

Assessment of Knowledge Regarding Healthy Eating Diets Among Students of Akhtar Saeed College of Nursing, Lahore

Mehtab Ali¹, Tooba Sattar¹, Mujahid Hussain¹, Saman Bibi¹, Shumaila Ashraf², Kainat¹

¹ Bachelor of Science in Nursing, Akhtar Saeed College of Nursing, Lahore, Pakistan

*Corresponding author: Mehtab Ali, mehtablound786@gmail.com, Tooba Sattar, toobarose3@gmail.com

"Cite this Article" Received: 14 March 2026; Accepted: 29 April 2026; Published: 11 May 2026

Author Contributions: Concept: MA, MH; Design: MTS, MH; Supervision, TS, Data Collection: MA, MH, MTS, MH, SB, SA, K; Analysis: MA, MTS, SA; Drafting: MTS, MH, SB, K. **Ethical Approval:** Akhtar Saeed College of Nursing, Lahore, Pakistan. **Informed Consent:** Written informed consent was obtained from all participants; **Conflict of Interest:** The authors declare no conflict of interest. **Funding:** No external funding; **Data Availability:** Available from the corresponding author on reasonable request; **Acknowledgments:** N/A.

ABSTRACT

Background: Healthy dietary knowledge is essential for nursing students because they are future healthcare professionals expected to promote disease prevention, healthy lifestyle practices, and patient-centered dietary counseling. Adequate understanding of healthy diet can support students' own wellbeing and strengthen their future role in health education. **Objective:** To assess the level of knowledge regarding healthy diet among students of Akhtar Saeed College of Nursing, Lahore. **Methods:** A quantitative descriptive cross-sectional study was conducted among 161 nursing students selected through convenience sampling. Data were collected using an adapted structured questionnaire consisting of socio-demographic variables and 17 knowledge statements related to healthy dietary practices, food groups, physical activity, salt, sugar, fats, refined grains, staple foods, and protein sources. Knowledge scores were converted into percentages and categorized using Bloom's cutoff, with scores of 70% or above classified as good knowledge and scores below 70% classified as poor knowledge. Data were analyzed using SPSS version 25, and results were summarized using frequencies, percentages, mean, and standard deviation. **Results:** The mean knowledge score was 49.57 ± 4.26 out of 68, with a mean percentage score of 72.90 ± 6.26 . Overall, 110 students (68.3%) had good knowledge, while 51 students (31.7%) had poor knowledge. Strong knowledge was observed regarding fruits and vegetables, dairy products, beans, physical activity, sugar intake, and protein sources; however, misconceptions were identified regarding refined grains, lard, staple foods, starch content, and body weight. **Conclusion:** Most nursing students demonstrated good knowledge regarding healthy diet, but targeted nutrition education is needed to correct specific misconceptions and improve applied dietary understanding. **Keywords:** Healthy Diet; Knowledge; Nursing Students; Nutrition Education; Nutritional Awareness.

INTRODUCTION

Healthy dietary practices are central to disease prevention, health promotion, and long-term wellbeing, particularly in relation to non-communicable diseases such as cardiovascular disease, type II diabetes mellitus, hypertension, obesity, and some cancers. Poor dietary patterns, including excessive intake of sugar, salt, saturated fat, and energy-dense foods, contribute substantially to preventable morbidity, while diets rich in fruits, vegetables, whole grains, legumes, dairy products, lean protein sources, and appropriate physical activity support metabolic health and reduce future disease risk (1). This issue is especially relevant in low- and middle-income countries, including Pakistan, where nutritional problems coexist with a growing burden of chronic lifestyle-related diseases. In this context, health professionals are expected not only to understand the principles of healthy eating but also to communicate accurate, practical, and culturally appropriate dietary advice to the public (2).

Nursing students represent an important population within the healthcare system because they are future frontline professionals who will participate in patient education, health counseling, disease prevention, and community-based health promotion. Their knowledge regarding healthy diet is therefore relevant both for their own health and for the quality of dietary guidance they may later provide to patients (3). During nursing education, students are exposed to basic health sciences and clinical training, yet previous literature indicates that nutrition-related knowledge among health students may be variable and is not always translated into accurate beliefs or healthy personal practices. Academic stress, time constraints, peer influence, convenience-food consumption, meal skipping, and limited practical nutrition training can all affect students' dietary understanding and behavior, even when they recognize the general importance of healthy eating (4,5).

