



## Original Article

## Practice and Application of Knowledge by Nutrition Students In Pakistan

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## ABSTRACT

Nutritional knowledge and awareness regarding prevention and cure of diseases has helped in establishing the field of nutrition globally **Objective:** To assess whether the nutrition students applying their knowledge in their daily lives **Methods:** A cross-sectional study was performed at University of Lahore where 100 students of diet & nutrition were selected by using convenience sampling technique. Adults of both genders above age 18 of semester 7th, 8th, and 9th were included. A questionnaire of 28 questions was assembled having total score of 56. Scores above 28 were considered good and below 28 were considered poor **Results:** Majority of the participants were females (88%). The mean weight and height of students were 59.41 + 10.74kg and 162.78 + 7.49cm, respectively. 28 questions were devised for the assessment of nutritional knowledge application in daily routine of our participants. Questions were divided into 3 categories. Likert-type scaling method was used to score participants. Total score was set 56 and cut-off score was set greater than equal to 28. It was observed that most of our participants scored more than 28. The mean score was 36.9, inferring that they were applying their knowledge in their daily lives **Conclusion:** Almost all our participants studying Diet and Nutritional Sciences had proper knowledge of nutrition and most of them are practicing this knowledge in their daily lives. Only 13% of the students were unable to do so because of unhealthy choices given by authorities such as hostel and university's cafes and their own preferences etc.

## INTRODUCTION

Nutrition plays a vital role in determining the physical and mental health status of an individual, and the quality of diet correlates with the quality of life [1]. According to an Australian study conducted in 2015, the field of nutrition has grown immensely over the years with many accredited universities offering different nutrition programs, showing a 62% increase in students enrolling in nutrition since 2007 [2,3]. In college students, the dietary habits are affected mostly by peer pressure [4]. It has been observed that when the students move on to university level, their weight tends to fluctuate due to poor dietary habits, usually resulting in weight gain [5,6,7]. University is considered to be an important and critical time period which effects a student's eating habits and changes in their weight [8,9].

Jennifer Kristin, 2011 guided in her thesis about practice and application of knowledge by dietetic and human nutrition students. In this research, it was revealed that students of dietetics showed better comprehension of questions and their practice [10,11]. Lynne M et al., 2015 experimented on the undergraduate nursing students to evaluate their nutritional knowledge and found that mean nutritional score was low but overall nutritional score was higher among students who receive nutrition education [12]. Joshi and Kushwaha, 2019 conducted research on hostel students to assess their nutritional status. They assessed the dietary intake, knowledge and practice by opting 24 hours' recall and history of food habits. Results revealed that consumption of junk food was high among

hostlers due to their convenience [13]. Hilgeret et al., 2016 conducted research on 689 university students 30.5% males and 22.69% females. This study concluded that barriers to healthy behaviors were limited time due to studies, unavailability of healthy meals at university cafe, and high prices of healthy foods [14]. Ansari et al., 2015 conducted research on students who just recently enrolled in universities to analyze their eating habits in accordance with the International dietary guidelines. They observed that females were found to be better adhered with healthy eating practices as compared to males [15,16]. Jawed et al., 2018 investigated in research about the dietary, lifestyle practices and health behaviors of 1st and 2nd year students. The overall scores show positive health and nutritional awareness among student of 1st year [17]. Nasir et al., 2017 performed a cross sectional study on 756 students to assess nutritional believes, practice, awareness and participation of university adults towards nutrition. Results showed that 70% of the students have no regular meal routine [18]. Ali et al., 2015 conducted a cross sectional study on athletic university students to examine nutrition related awareness, diet related habits and intake of nutrients of athletic students from Sultan Qaboos University. They concluded that nutrition knowledge and dietary habits of male athletes was better than female athletes [19]. This study will determine the fact that our future dietitians hold the skill and knowledge to change their own eating behavior in a positive way.

#### Methods:

Cross-sectional study design was incorporated to collect data from 100 students (n=100) enrolled in the course of dietetics and nutrition of University of Lahore. Sample size of our survey was 100 students (n=100) enrolled in the course of dietetics and nutrition. We have used convenience sampling technique was opted to gather data from the nutrition students through pretested questionnaire. A self-administered questionnaire consisting of 29 questions related to changes in healthy behavior, food consumption from different food groups and barriers in application of nutritional knowledge was

used to collect data from the participants. Questionnaire consisting of 28 questions had a total score of 56, Score above 28 (cut off score) was considered as good and score below 28 was considered poor. Statistical Package for the Social Sciences (SPSS) version 2021 was used to analyze data and descriptive statistics were applied to calculate the frequencies and infer the parameters.

