

## Assessment of Dietary Pattern and Nutritional Status of BScN 4 Year Nursing Students at a Private Nursing College Lahore

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### Abstract

**Aim:** The present study is to evaluate nutritional status of undergraduate students of Saida Waheed FMH College of Nursing. **Methodology:** Study design: Descriptive Cross-sectional study design was used to conduct this study. **Study setting:** Study was conducted at Saida Waheed college of Nursing Lahore. **Study population:** Students studying at a private Nursing College. **Sampling technique:** Researchers used Simple Random sampling method to collect sample. **Study Duration:** This study was completed within 6 months From December 2021 to May 2022. **Sample size:** The sample size was 132 undergraduates BScN 4years students. Data Collection tools: Data was collected through adopted QUESTIONNAIRE from ISLAMIA COLLEGE BAHWEL PUR FROM MR KHLIL AHMED after taking his consent. Data Analysis Plan: Data was analyzed by using SPSS version 25. Means and standard deviations (SD) was calculated from continuous data, whereas, categorical data is expressed in frequencies and percentages. **Result:** In this study the total participants were 132 undergraduate BScN 4years students.. Among total participants 58 (43.9%) were male and 74 (56.1%) female. Majority 65 (59.2%) of the participants having age group between 21 to 25 years. 43.2% students were studying in first years, 35.6% in year two, 12.1% year three and 9.1% students studying in year four. Most of the respondents were belong to middle income family 62.9%, only one participants having family income more than 100000. Among them mostly students residing in hostel (65.9%) and 34.1% were day scholar. Regarding their area of location 68.9% were from Urban and 31.1% belong to rural area. Majority were Muslims (78.0%) as compared to Christian (21.2%) and 1 participant were from Hindu community (24%) consume fat more than 30%. **Conclusion:** Students are future and backbone of any nation's and countries. Special attention is needed for their health. Present study findings indicate that 26% of study participants are overweight and obese and few 12% are also suffering from underweight while 62% participants are found with normal Body Mass Index.

**Keywords:** Assessment, Dietary, Nutritional.

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## INTRODUCTION

Consuming a healthy diet throughout the life-course helps to prevent malnutrition in all its forms as well as a range of non-communicable diseases (NCDs) and conditions. Fruit, vegetables, legumes, nuts and whole grains, salts, fats and sugar. A healthy diet helps to protect against malnutrition in all its forms, as well as non-communicable diseases (NCDs), including such as diabetes, heart disease, stroke and cancer. Healthy dietary practices start early in life – breastfeeding

fosters healthy growth and improves cognitive development, and may have longer term health benefits such as reducing the risk of becoming overweight or obese and developing NCDs later in life. Therefore, promoting a healthy food environment – including food systems that promote a diversified, balanced and healthy diet – requires the involvement of multiple sectors and stakeholders, including government, and the public and private sectors (WHO-2020)

A dietary pattern is the combination of foods and beverages consumed in a day, week, or year. As a result, dietary patterns can be more closely connected with overall health condition. A healthy dietary pattern consists of nutrient-dense forms of foods and beverages across all food groups, in recommended amounts, and within calorie limits (A, Pike 2021).

Nutritional status is the sum total of an individual's anthropometric indices as influenced by intake and utilization of nutrients, which is determined from information obtained by physical, biochemical, and dietary studies. Studies have shown that youths are particularly vulnerable to poor eating habits and are said to be in the habit of eating "junks. These poor eating habits may likely arise from lack of knowledge of the cumulative effects of their eating habits (K, Omage, V, Omuemu, 2018).

Balanced diet which can help in maintaining immunity is important for prevention and management of viral infections. There are several vitamins and trace elements which are essential for the normal functioning of the immune system. Eating a broad variety of foods in the right proportions, and consuming the right amount of food and drink to attain and maintain a healthy body weight. Try to choose a variety of different foods from the five main food groups to get a large sort of nutrients. Fruit and vegetables are a good source of vitamins and minerals and fiber, and must make up just over a third of the food you eat each day (Website [www.nhs.uk](http://www.nhs.uk)).