Existing studies have reported mixed findings regarding nutrition knowledge and dietary awareness among students and healthcare-related populations. Some studies suggest that students may demonstrate reasonable awareness of broad dietary principles, such as the benefits of fruits, vegetables, dairy products, legumes, and physical activity, but may still hold misconceptions about refined grains, dietary fats, animal fat, sugar, salt, body weight, and the relative nutritional value of different food groups (6). Other evidence highlights that nutrition education interventions can improve knowledge, attitudes, and practices, suggesting that gaps in student knowledge are modifiable through structured academic and practical teaching approaches (7). However, the level of nutrition knowledge may vary by educational background, year of study, discipline, cultural dietary patterns, and access to reliable health information.

Despite the professional importance of nutrition counseling in nursing practice, limited local evidence is available regarding the knowledge of healthy diet among nursing students in Lahore. This gap is important because nursing students are expected to become reliable sources of health information, yet inadequate or incorrect nutritional understanding may affect both their personal health practices and their future patient education role. Assessing their current level of knowledge can help identify whether students possess adequate awareness of healthy dietary principles and where misconceptions remain. Such evidence can support improvements in nursing curricula, targeted nutrition education, and health promotion activities within nursing colleges.

Therefore, this study was conducted among students of Akhtar Saeed College of Nursing, Lahore, to assess their level of knowledge regarding healthy diet. The study focused on nursing students as the population of interest, assessed knowledge of healthy dietary principles as the primary outcome, and aimed to identify the proportion of students with good and poor knowledge based on a structured questionnaire. The objective of the study was to assess the level of knowledge regarding healthy diet among students of Akhtar Saeed College of Nursing, Lahore.

MATERIALS AND METHODS

A quantitative descriptive cross-sectional study was conducted to assess knowledge regarding healthy diet among students of Akhtar Saeed College of Nursing, Westwood Colony, Thokar Niaz Baig, Lahore. The cross-sectional design was selected because it allowed measurement of participants' knowledge at a single point in time and was appropriate for estimating the proportion of students with good and poor knowledge regarding healthy dietary practices. The study was completed after institutional approval, and data collection was carried out within the approved study period at the college premises.

The target population consisted of nursing students enrolled at Akhtar Saeed College of Nursing, Lahore. Students from the BSN and CNA programs who were present during the data collection period and willing to participate were included in the study. Students who were absent at the time of data collection or did not provide consent were excluded. Participants were selected through a non-probability convenience sampling technique because the study aimed to include available and eligible students from

the accessible student population within the institution. The accessible population was 275 students, and the final analyzed sample consisted of 161 participants (3).

The sample size was calculated using the finite population sample size formula, using a population size of 275, confidence level of 95%, standard normal value of 1.96, expected population proportion of 0.50, and margin of error of 0.05. The finite population correction was applied because the total accessible population was known. The calculated sample size was 161 participants, which was used as the final sample for analysis. This sample included students from different academic years to allow representation across levels of nursing education.

Data were collected using an adapted structured questionnaire designed to assess knowledge regarding healthy diet. The questionnaire consisted of two sections. The first section collected socio-demographic information, including age, gender, discipline, and year of education. The second section assessed knowledge regarding healthy diet through 17 statements covering major dietary and health-related concepts, including fruit and vegetable intake, sugar intake, dietary variety, fat intake, staple foods, animal products, fatty meat and animal fat, milk and dairy products, beans and bean products, physical activity, intense physical activity, body weight, salty foods and hypertension, refined and unrefined grains, lard and vegetable oils, starch content of vegetables and staple foods, and high-quality protein sources such as eggs and milk. Responses were recorded on a four-point Likert scale: strongly agree, somewhat agree, somewhat disagree, and strongly disagree.

The main study variable was knowledge regarding healthy diet. Knowledge was operationally defined as participants' correct understanding of healthy dietary practices and diet-related health concepts as measured by the 17-item questionnaire. Positively worded items were scored in the direction of agreement with correct dietary knowledge, whereas negatively worded items were reverse-coded so that higher scores consistently represented better knowledge. The total possible score ranged from 17 to 68. The raw score was converted into a percentage score by dividing the obtained score by the maximum possible score and multiplying by 100. Knowledge status was categorized using Bloom's cutoff criteria, with scores of 70% or above classified as good knowledge and scores below 70% classified as poor knowledge (8,9).

