMI) is a measure of relative size based on the mass and height of an individual².

1.1 Need for the study

Obesity and malnutrition are most preventable nutritional diseases of children and adolescents in many developed and developing countries. Nowadays obesity and malnutrition are two main nutritional diseases prevalent in the country. The prevalence of this condition is occurring due to sedentary life style and inadequate dietary habits. Today the adolescents are mainly focused on the consumption of fast food and spend all the time with their laptops and phones due to advancement in technology. Due to advancement in technology, the outdoor physical activity and play is reduced and it leads to increased risk of development of

obesity and malnutrition³. The prevalence of teenage obesity, which has increased dramatically over the past here decades worldwide, is acknowledged as one of the most serious health challenges of the 21st century. Obesity results from a long term energy imbalance, a combination of excess energy intake, low levels expenditure, and an active lifestyle. The underlying causes of obesity during the growing years are variable with multifactorial, non-modifiable and modifiable environmental factors involved and potentially further complicated by biological growth factors during the rapid period pubertal growth spurt. Here in Baru Sahib, the adolescent has sedentary lifestyle and they spend more time in studying and rest of time they give to their laptops and phones for their entertainment. They have less or no time for physical activities. Moreover, they prefer to have fast food from the canteen. After consuming fast food they don't go for physical activities which are affecting their BMI, Due to alteration in BMI obesity and malnutrition occur so we want to conduct this study in adolescent age group (13-19) years of Baru Sahib Distt. Sirmour (H.P).

1.2 Statement of the problem

A descriptive study to assess the association of body mass index and the life style practices among adolescents residing in Baru Sahib, Distt. Sirmour, (H.P).

1.3 Objectives

- To calculate the BMI.
- To assess life style practices of adolescents.
- To find out the association of BMI and life style practices.

1.4 Hypothesis

H₀: There was no association between BMI and life style practices.

H₁: There was an association between BMI and life style practices.

1.5 Operational definition

- Body Mass Index:-In this study it is the association between the height and weight of an adolescent.
- Lifestyle practices:-In this study it includes dietary habits and physical activities.
- Adolescent: - In this study, it includes the individual's f 13-19 years of age group.

2. MATERIALS AND METHODS

This chapter describes how and under what conditions the empirical data underlying this thesis have been produced and utilized. Schematic diagram of research methodology is given in figure 1.

3. DESCRIPTION OF THE TOOL

The tool consists of 3 sections.

3.1 Section A

It consists of demographic variables of the subject which include age, gender, educational status, and marital history, area of residence, family income, and pattern of diet, any history of hereditary disease, and any history of medication.

3.2 Section B

It consists of anthropometric measurement of subjects of the study. This section consisted of 3 items on selected aspects of subjects. Items are Height (in cm), Weight (in Kg), and body mass index.

3.3 Section C

It consists of items related to practices about prevention of Obesity and Malnutrition. This section is divided into two subsections:

- (a) Dietary practices
- (b) Physical activities

Table 1: Description of section c

Components	Dietary pattern	Physical activity
No. of items	18	10
Score	0 for incorrect and 1 for correct response	0 for incorrect and 1 for correct response
Categories	Very good practices:-76-100% Good practices:-51-75% Fair practices:-26-50% Poor practices:-<25%	1) Very good practices:-76-100% 2) Good practices:-51-75% 3) Fair practices: - 26-50% 4) Poor practices: - <25%

3.4 Reliability of the tool

To ensure reliability the structured checklist was pre-tested before the actual data collection began. It was evaluated by the split-half method by using Karl's Pearson's formula the value for dietary practices was $r = 0.65$ and for physical activity was $r = 0.8$. Both values were reliable to conduct the main study.

3.5 Ethical considerations

- Permission was obtained from the Research and Ethical Committee of the Eternal University, Baru Sahib, and H.P.
- Permission was obtained from the local government authorities of selected villages of District Sirmour- Baru Sahib, Nanu, Timber, and Bhanog
- Before conducting the study, informed written consent was obtained from the study participants.