Natalie Butler (2020) explains about nutrition, which is the study of nutrients in food, how the body uses them, and the relationship between diet, health, and disease. Nutrition which provides nourishment is also focuses on how people can use food choices to reduce the danger of disease, what happens if a person has too much or too little of a nutrient. Proteins, carbohydrates, fat, vitamins, minerals, fiber, and water are all nutrients. If people do not have the right balance of nutrients in their daily diet, the risk of developing certain health situation will increases. Nutrition has two broad groups' macro Nutrients and micro nutrients. Macro consist on Fats, Protein, carbohydrate and water while micro nutrients consist on mineral, sodium, potassium, vitamins, zinc, iron etc. Macronutrients, need in relatively large quantities while Micronutrients are essential in small amounts, N, Butler (2020).

Nurses are the role model and back bone of health system. They are playing a critical role by providing care to the patient and their families in hospital as well as in community. Nursing students are also important personnel for health care delivery. Their nutritional status is very much important to assess to roll-out their dietary pattern and nutritional status (R, Hadaye, 2019).

## METHODOLOGY

### Study design

**Study design:** Descriptive Cross-sectional study design was use to conduct this study.

**Study setting:** Study was conducted at Saida Waheed college of Nursing Lahore.

**Study population:** Students studying at a private Nursing College.

**Sampling technique:** Researcher was use Simple Random sampling method for study conduct.

**Study Duration:** This study was be completed within 6 months from December 2021 to May 2022.

**Sample size:** The sample size was be 132 students this is calculated by calculator, in which 95% confidence interval and 5% margin of error.

### Inclusion criteria:

- BScN Nursing student
- Both male and female student
- Willing students

### Exclusion Criteria:

- Post RN student, post specialized student, midwifery
- Un willing students.

**Data Collection tools:** Data was collected through adopted QUESTIONNAIRE from ISLAMIA COLLEGE BAHWEL PUR FROM MR .KHLIL AHMED after taking his consent.

**Data Analysis Plan:** Data was analyzed by using SPSS version 25. Means and standard deviations (SD) was be calculated from continuous data, whereas, categorical data is expressed in frequencies and percentages.

## RESULTS

### Demographic Characteristics

#### Demographic data

In this study the total participants included were 132 questionnaire were distributed and the same were collected. Among total participants 58 (43.9%) were male and 74 (56.1%) female. Majority 65 (59.2%) of the participants having age group between 21 to 25 years. 43.2% students were studying in first years , 35.6% in year two, 12.1% year three and 9.1 % students studying in year four. Most of the respondents were belong to middle income family 62.9%, only one participants having family income more than 100000. Among them mostly students residing in hostel (65.9 %) and 34.1% were day scholar. Regarding their area of location 68.9% were from Urban and 31.1% belong to rural are. Majority were Muslims (78.0%) as compared

to Christian (21.2%) and 1 participant were from Hindu community (Table 1).