Before data collection, eligible students were informed about the purpose of the study, the voluntary nature of participation, the approximate time required to complete the questionnaire, and their right to withdraw at any stage without penalty. Written informed consent was obtained from all participants. Questionnaires were distributed to consenting students in the college setting and were completed independently. Completed questionnaires were checked for completeness before data entry. No identifying information was used in the analysis, and participant anonymity was maintained throughout the study.

To reduce information bias, the same structured questionnaire was used for all participants, and the response options were standardized. To reduce selection bias as far as possible within the convenience sampling approach, students from available academic years and both included disciplines were approached during the data collection period. Data were reviewed for completeness, consistency, and coding accuracy before analysis. Negatively worded items were coded appropriately before calculating total and percentage knowledge scores. Data entry was checked to minimize transcription errors and ensure reproducibility of the analysis.

Data were coded and entered into SPSS version 25 for statistical analysis. Descriptive statistics were used to summarize socio-demographic characteristics and knowledge responses. Frequencies and percentages were calculated for categorical variables, including age group, gender, discipline, year of education, item-level questionnaire responses, and knowledge categories. Mean and standard deviation were calculated for the overall knowledge score and knowledge percentage score. Minimum and maximum values were reported to describe the observed score range. Tables and figures were used to present demographic

characteristics, item-level knowledge responses, mean knowledge score, and overall knowledge classification.

Ethical principles were followed throughout the study. Approval was obtained from the relevant institutional authority before data collection. Written informed consent was taken from each participant. Participants were assured that their responses would remain confidential and would be used only for research purposes. Participation was voluntary, anonymity was maintained, and no personal identifiers were included in the final dataset. The study involved no invasive procedure and posed no physical risk to participants. All collected data were handled confidentially, stored securely, and analyzed only in aggregate form.

RESULTS

A total of 161 nursing students participated in the study. Most participants were aged 18–20 years (107/161, 66.5%), followed by 21–23 years (38/161, 23.6%) and 24–26 years (16/161, 9.9%). Females represented the majority of the sample (128/161, 79.5%), while males accounted for 33 participants (20.5%). Regarding academic discipline, 107 students (66.5%) were enrolled in the BSN program and 54 students (33.5%) were enrolled in the CNA program. The largest proportion of participants were first-year students (70/161, 43.5%), followed by second-year (47/161, 29.2%), third-year (26/161, 16.1%), and fourth-year students (18/161, 11.2%).

Table 1. Demographic Characteristics of Participants (N = 161)

Variable	Category	Frequency (n)	Percentage (%)
Age	18–20 years	107	66.5
	21–23 years	38	23.6
	24–26 years	16	9.9
Gender	Male	33	20.5
	Female	128	79.5
Discipline	BSN	107	66.5
	CNA	54	33.5
Year of education	1st year	70	43.5
	2nd year	47	29.2
	3rd year	26	16.1
	4th year	18	11.2

Item-level responses showed that students demonstrated strong knowledge in several core areas of healthy diet. The highest level of strong agreement was observed for the statement that choosing a diet with fresh fruits and vegetables is good for health (134/161, 83.2%). Similarly, 127 students (78.9%) strongly agreed that physical activity is good for health, 120 students (74.5%) strongly agreed that milk and dairy products are beneficial, and 119 students (73.9%) strongly agreed that eggs and milk are important sources of high-quality protein. For unhealthy dietary concepts, 103 students (64.0%) strongly disagreed that eating a lot of sugar is good for health, and 67 students (41.6%) strongly disagreed that a diet high in fat is good for health.

Several areas showed mixed or weaker knowledge. For the statement that staple foods such as rice and wheat products are not good for health, responses were distributed across categories, with 33 students (20.5%) strongly agreeing, 51 (31.7%) somewhat agreeing, 40 (24.8%) somewhat disagreeing, and 37 (23.0%) strongly disagreeing. Misconceptions were also observed regarding refined grains, as 55 students (34.2%) strongly agreed and 53 (32.9%) somewhat agreed that refined grains contain more vitamins and minerals than unrefined grains. Similarly, 37 students (23.0%) strongly agreed and 60 (37.3%) somewhat agreed that lard is healthier than vegetable oils.

The total knowledge score was calculated from the 17-item questionnaire, with a possible score range of 17 to 68. The mean knowledge score was 49.57 ± 4.26 , with observed scores ranging from 17 to 68. When converted into a percentage score, the mean knowledge percentage was 72.90 ± 6.26 , with observed values ranging from 25% to 100%. This indicates that the average knowledge score was above the 70% cutoff used to define good knowledge.