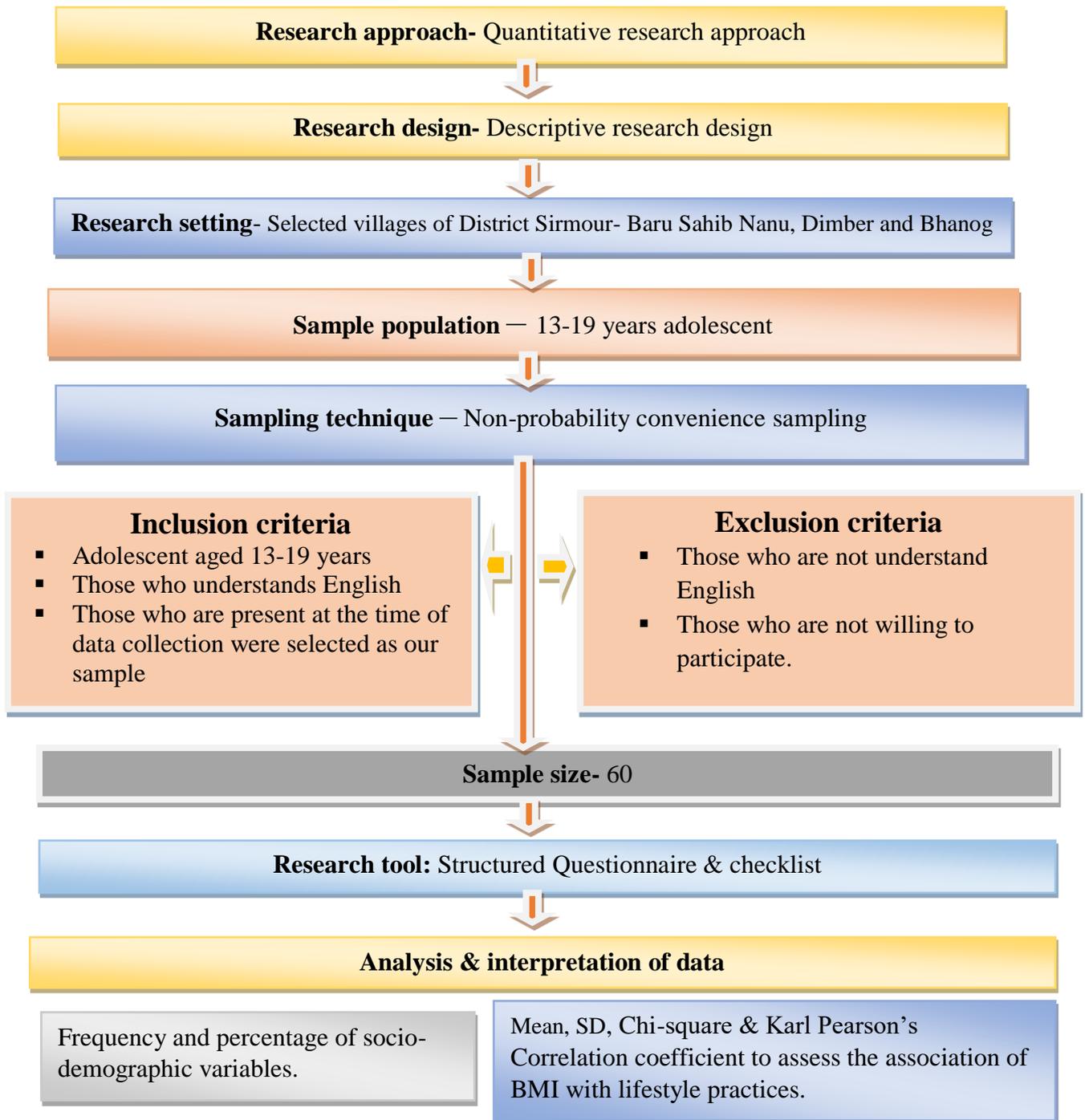


Fig. 1: Schematic diagram of research methodology

4. PILOT STUDY

A pilot study was conducted to find the feasibility of the tool after obtaining formal permission from the concerned authority. The data has been obtained from 6 samples by using a structured questionnaire and checklist at the selected village of District Sirmour-Baru Sahib in the month of October through interviewing and use of non-probability convenient sampling technique. The samples that were included in the Pilot study were not included in the the main study. The investigator introduced self and took written consent from the respondents. The reliability was checked by the split-half method using Karl Pearson's formula. The reliability value for dietary practices was $r = 0.65$ and for physical activity was $r = 0.8$.

5. PROCEDURE OF THE DATA COLLECTION

After obtaining permission from the concerned authorities; informed written consent from the samples, the investigator collected the data pertaining to the demographic variables. Data was collected by using close-ended questions in the form of structured Questionnaire and checklist. It took 5-10 minutes to collect data from each sample. Per day 15 -20 samples were taken.

6. RESULTS and ANALYSIS

In the current study data analysis is described in 4 sections.

- Section-1 Frequency and percentage distribution of the socio-demographic variable of adolescents.
- Section-2 Frequency and percentage distribution of Body Mass Index of adolescents.

(c) Section-3 Frequency and distribution of life style practices of adolescents.

(d) Section-4 Association of BMI with life style practices.