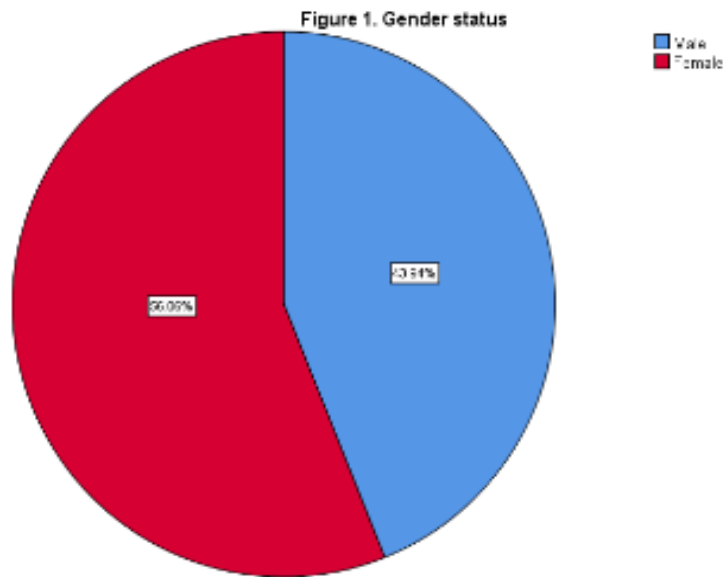


Table 1: Demographic Data

GENDER	Frequency	Percentage
Male	58	43.9%
Female	74	56.1%
<b>Total</b>	<b>132</b>	<b>100.0%</b>
<b>AGE GROUP</b>		
15 to 20	50	37.9%
21 to 25	65	49.2%
26 to 30	14	10.6%
30 to 35	3	2.3%
<b>Total</b>	<b>132</b>	<b>100.0%</b>
<b>YEAR OF STUDYING</b>		
1st year	57	43.2%
2nd year	47	35.6%
3rd year	16	12.1%
4th year	12	9.1%
<b>Total</b>	<b>132</b>	<b>100.0%</b>
<b>FAMILY INCOMWE</b>		
Less than 25000	29	22.0%
26000 to 50000	83	62.9%
51000 to 100000	19	14.4%
More than 100000	1	.8%
<b>Total</b>	<b>132</b>	<b>100.0%</b>
<b>LOCATION</b>		
Hostel	87	65.9%
Day scholar	45	34.1%
<b>Total</b>	<b>132</b>	<b>100.0%</b>
<b>AREA</b>		
Urban	91	68.9%
Rural	41	31.1%
<b>Total</b>	<b>132</b>	<b>100.0%</b>
<b>RELIGION</b>		
Islam	103	78.0%
Christian	28	21.2%
Hindu	1	.8%
<b>Total</b>	<b>132</b>	<b>100.0%</b>

Meal per day in relation to family income, we have calculated as per result that most of student's family incomes were between 26000 to 50,000 per

month, the same is resulted in meal per day. 65% students were taking meal three times a day with income range 26000 to 50,000 (Figure 5)

About day scholar and hostel students in relation to meal per day. In hostel students most (68%) of them were taking meal three time a day, 11% two time and 8% four time a day (Figure 6).

Regarding are of location (rural/urban) students belong to urban area were resulted as 6%, 78%, 7% two time, three time and four time meal per

day respectively. In rural area's student's meal per day calculated as 10% two times, 26% three time and 5% four times per day (Figure 7).

As per religion, the results show that majority having Islamic religion were taking meal 13% two times, 79% three time and 11% four times (Figure 8).