Table 2. Item-Level Knowledge Responses Regarding Healthy Diet Among Nursing Students (N = 161)

Sr. No.	Knowledge Statement	Strongly Agree n (%)	Somewhat Agree n (%)	Somewhat Disagree n (%)	Strongly Disagree n (%)
1	Choosing a diet with a lot of fresh fruits and vegetables is good for one's health	134 (83.2)	21 (13.0)	3 (1.9)	3 (1.9)
2	Eating a lot of sugar is good for one's health	12 (7.5)	20 (12.4)	26 (16.1)	103 (64.0)
3	Eating a variety of foods is good for one's health	66 (41.0)	71 (44.1)	16 (9.9)	8 (5.0)
4	Choosing a diet high in fat is good for one's health	11 (6.8)	26 (16.1)	57 (35.4)	67 (41.6)
5	Choosing a diet with a lot of staple foods is not good for one's health	33 (20.5)	51 (31.7)	40 (24.8)	37 (23.0)
6	Consuming a lot of animal products daily is good for one's health	68 (42.2)	62 (38.5)	19 (11.8)	12 (7.5)
7	Reducing fatty meat and animal fat in the diet is good for one's health	57 (35.4)	66 (41.0)	23 (14.3)	15 (9.3)
8	Consuming milk and dairy products is good for one's health	120 (74.5)	30 (18.6)	11 (6.8)	0 (0.0)
9	Consuming beans and bean products is good for one's health	93 (57.8)	55 (34.2)	8 (5.0)	5 (3.1)
10	Physical activities are good for one's health	127 (78.9)	15 (9.3)	12 (7.5)	7 (4.3)
11	Sweaty sports or other intense physical activities are not good for one's health	40 (24.8)	27 (16.8)	41 (25.5)	53 (32.9)
12	The heavier one's body is, the healthier he or she is	33 (20.5)	31 (19.3)	35 (21.7)	62 (38.5)
13	Eating salty foods can cause hypertension	82 (50.9)	36 (22.4)	21 (13.0)	22 (13.7)
14	Refined grains contain more vitamins and minerals than unrefined grains	55 (34.2)	53 (32.9)	31 (19.3)	22 (13.7)
15	Lard is healthier than vegetable oils	37 (23.0)	60 (37.3)	34 (21.1)	30 (18.6)
16	Vegetables contain more starch than staple foods	51 (31.7)	58 (36.0)	31 (19.3)	21 (13.0)
17	Eggs and milk are important sources of high-quality protein	119 (73.9)	21 (13.0)	17 (10.6)	4 (2.5)

Table 3. Mean Knowledge Score Regarding Healthy Diet Among Nursing Students (N = 161)

Variable	N	Mean ± SD	Minimum	Maximum
Knowledge score	161	49.57 ± 4.26	17	68
Knowledge percentage score	161	72.90 ± 6.26	25	100

Using the predefined Bloom cutoff, participants scoring 70% or above were categorized as having good knowledge, while those scoring below 70% were categorized as having poor knowledge. Overall, 110 students (68.3%) had good knowledge regarding healthy diet, whereas 51 students (31.7%) had poor knowledge.

Table 4. Overall Knowledge Level Regarding Healthy Diet Among Nursing Students (N = 161)

Knowledge Level	Cutoff Criteria	Frequency (n)	Percentage (%)
Good knowledge	≥70%	110	68.3
Poor knowledge	<70%	51	31.7
Total		161	100.0

Overall, the results show that most nursing students had good knowledge regarding healthy diet, with nearly seven out of ten participants meeting the good-knowledge cutoff. The strongest knowledge areas were related to fruits and vegetables, dairy products, legumes, physical activity, sugar intake, and high-quality protein sources. However, responses also showed notable misconceptions regarding staple foods, refined versus unrefined grains, lard compared with vegetable oils, and the starch content of vegetables compared with staple foods.

