

A correlational study to explore the association between body mass index and eating habits among nursing students of College of Nursing, Adesh University, Bathinda, Punjab.

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Abstract: A correlational study was conducted on 200 students of Bsc Nursing program to explore the association between body mass index and eating habits among nursing students of College of Nursing, Adesh University, Bathinda, Punjab. The body mass index (BMI) calculated as ratio between weight in kilograms and height in meters squared and results recorded as (kg/m²). Eating habits were measured using 5-point Likert scale questionnaire. Correlational research design was used. Sampling technique was non probability convenience sampling. Statistical analysis was performed using Smith Statistical Package (SSP) version 2.80 and Statistical Package for the Social Sciences (SPSS) version 20.0. The study had revealed that out of 200 children, 115 had normal BMI status, 68 were underweight and 17 were overweight. Out of 200 students, 151 had neutral eating habits, 47 had healthy eating habits and only 2 students had unhealthy eating habits. The correlational coefficient came out to be -0.004 and p value came out to be 0.270 which is highly insignificant depicting that there is no correlation between BMI and eating habits. Association of eating habits was also found with socio demographic variables, among all other socio demographic variables, class, mother's educational status and family illness history had significant association with eating habits.

Keywords: Association, body mass index, eating habits, students.

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I. Introduction

Health is a basic and active meaning in all people habitual lives. It is influenced by habits, circumstances, attitudes, believes, as well as social and physical environment. Health is combination within the brain, body, and spirit, which is deemed distinctive to each individual.¹

BMI provides a simple numeric measure of a person's *thickness* or *thinness*, allowing health professionals to discuss weight problems more objectively with their patients. BMI was designed to be used as a simple means of classifying average sedentary (physically inactive) populations, with an average body composition.²

Adding to the significance of nourishment for high quality health of nurses, it is often nurses who offer nutritional assessment and education to patient and act as role models. In order to know the eating habits of students, it becomes compulsory to assess the nutritional status of students taking into account different foods that they themselves choose to eat. BMI is most widely used and simplest anthropometric index for assessing the nutritional status of children and adult to categories those who may be overweight under weight, normal weight and obese at risk based on age and sex.³

II. Objectives

Primary Objectives:

- To assess the body mass index (BMI) of nursing students.
- To assess the eating habits of nursing students.
- To find the correlation between eating habits and body mass index of nursing students.

Secondary Objectives:

- To find out the association between eating habits with their selected socio-demographic variables.

Assumptions

1. Nursing students eating habits may influence their body mass index.
2. Nursing students may experience change in body mass index.

VARIABLES UNDER STUDY

Demographic variables

Age, Sex, Class, Religion, Father's educational status, Mother's educational status, Father's occupational status, Mother's occupational status, Family monthly income, Dietary pattern/Food Habits, Health problem, Family illness history.

RESEARCH APPROACH :

Quantitative research approach

RESEARCH DESIGN:

A correlational research design

RESEARCH SETTING

Study was conducted in College of Nursing, Adesh University, Bathinda.

TARGET POPULATION

The target population of the study were students of BSc Nursing program studying in College of Nursing, Adesh University, Bathinda.

SAMPLE AND SAMPLING TECHNIQUE

The sample for present study were 200 students BSc Nursing program studying in College of Nursing, Adesh University, Bathinda. The sample was selected by convenient sampling technique.

SELECTION AND DEVELOPMENT OF THE TOOL

To accomplish the objectives of the study, the research tool was constructed in following two sections:

Section A : Demographic variables

Section B : Includes calculating BMI using standard formula for BMI calculation and Likert scale for assessing eating habits

Section A: Demographic variables:

This section consist of 12 items for obtaining personal information about children i.e. Age, Sex, Class, Religion, Father's educational status, Mother's educational status, Father's occupational status, Mother's occupational status, Family monthly income, Dietary pattern/Food Habits, Health problem, Family illness history.

Section B: BMI calculation and assessment of eating habits

This section consist of calculating BMI using standard BMI calculating formula.

Likert scale used for assessing eating habits had total 37 items. Students will tick the response that best describes them. The scale includes the criteria i.e. **1 if the child does the habit repeatedly, 2 if the child does it often, 3 if the child does it occasionally, 4 if the child does it rarely and 5 if the child has never done that habit.**

Part I: Unhealthy food habits: included 13 items of unhealthy eating habits that may be followed by the study subjects, with scores ranged from 13 to 65 scores.

Part II: Eating healthy food: comprised 9 items of healthy food that eaten by participants with scores ranged from 9 to 45 scores.

Part III: Following healthy eating habits: contained 8 item of healthy eating habits that may be followed by the study group, with scores ranged from 8 to 40 scores.