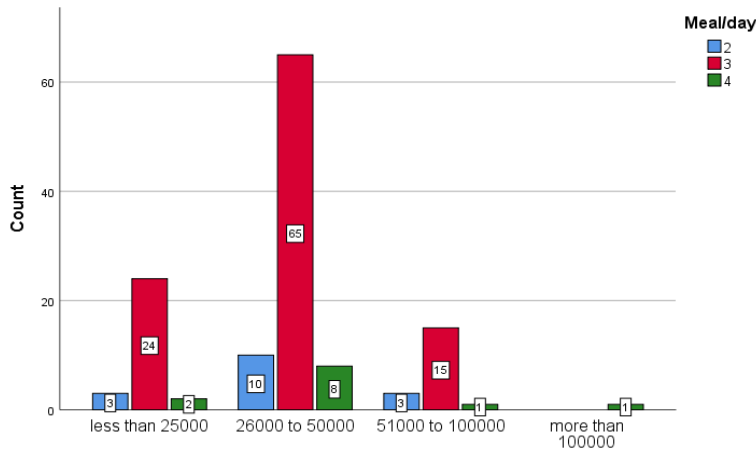


Figure 5. Meal per day vs Family income

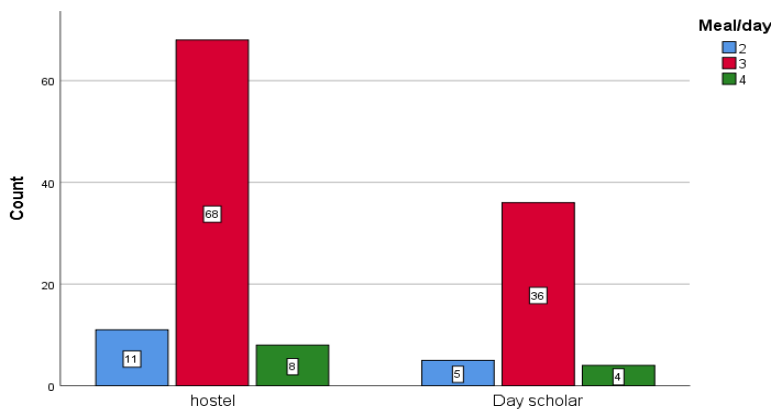


Figure 6. Meal per day and students Living in Hostel/day scholar

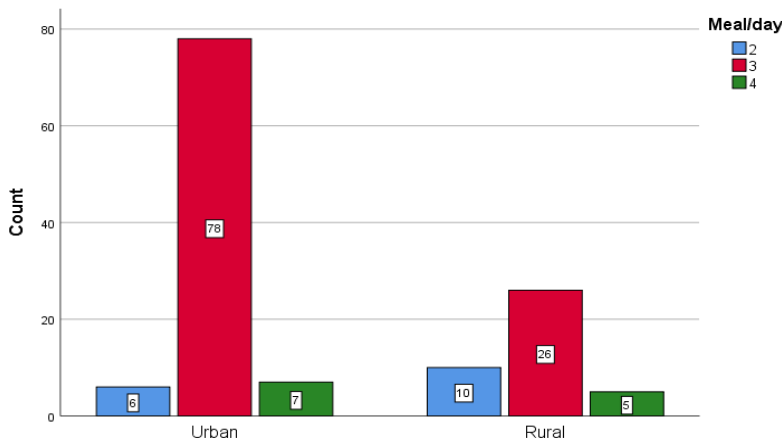


Figure 7. Meal per day vs Area of residence of students

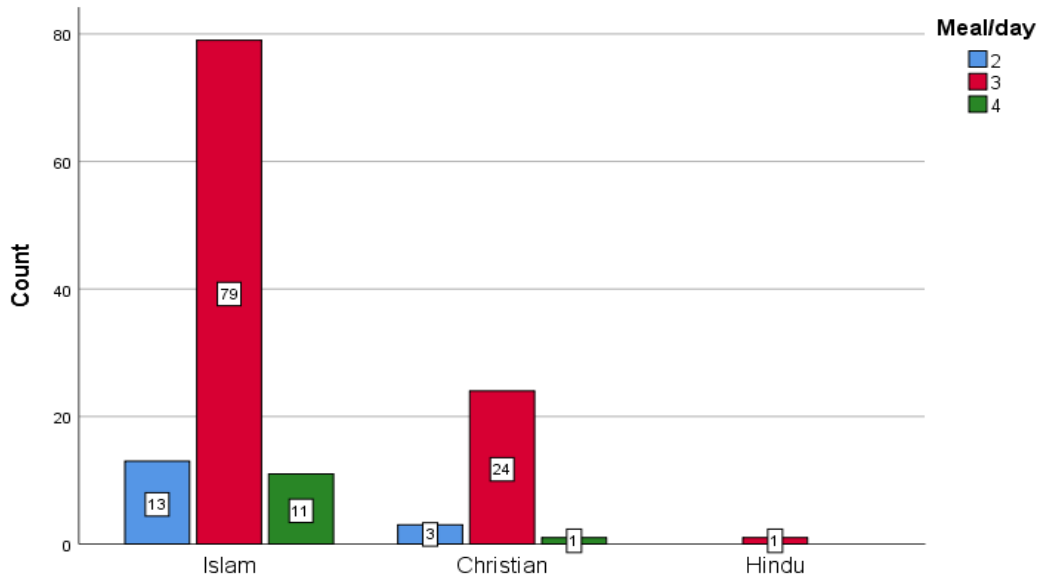


Figure 8. Meal per day and Religion of students

**Breakfast**

Breakfast is very common in general. Normally every person is taking breakfast every day. In this study it was resulted that majority (87.8%) of students were taking breakfast every day and 11.36% were taking breakfast some time and very less number of students (0.76%) reply that they were not taking breakfast (Figure 9).