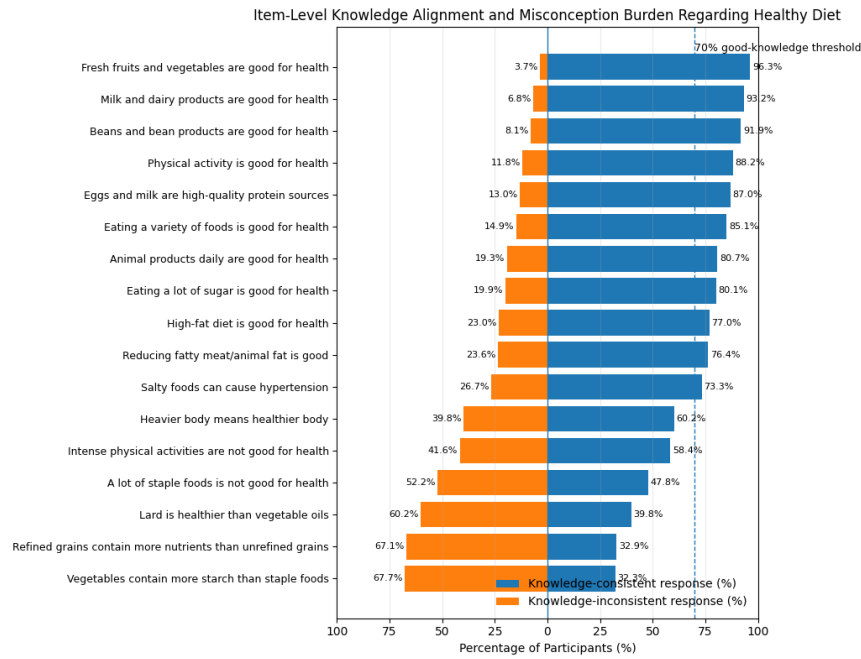


Figure 1. Item-Level Knowledge Alignment and Misconception Burden Regarding Healthy Diet

The figure demonstrates substantial variation in item-level knowledge alignment across the 17 healthy-diet statements. The strongest knowledge-consistent responses were observed for fresh fruit and vegetable intake (96.3%), milk and dairy consumption (93.2%), beans and bean products (91.9%), physical activity (88.2%), eggs and milk as high-quality protein sources (87.0%), and dietary variety (85.1%). Moderate alignment was observed for sugar intake (80.1%), high-fat diet (77.0%), reduction of fatty meat and animal fat (76.4%), and salty foods causing hypertension (73.3%). The greatest misconception burden appeared in items related to vegetables versus staple foods (67.7% knowledge-inconsistent responses), refined versus unrefined grains (67.1%), lard compared with vegetable oils (60.2%), and staple-food perceptions (52.2%), indicating that while overall knowledge was favorable, carbohydrate quality, fat-source interpretation, and staple-food understanding were the weakest knowledge domains.

DISCUSSION

The present study assessed knowledge regarding healthy diet among nursing students and found that the overall level of knowledge was generally favorable. The mean knowledge percentage score was 72.90 ± 6.26 , and 110 out of 161 students (68.3%) were categorized as having good knowledge, while 51 students (31.7%) had poor knowledge. This finding indicates that most participants possessed an acceptable understanding of healthy dietary principles, which is encouraging because nursing students are future healthcare professionals who are expected to provide basic dietary guidance, promote preventive health behaviors, and support patients in adopting healthier lifestyles. The predominance of good knowledge may be related to students' exposure to health-science education, clinical learning environments, and general awareness of nutrition as part of disease prevention and health promotion.

The strongest areas of knowledge were related to widely recognized components of a healthy lifestyle. A large majority of students correctly recognized that diets rich in fresh fruits and vegetables are beneficial for health, with 134 participants (83.2%) strongly agreeing and an overall knowledge-consistent response of 96.3%. This finding is consistent with previous evidence showing that health-related students often demonstrate strong awareness of the protective role of fruits and vegetables in maintaining health and reducing disease risk (10). Similarly, knowledge regarding milk and dairy products was high, as 120 students (74.5%) strongly agreed that these foods are good for health, while 119 students (73.9%) strongly agreed that eggs and milk are important sources of high-quality protein.

These findings suggest that students had a sound understanding of common protein- and calcium-rich food sources, which is relevant for both personal nutrition and future patient education.

The findings also showed strong awareness regarding physical activity. A total of 127 students (78.9%) strongly agreed that physical activities are good for health, and the knowledge-consistent response for this item was 88.2%. This reflects an appropriate understanding of the role of physical activity as part of a healthy lifestyle. However, responses to the negatively worded statement that sweaty sports or intense physical activities are not good for health were more variable, with 40 students (24.8%) strongly agreeing and 27 students (16.8%) somewhat agreeing with the incorrect statement. This indicates that although students generally understood the value of physical activity, some uncertainty remained regarding the health benefits of vigorous exercise. Similar patterns have been described in student populations where general health messages are understood, but more specific concepts related to intensity, duration, and safe practice of exercise remain less clear (11,12).