Part IV: Planning for eating healthy food: involved 7 element of healthy food that may be planned by the study group with marks ranged from 7 to 35 scores.

The total scores of eating habits questionnaire are $37 \times 5 = 185$ scores.

CRITERION MEASURES

- Scores ranged from 37 to 86 indicated unhealthy eating habits
- Scores ranged from 87 to 135 indicated neutral eating habits (means that healthy eating habits are equal to unhealthy eating habits).
- Scores ranged from 136 to 185 indicated healthy eating habits

CONTENT VALIDITY OF THE TOOL

Content validity of the socio demographic data sheet was determined by experts opinion. The socio demographic data sheet was given to the Medical and Nursing experts in the field of Maternal and Child Health & Paediatrics and language experts in English and Punjabi (participant information sheet, consent form and socio demographic data sheet). As per the guidance and suggestions from the experts, the suggested amendments were made in the tool.

ETHICAL CONSIDERATIONS

Ethical clearance is taken form research and ethical committee of Adesh University, Bathinda for the study to be conducted. Apart from this, permission is taken from authorities of the respected area to collect the data.

PLAN AND PROCEDURE FOR DATA COLLECTION

The study participants were the students studying in College of Nursing, Adesh University, Bathinda. Firstly, BMI was assessed in the students by measuring their height and weight and then applying formula and then eating questionnaire was given to all the students. There BMI values were recorded by the researchers. Questionnaire was also collected from the students after they completed it.

PLAN OF ANALYSIS

Data analysis was done as per the objectives of the study. The data was analyzed by using SPSS version 20, by descriptive statistics (frequency, percentage) and inferential statistics Chi-square value was used to find out association between variables. Data has been represented in the form of tables.

DEMOGRAPHIC VARIABLES

Table 1

Frequency and percentage distribution of demographic variables

N = 200

SR.NO	DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE
1.	Age		
	• 18 – 20 years	135	67.5%
	• 21 – 23 years	63	31.5%
	• 24 – 26 years	2	1%
2.	Sex		
	• Male	9	4.5%
	• Female	191	95.5%
3.	Class		
	• B.Sc Nursing 1st year	45	22.5%
	• B.Sc Nursing 2nd year	50	25%
	• B.Sc Nursing 3rd year	50	25%
	• B.Sc Nursing 4th year	55	27.5%
4.	Religion		
	• Hindu	30	15%
	• Sikh	130	65%
	• Muslim	36	18%
	• Christian	4	2%
5.	Father's Educational status		
	• No formal education	46	23%
	• 10th pass	60	30%
	• 12th pass	46	23%
	• Graduate	38	19%
	• Post graduate	10	5%
6.	Mother's Educational status		
	• No formal education	51	25.5%
	• 10th pass	90	45%
	• 12th pass	33	16.5%
	• Graduate	18	9%
		8	4%

	• Post graduate		
7.	Father's occupation		
	• Unemployed	72	36%
		73	36.5%
	• Private sector	55	27.5%
	• Public sector		
8.	Mother's occupation		
	• Unemployed	149	74.5%
		35	17.5%
	• Private sector	16	8%
	• Public sector		
9.	Family monthly income		
	• <10,000	47	23.5%
		62	31%
	• 10,000 - 25,000	51	25.5%
		40	20%
	• 25,000 - 50,000		
	• >50,000		
10.	Dietary pattern		
	• Vegetarian	115	57.5%
		85	42.5%
	• Non – vegetarian		
11.	Health problems		
	• Yes	32	16%
		168	84%
	• No		
12.	Family illness history		
	• Yes	84	42%
		116	58%
	• No		

Table 2
Frequency and percentage distribution of study subjects according to the measured value of BMI
N=200

Level of Anxiety	F	%
<18.5 (underweight)	68	34
18.6-24.9(normal)	115	57.5
25-29.9(overweight)	17	8.5

Table 3
Frequency and percentage distribution of study subjects according to their Eating Habits
N=200

SR.NO	TYPE OF EATING HABITS	RANGE	FREQUENCY	PERCENTAGE
1.	Unhealthy eating habits	31- 86	2	1%
2.	Neutral eating habits	87 -135	151	75.5%
3.	Healthy eating habits	136 -185	47	23.5%

Table : 4
Correlation coefficient of the variables under study.

SR.NO	VARIABLES UNDER STUDY	CORRELATION COEFFICIENT	'p'Value
1.	Eating habits	r = -0.004	0.270
2.	Body mass index		

Table :5

The association between eating habits with their selected socio demographic variables.