Regarding male and female students, mostly female (62) were taking breakfast daily as compared to male (54). Majority of students (58) having age

between 21 to 25 year were taking breakfast daily. 50 students of 1<sup>st</sup> year were taking breakfast daily, 41 students of 2<sup>nd</sup> year, 15 students of 3<sup>rd</sup> year and 10 students of fourth year were taking breakfast daily. Mostly student having family income were between 26000 to 50000, were taking breakfast daily. 77 number of hostel students were taking breakfast daily while 39 were day scholar. Among rural and urban mostly urban area (81) in category of daily breakfast while in Islamic religion students, 92 were daily breakfast and 10 taking some time (Table 2).

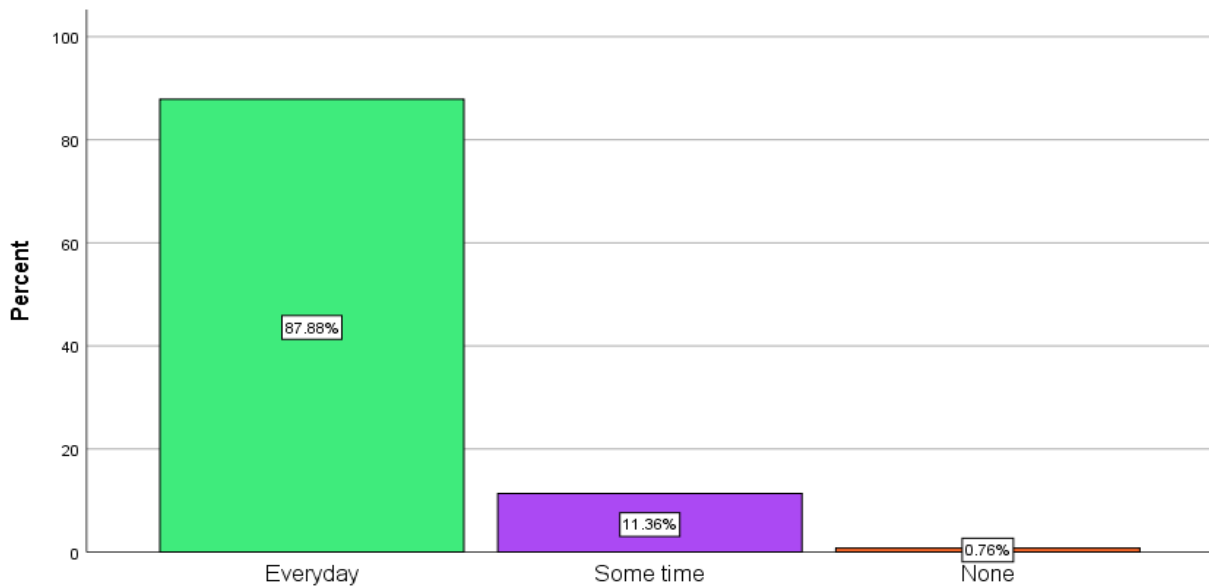


Figure 9. Break fast overall result

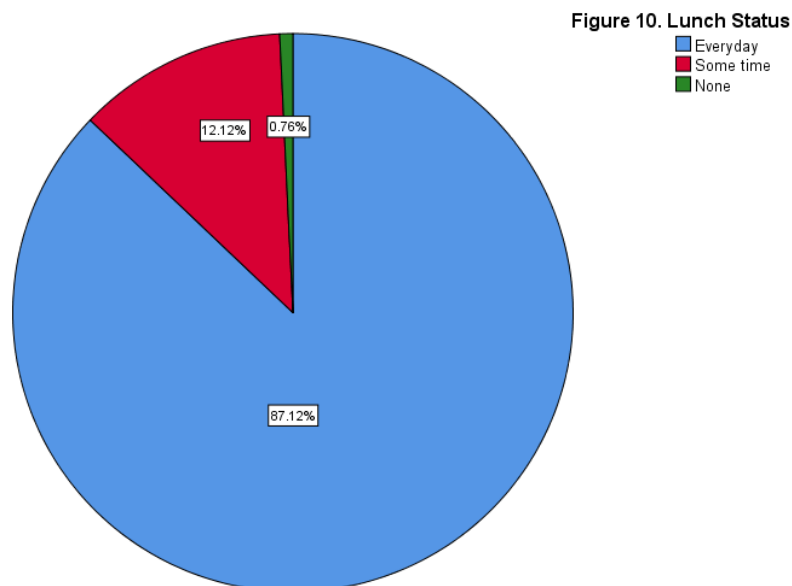
**Table 2: Breakfast doing per day**

Gender	Frequency of breakfast per day			
	Everyday	Some time	None	Total
Male	54	3	1	58
Female	62	12	0	74
<b>Total</b>	<b>116</b>	<b>15</b>	<b>1</b>	<b>132</b>