#### Results:

##### Demographics

The final number of participants in this study were hundred: eighty-eight percent (88%) were females and twelve percent (12%) were males. The mean age of the participants was 22.08 + 0.94 years. Only senior year students, studying in degree named as Doctor of Diet and Nutritional Sciences, were included in this study: 32% were reported to be studying in semester 7th, 23% were in semester 8th and 45% students were in semester 9th. As an environment where person is living, is a factor which plays a significant role in practicing knowledge, participants were asked to specify their residence. Forty-eight (48%) students were living in hostels whereas fifty-two (52%) were day scholar. Table 1 below displays the demographic structure of the participants (Table 1).

Twenty-eight questions were built to assess, whether the participants were applying their nutritional knowledge in their daily life or not. The questions in the survey were divided into 3 categories i.e., change in healthy behavior, consumption of different foods, and barriers. And lastly participants were asked to select the servings they were consuming in a day from different food groups. Likert-type scale was used to measure the change in participants after being enrolled in nutrition degree. Participants were asked to select one of the three options or words: decreased, same or increased. The score or scale for question no 1, 2, 5, 7, 8, 16, 18, 20, and 21 was set as: increased = 0, same = 1, and decreased = 0. Whereas, the scoring criteria for rest of the questions were set as: decreased = 0, same = 1, and increased = 2. Table no 3 shows the responses marked by participants.

Sr. No	Questions	Responses	Frequency (n)	Percentage (%)
<b>Change in behavior</b>				
1	How has your probability of skipping one of the main meals (breakfast/lunch/dinner) changed?	Increased	28	28
		Same	24	24
		Decreased	48	48
2	How has your habit of snacking between meals changed?	Increased	27	27
		Same	42	42
		Decreased	31	31
3	How has your intake of a balanced diet (including healthy ingredients such as whole wheat, pulses, legumes, eggs nuts, fruits and vegetables) changed?	Increased	18	18
		Same	30	30
		Decreased	52	52

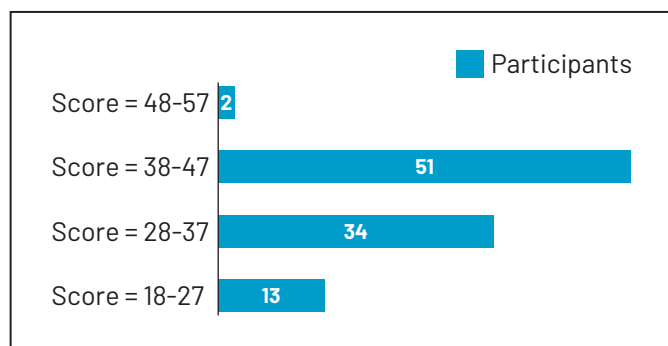
Sr. No	Questions	Responses	Frequency (n)	Percentage (%)
4	How has your preference of having home-made meal over outdoor meal (i.e. junk food/instant food/restaurant meal) changed?	Increased	21	21
		Same	32	32
		Decreased	47	47
5	How has your consumption of junk food/fast food and fried food changed?	Increased	26	26
		Same	30	30
		Decreased	44	44
6	How has your interest in cooking new/traditional recipes changed?	Increased	21	21
		Same	39	39
		Decreased	40	40
7	How has your consumption of unhealthy food when you are bored or stressed or upset changed?	Increased	29	29
		Same	36	36
		Decreased	35	35
8	How has your chances of taking nutrition supplements to enhance your health and immunity?	Increased	33	33
		Same	37	37
		Decreased	30	30
9	How has your participation in exercise changed?	Increased	18	18
		Same	36	36
		Decreased	46	46
10	How has your habit of reading food labels of packaged items before buying changed?	Increased	12	12
		Same	24	24
		Decreased	64	64
11	How has it affected your practice of making healthy choices, Since you enrolled in this program?	Increased	4	4
		Same	16	16
		Decreased	80	80
12	How has your practice of checking your daily calorie intake changed?	Increased	10	10
		Same	47	47
		Decreased	43	43
13	How has your willingness to conduct or participate in nutritional awareness camps/seminars changed?	Increased	16	16
		Same	33	33
		Decreased	51	51
14	How has your purchase of fresh food changed?	Increased	11	11
		Same	19	19
		Decreased	70	70
15	How has your maintenance of your ideal body weight changed?	Increased	10	10
		Same	29	29
		Decreased	61	61
16	How have your beliefs of diet related myths changed?	Increased	45	45
		Same	25	25
		Decreased	30	30
17	How has your implementation of nutritional knowledge in disease management changed?	Increased	8	8
		Same	11	11
		Decreased	81	81
<b>Consumption of food from different food groups</b>				
18	How has your quantity/portions of meals and snacks changed?	Increased	36	36
		Same	45	45
		Decreased	19	19
19	How has your daily intake of fruits and vegetables changed?	Increased	12	12
		Same	35	35
		Decreased	53	53
20	How has your intake of sugar-sweetened beverages (carbonated soft drinks, sugar-sweetened juices) changed?	Increased	18	18
		Same	30	30
		Decreased	52	52