Table 2: Section-1 Frequency and percentage distribution of profile of the patient. N=60

S no.	Variables	Categories	Frequency	Percentage
1.	Age	14 years	10	16.66%
		15years	08	13.33%
		16years	06	10%
		17years	12	20%
		18years	18	30%
		19years	06	10%
2.	Gender	Male	32	53.33%
		Female	28	46.66%
3.	Education status	No formal education	00	0%
		10 th grade	26	43.33%
		12 th grade	34	56.66%
		Under graduation	00	0%
4.	Marital history	Married	00	0%
		Unmarried	60	100%
		Divorced	00	0%
5.	Area of residence	Urban	00	0%
		Rural	60	100%
6.	Family income in rupees/ month	<2000	06	10%
		4000-8000	11	18.33%
		8001-12000	10	16.66%
		>12001	33	55%
7.	Pattern of diet	Vegetarian	28	46.66%
		Non-vegetarian	32	53.33%
8.	History of hereditary disease	Yes	2	3.33%
		No	58	96.66%
9.	History of medication	Yes	4	6.66%
		No	56	93.33%

Table 3: Section-2 Frequency and percentage distribution of Body Mass Index of adolescents N=60

S no.	BMI categories	f	%
1.	Underweight	24	40%
2.	Normal	34	56.66%
3.	Overweight	2	3.33%
4.	Obese	0	0%

Table 4: Section-3 Frequency and percentage distribution of life style practices of adolescents. N=60

S no.	Practice categories	f	%
1.	Very good practices	11	18.33%
2.	Good practices	42	70%
3.	Fair practices	7	11.66%
4.	Poor practices	0	0%

Table 5: Section-4 Association between BMI and Lifestyle Practices. N=60

Variables	Calculated Value	Degree of freedom (df)	Tabulated Value	Level of significance
BMI and Lifestyle Practices	7.81	3	7.82	0.05

The data presented in table 4 shows that the calculated value of association of BMI and life style practices by Chi-square method is 7.81. Degree of freedom is 3 and the calculated value is 7.82. It shows that the level of significance is (p<0.05).

7. SUMMARY, FINDINGS OF THE STUDY, NURSING IMPLICATIONS, RECOMMENDATIONS and CONCLUSION FINDINGS

In this present study, we calculated the BMI of adolescents and they fall into different categories, more than half of the population fall in the normal range of BMI 56.66%, the underweight population ranked 40%, the overweight population was 3.33% and there was 0% ranking in the obese population. Findings related to lifestyle practices showed that majority of the population (70%) had good lifestyle practices, (18.33%) population reflected very good lifestyles practices, (11.66%) denoted the fair lifestyle practices and (0%) fall in the poor lifestyle practices. Finding related to the association of BMI with lifestyle practices calculated by Chi-square method i.e. df=3 the level of significance (p<0.05).

7.1 Limitation

- Although the sample size for the current study was relatively enough still it doesn't represent the totality of the population in the district Sirmour, (H.P), due to the scanty and scattered population in the hilly areas.
- Difficulty in transportation during data collection period.

7.2 Nursing implications

7.2.1 Nursing practice

- Nurses play a vital role in the healthcare delivery system and today more emphasis is given on self-reliance and client participation in the health care system. By using teaching strategies, the nurse can motivate to improve their knowledge for preventing malpractice which further leads to obesity or malnutrition.
- Findings of the study can be the platform for designing better preventive from the several conditions, including malnutrition and obesity this condition further create complications like diabetes, heart diseases, kidney disease and joint pain which are considered one of the preventable causes of death worldwide.

7.1.2 Nursing education

- The majority of nurses have a positive attitude towards providing nutritional support however, eating habits and obesity may be ignored if nurses are under pressure of time.
- The nurses use comprehensive nutritional assessment tools which are a significant measure in early obesity detection and prevention.
- Nurses may also be in a position to address practical matters, such as the availability of school and work canteens and the choice of food offers, or to consider the psychosocial and cultural dynamics that affect health behavior that lead to obesity.

7.1.3 Nursing administration

- The nurses' managers have an opportunity to consider interventions that promote a climate favorable to improved health habits by facilitating and supporting healthy lifestyle choices (nutrition and physical activity) and environmental changes.
- The nurse administrator should take an active part in arranging yoga to motivate people for doing more physical activities.

7.1.4 Nursing research

- To modify the lifestyle by modifying their dietary adherence to stop certain diseases like cholesterol, hypertension, cardiovascular diseases and minimizing the chances of obesity.
- To decrease the sedentary lifestyle by increasing the physical activity in the population for improving cardiovascular health rather than for inducing weight loss.

7.1.5 Recommendations

- The current study sample can be replicated on the large sample and could be conducted in different age levels to validate and generalize the findings.
- Organizing health meals in the public gatherings i.e. primary schools, secondary schools.

8. CONCLUSION

To conclude we can add more recommendations, in-depth health talks could be delivered more by the health workers or either mass media, newspapers could be tailored to fulfill the awareness gap from among all the population. Health campaigns should be arranged to tackle the observed educational deficits should be planned in order to raise awareness regarding a good lifestyle and adequate nutritive practices. Its risk factor with emphasis on the role of prevention and guideline for screening through assessing height and weight or calculating the BMI. As in a nursing profession, we must continue to remind and update the community about good lifestyle and adequate nutrition practices.

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