<b>Age in year</b>				
15 to 20	44	5	1	50
21 to 25	58	7	0	65
26 to 30	12	2	0	14
30 to 35	2	1	0	3
<b>Total</b>	<b>116</b>	<b>15</b>	<b>1</b>	<b>132</b>
<b>Year of studying</b>				
1st year	50	6	1	57
2nd year	41	6	0	47
3rd year	15	1	0	16
4th year	10	2	0	12
<b>Total</b>	<b>116</b>	<b>15</b>	<b>1</b>	<b>132</b>
<b>Family income</b>				
Less than 25000	23	5	1	29
26000 to 50000	76	7	0	83
51000 to 100000	16	3	0	19
More than 100000	1	0	0	1
<b>Total</b>	<b>116</b>	<b>15</b>	<b>1</b>	<b>132</b>
<b>Living</b>				
Hostel	77	9	1	87
Day scholar	39	6	0	45
<b>Total</b>	<b>116</b>	<b>15</b>	<b>1</b>	<b>132</b>
<b>Area</b>				
Urban	81	9	1	91
Rural	35	6	0	41
<b>Total</b>	<b>116</b>	<b>15</b>	<b>1</b>	<b>132</b>
<b>Religion</b>				
Islam	92	10	1	103
Christian	23	5	0	28
Hindu	1	0	0	1
<b>Total</b>	<b>116</b>	<b>15</b>	<b>1</b>	<b>132</b>

**Result of Lunch doing daily**

Regarding lunch status of the students per day. Majority (87.12%) were taking lunch daily (see Figure

10). Detail of lunch according to gender, year of students, income status etc given in Table 3.