SR.NO	DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE	χ^2	'p'
1.	Age • 18 – 20 years (a) • 21 – 23 years (b) • 24 – 26 years (c)	135 63 2	67.5% 31.5% 1%	1.7666	0.7785 (NS)
2.	Sex • Male (a) • Female (b)	9 191	4.5% 95.5%	3.0581	0.2166 (NS)
3.	Class • B.Sc Nursing 1 st year (a) • B.Sc Nursing 2 nd year (b) • B.Sc Nursing 3 rd year (c) • B.Sc Nursing 4 th year (d)	45 50 50 55	22.5% 25% 25% 27.5%	18.6156	0.0047 (S)
4.	Religion • Hindu (a) • Sikh (b) • Muslim (c) • Christian (d)	30 130 36 4	15% 65% 18% 2%	4.9986	0.5439 (NS)
5.	Father's Educational status • No formal education (a) • 10 th pass (b) • 12 th pass (c) • Graduate (d) • Post graduate (e)	46 60 46 38 10	23% 30% 23% 19% 5%	10.5617	0.2277 (NS)
6.	Mother's Educational status • No formal education (a) • 10 th pass (b) • 12 th pass (c) • Graduate (d) • Post graduate (e)	51 90 33 18 8	25.5% 45% 16.5% 9% 4%	23.4464	0.0027 (S)
7.	Father's occupation • Unemployed (a) • Private sector (b) • Public sector (c)	72 73 55	36% 36.5% 27.5%	4.9482	0.2926 (NS)
8.	Mother's occupation • Unemployed (a) • Private sector (b) • Public sector (c)	149 35 16	74.5% 17.5% 8%	5.7564	0.2180 (NS)
9.	Family monthly income • <10,000 • 10,000 - 25,000 • 25,000 - 50,000 • >50,000	47 62 51 40	23.5% 31% 25.5% 20%	2.1074	0.9095 (NS)
10.	Dietary pattern • Vegetarian • Non – vegetarian	115 85	57.5% 42.5%	0.4759	0.7882 (NS)
11.	Health problems • Yes • No	32 168	16% 84%	2.8924	0.2354 (NS)
12.	Family illness history • Yes • No	84 116	42% 58%	15.7363	0.0002 (S)

MAJOR FINDINGS.

- There was no correlation between eating habits and BMI of the nursing students of the selected sample.
- There was significant association shown between class, mother's educational status and family illness history with Eating habits.

III. Discussion

The findings of the present study revealed that there is no correlation between Eating habits and Body mass index of the nursing students of the selected nursing college and significant association is shown between class, mother's educational status and family illness history with Eating habits. The correlation coefficient between BMI and eating habits is 'r' = -0.044 and 'p' value came out to be 0.270. Hence there is no correlation between Eating Habits and BMI.

This finding is supported by a study conducted by Al-Muammar MN, El-Shafie M, Feroze S(2014) conducted a cross-sectional study measured body mass index (BMI) and determined the eating habits and lifestyle of 107 randomly selected female adolescent students (age 12-15 years) at schools in Riyadh. About half the students (53.3%) were within normal weight, 28.6% were underweight, 12.4% overweight and 5.7% obese. The majority of the students did not have healthy dietary or exercise habits. There were no significant differences between BMI category and dietary pattern and lifestyle.⁴

A research study conducted by Nizar Abdul Majeed Kutty, Tin Yen Ru, Vincent Hwang Qi Chiang, Wee Ying Zhi et al (2015) conducted a cross-sectional study to explore the association between dietary habits and body mass index among university students and determines the prevalence of overweight and obesity among university students. The association between dietary habits and BMI, only snack intake, favourite beverage and daily water intake showed significant association.⁵

IMPLICATIONS

Nursing Education

Nursing education need to be strengthened to enable nursing students to know about healthy dietary pattern. Nursing curriculum should provide education regarding healthy eating habits to nursing students in nursing colleges.

Nursing Research

The findings of the study serve a basis for nursing professional and the students to conduct further studies about eating habits. A knowledge, attitude and practice study can be conducted on dietary pattern of students. Assess the knowledge, attitude and practice on self care activities related to eating habits among nursing students. Assess the lifestyle and identify the unhealthy eating habits among nursing students. The study can be extended and data collection may be extended for a period of long time. The study can be conducted to assess the views on health information received and its application by nursing students.

IV. Recommendations

Based on the results of the study, following recommendation are made:

- Further researches can be conducted by taking other parameters for assessment of nutritional status of the students.
- The study can be replicated on a much larger sample to validate and generalize its findings.
- A multi centre study could be done.
- A true experimental (RCT) study could be done

CONFLICT OF INTEREST

There is no conflict of interest as researcher had not received any financial support from institute or individual. Project was self financed.

V. Conclusions

On the basis of the findings of the study, it is concluded that there was no correlation between BMI and eating habits of nursing students. Hence, it can be concluded that decreased or increased level of BMI has got no relation with the students eating habits.

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