21	How has your consumption of sweets/candies/chocolate changed?	Increased	10	10
		Same	34	34
		Decreased	56	56
22	How has your usage of herbs and spices (like ginger, garlic, turmeric, cinnamon etc.), for the cure of ailments (such as cold, flu, cough, fatigue, headache etc.) changed?	Increased	14	14
		Same	31	31
		Decreased	55	55
23	How has your intake of water changed?	Increased	9	9
		Same	26	26
		Decreased	66	66
24	How has your intake of milk changed?	Increased	13	13
		Same	44	44
		Decreased	43	43
25	How has your intake of protein changed?	Increased	9	9
		Same	50	50
		Decreased	41	41
26	How has your consumption of low fat foods changed?	Increased	26	26
		Same	40	40
		Decreased	34	34
<b>Barriers faced in application of knowledge</b>				
27	How has the support of your family and friends in eating healthy changed?	Increased	10	10
		Same	42	42
		Decreased	48	48
28	How has your percentage of spending your money on buying healthy food items changed?	Increased	8	8
		Same	39	39
		Decreased	52	52

**Table 1:** Practice and Application of Knowledge

### Scores of Participants

Participants were scored, with respect to the response they chose, using likert-type scale as mentioned in the previous section. The mean score was 36.9, whereas the total score of 28 questions was set 56. Eighty-seven percent (87%) of the participants were scored above 28 and thirteen percent (13%) scored below 28. In this 13%, 6% students were living in hostels where as 7% were day scholar. It was then interpreted that participants who scored above 28 are practicing and applying their knowledge in their daily lives, those who scored near the mean are trying to apply. Whereas, those who scored below 28 are not practicing their knowledge.



**Figure 1:** Scores Gained by Participants

### DISCUSSION :

Not much research has been conducted in Pakistan on diet related issues, in fact our dietary guidelines and regulations have also not been modified according to the needs of our population or in accordance of the diet-related disease prevalence. Malnutrition is one of the major issues that are still at large in Pakistan. Bapat et al., 2016 conducted a study among 1st, 2nd and 3rd year of diet and nutrition students. In this study, it was observed that students from 3rd year have more awareness about nutritional concerns including fiber and vitamin intake, intake of sugary foods, along with balance of food groups in their diet. Similarly, in our study, it is seen that students of senior semesters i.e., 7th, 8th and 9th represented with greater awareness and application of nutrition knowledge [9]. A research conducted by Ross AM et al., in 2016 addressed some barriers that people face in the practice of nutrition and healthy knowledge. These barriers were related to psychological factors. These perceived barriers affect participation in healthy food choices [20]. Food preferences and food choices plays a vital role in an individual's health status. In our study, it is seen that more than half number of students were those who has increased the percentage of their expenditure on buying healthy and fresh food items. 52% participants are shown

spending more money on purchasing healthy foods, 39% were seen spending the same amount of money as before, and 8% were those whose expenditure decreased on the purchase of healthy foods. When these results were compared with one of the previous studies conducted by Sajwani et al., in 2009 among medical and non-medical students, it is observed that they were not reported spending their money on buying healthy foods due to lack of time and other factors [16].

## CONCLUSIONS :

This study concluded that almost all the participants studying Diet and Nutritional Sciences had proper knowledge of nutrition and most of them are practicing this knowledge in their daily lives.

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