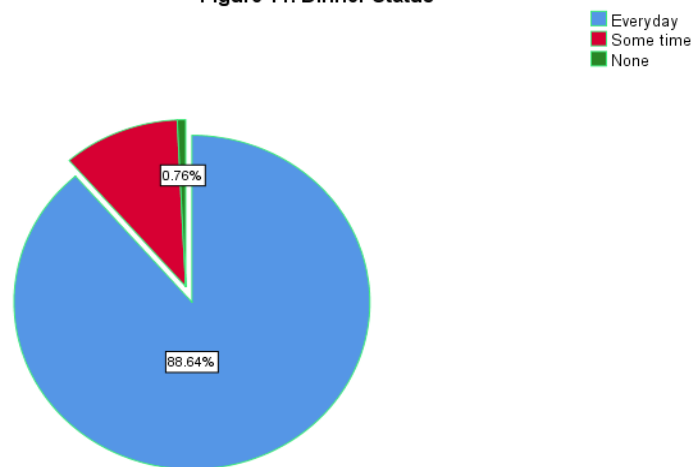
**Table 3: Lunch status of students**

Gender	Frequency of Lunch per day			
	Everyday	Some time	None	Total
Male	53	4	1	58
Female	62	12	0	74
Total	115	16	1	132
<b>Age in year</b>				
15 to 20	41	9	0	50
21 to 25	59	5	1	65
26 to 30	13	1	0	14
30 to 35	2	1	0	3
Total	115	16	1	132
<b>Year of studying</b>				
Ist year	48	8	1	57
2nd year	40	7	0	47
3rd year	15	1	0	16
4th year	12	0	0	12
Total	115	16	1	132
<b>Family income</b>				
S	24	5	0	29
26000 to 50000	72	10	1	83
51000 to 100000	18	1	0	19
more than 100000	1	0	0	1
Total	115	16	1	132
<b>Living</b>				
Hostel	75	12	0	87
Day scholar	40	4	1	45
Total	115	16	1	132
<b>Area</b>				
Urban	83	8	0	91
Rural	32	8	1	41
Total	115	16	1	132
<b>Religion</b>				
Islam	88	14	1	103
Christian	27	1	0	28
Hindu	0	1	0	1
Total	115	16	1	132

**Dinner status of students**

Dinner is one of common meal patterns. In this study it is resulted that 88.64% of the students were

taking dinner every day and only 0.76% was not taking dinner every day but some time. Details description of dinner status is given below in Figure 11 and Table 4.

**Figure 11. Dinner Status**

**Table 4: Dinner status of students per day**

Gender	Frequency of Dinner per day			
	Everyday	Some time	None	Total
Male	53	5	0	58
Female	64	9	1	74
Total	117	14	1	132
<b>Age in year</b>				
15 to 20	44	6	0	50
21 to 25	59	5	1	65
26 to 30	11	3	0	14
30 to 35	3	0	0	3
Total	117	14	1	132
<b>Year of studying</b>				
Ist year	50	7	0	57
2nd year	40	6	1	47
3rd year	15	1	0	16
4th year	12	0	0	12
Total	117	14	1	132
<b>Family income</b>				
less than 25000	25	3	1	29
26000 to 50000	74	9	0	83
51000 to 100000	17	2	0	19
more than 100000	1	0	0	1
Total	117	14	1	132
<b>Living</b>				
Hostel	76	10	1	87
Day scholar	41	4	0	45
Total	117	14	1	132
<b>Area</b>				
Urban	82	8	1	91
Rural	35	6	0	41
Total	117	14	1	132
<b>Religion</b>				
Islam	91	12	0	103
Christian	25	2	1	28
Hindu	1	0	0	1
Total	117	14	1	132

### Taking Different food in a week

As shown in table 5, majority of students were taking food less than three times in a week, which means not satisfactory. 75% students' reply that they were taking legumes and nuts less than three times per week as compare to other food item, while the lowest percentage in less than three time per week was vegetables. Which show that mostly students were not taking interest in taking vegetable in their meal weekly, which is not a good habit. It is recommended that 2 to 3 cup of vegetable must be includes in daily meal. According to food pyramid, fruits and olive oil must be taken daily, legumes and nuts must be taken 2 times a week, meat in very less amount in a week. Students must consider that a balance and healthy diet is very

important on regular basis. Fast food and soft drinks are not good for health, our result also show that majority (72% fast food and 70%soft drinks) of students taking less than 3 times in a week. The result of fruits per week was 62.9% as less than three times, which is against the recommended food pyramid, it must be taken daily.

Regarding BMI, most of the students were in healthy status, their BMI was 85.6%. 9.1% students' BMI show that they were underweight and 5.3 were overweight. These students must be educating about their health status. Our result show that there is no one having BMI more than 30 kg/m<sup>2</sup> means obese.



**Table 5: Different food intake per week**

Variables	Less than 3 time a week		More than 3 time a week	
Rice	93 (70.5%)		39 (29.5%)	
Fruits	83 (62.9%)		49 (37.15)	
Meat	92 (69.7%)		40 (30.3%)	
Vegetables	67 (50.8%)		65 (49.2%)	
Cereals	82 (62.1%)		50 (37.9%)	
Roti	96 (72.7%)		36 (27.3%)	
Eggs	91 (68.9%)		41 (31.1%)	
Legumes and Nuts	99 (75.0%)		33 (25.0%)	
Oils and fats	96 (72.7%)		36 (27.3%)	
Soft drinks	96 (72.7%)		36 (27.3%)	
Fast Foods	93 (70.5%)		39 (29.5%)	
Range	Less than 18.5 kg/m <sup>2</sup>	18.5 to 24.9 kg/m <sup>2</sup>	25.0to 29.9 kg/m <sup>2</sup>	30.0 or above kg/m <sup>2</sup>
BMI	12 (9.1%)	113 (85.6%)	7 (5.3%)	00

Protein intake in diet is less than 30%. 327 (76%) students consume fat less than 30% in their diet and 103 (24%) consume fat more than 30%.

**Correlation between variables:** There are of two main variables of our study, dependent and independent variables.

**Dependent variable:** The dependent variable is the variable that is being measured or tested in an experiment. The dependent variable is the effect. Its value depends on changes in the independent variable. Examples Nutritional status.

**Independent variable:** It is a variable that stands alone and isn't changed by the other variables you are trying to measure. It is a cause. Examples of dependent variable are; Dietary pattern.

## DISCUSSION

Majority 74 (56.1%) of the respondents were female. The respondent rate was 100%. As our study was conducted on students so most of them were age between 21 to 25 year. This study was focus on two main objectives, the dietary pattern and nutritional status of nursing students. A dietary pattern includes all type of nutrients like vegetables, fruits, beverages etc in their recommended amount. For an adult it is advised to take 2200caloriees daily and for women 1800 per day. We can say that the dietary pattern was not satisfactory. All the respondent were reply that they eat all the mentioned food for less than three times a week, soft drinks and fast food related response is good. All the respondents reply that they used fast food and soft drink in less than three time a week.

According to National Nutritional Survey of Pakistan (2011) Women in Pakistan are more vulnerable to nutritional deficiencies and non-communicable diseases than men with 18% underweight, 19% overweight, 10% obese. In our result no one found obese which is good.

According to Pakistan Dietary Guidelines for better Nutrition-PDGN (2019), the objective of which is to make recommendations about the components of a healthy and nutritionally adequate diet to help in promotion of health and prevent chronic disease for current and future generations. The PDGN recommended daily consumption of basic food groups including cereal grains and grain products, meat, pulses and eggs, milk and milk products, vegetables and fruits. As per our results the dietary pattern was good for some food like soft drinks and fast food, but for other not satisfactory. Fast foods may be defined as ready to eat food available in public places, food streets, food corners and restaurants.

In the study of South African undergraduate students (2019), show that 62% never consumed legumes, 43% students reported a high intake of fats and sweets, 19.8% of the students were overweight or obese. In our study no one found obese only 9.1% were underweight. The nutritional status was good as compared to dietary pattern, the BMI of majority 113 (85.6%) students in the range of 18.5 to 24.9 kg/m<sup>2</sup> means healthy.

## CONCLUSION

From our study it is concluded that majority of the students were female in the age of 21 to 25 having family income between 26000 to 50,000 per month. Mostly the participated students were studying in year one and residing in hostel, belong to Urban area. Regarding meal pattern, majority of students were taking meal three times a day. In which male students 44% and female 60% were taking meal three times per day. Mostly all the students were taking break-fast daily among which female ratio (62) were high than male (54). Lunch and dinner were also taking daily by majority students. We asked 11 number of different food items regarding their usage per week, less than three times or more than three times. Majority students reply that they taking food less than three times a week for all food. Among these 11, fast food and soft drink

were also included, so it is good for fast food to be used less than three times a week as well as soft drinks. The result for all other 9 foods was not satisfactory. Because all these must be used more than three times a week. So we can say that their dietary pattern is not so good. About the BMI which is related to nutritional status that was good, because the results show that 85.6% of students' BMI were 18.5 to 24.9 kg/m<sup>2</sup>, means in the healthy category. No students were obese, only underweight (9.1%) and overweight (5.3%) were present.

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