Knowledge regarding unhealthy dietary components was mixed. Most students rejected the idea that eating a lot of sugar is good for health, with 103 participants (64.0%) strongly disagreeing and an overall knowledge-consistent response of 80.1%. Likewise, 67 students (41.6%) strongly disagreed that choosing a diet high in fat is good for health, and the overall knowledge-consistent response for this item was 77.0%. These findings suggest that students were generally aware of the harmful effects of excessive sugar and high-fat intake. However, knowledge related to types and sources of fat was weaker. For example, 37 students (23.0%) strongly agreed and 60 students (37.3%) somewhat agreed that lard is healthier than vegetable oils, producing a knowledge-inconsistent response of 60.2%. This misconception is important because understanding the difference between animal fats and healthier unsaturated fat sources is central to cardiovascular disease prevention and dietary counseling (13,14).

A major area of weakness was observed in knowledge related to grains, staple foods, and carbohydrate quality. More than half of students gave knowledge-inconsistent responses to the statement that a diet with a lot of staple foods such as rice and wheat products is not good for health. In addition, 55 students (34.2%) strongly agreed and 53 students (32.9%) somewhat agreed that refined grains contain more vitamins and minerals than unrefined grains, giving a knowledge-inconsistent response of 67.1%. This finding suggests that many students may not clearly understand the nutritional difference between refined and unrefined grains. The misconception is clinically relevant because whole grains generally provide higher fiber and micronutrient value than refined grains, and this distinction is important when advising patients about balanced dietary choices. Similar concerns have been reported in previous studies where students showed adequate general nutrition awareness but weaker understanding of food quality, food processing, and nutrient density (15).

Another important misconception was identified in relation to vegetables and staple foods. The statement that vegetables contain more starch than staple foods produced the highest knowledge-inconsistent response, with 51 students (31.7%) strongly agreeing and 58 students (36.0%) somewhat agreeing. This indicates a substantial gap in basic food-group knowledge. Since staple foods such as rice and wheat products are major carbohydrate sources in the local diet, misunderstanding their starch contribution compared with vegetables may affect students' ability to provide accurate dietary advice. This result highlights that nutrition education should not only emphasize broad messages such as "eat healthy foods" but should also strengthen practical understanding of food groups, macronutrient sources, and culturally common dietary patterns.

The study also found moderate knowledge regarding salt intake and hypertension. A total of 82 participants (50.9%) strongly agreed that eating salty foods can cause hypertension, while 36 (22.4%) somewhat agreed, giving a knowledge-consistent response of 73.3%. Although this shows that most students recognized the link between salt intake and hypertension, more than one-quarter of participants did not respond consistently with this knowledge. Considering the high public health burden of hypertension and cardiovascular disease, this gap is important. Nursing students should have clear

knowledge of salt reduction because they may later counsel patients on lifestyle modification, blood pressure control, and prevention of non-communicable diseases (16).

The overall findings suggest that students had stronger knowledge of commonly taught and widely communicated dietary concepts, such as fruits, vegetables, dairy intake, protein sources, physical activity, sugar reduction, and high-fat diet avoidance. In contrast, weaker knowledge was seen in more specific or conceptually complex areas, including refined versus unrefined grains, animal fats versus vegetable oils, staple foods, starch sources, and interpretation of body weight as a marker of health. This pattern indicates that general nutrition awareness may be present, but deeper applied nutrition knowledge remains insufficient. Similar findings have been reported in health-profession student populations, where participants may correctly identify broad healthy behaviors but still hold misconceptions about nutrient quality, food composition, and practical dietary decision-making (17).

The findings have important implications for nursing education. Since nurses frequently participate in health education and patient counseling, nutrition content within nursing curricula should move beyond theoretical awareness and include practical, culturally relevant dietary education. Teaching strategies may include food-group classification, interpretation of food labels, meal-planning exercises, discussion of local dietary practices, and case-based counseling scenarios. Particular attention should be given to correcting misconceptions about refined grains, staple foods, fat sources, salt intake, and body weight. Strengthening these areas may improve students' personal dietary choices and enhance their future ability to provide accurate health education to patients and communities.

The study has several strengths. It included students from multiple academic years and both BSN and CNA disciplines, allowing assessment across different levels of nursing education. The sample size of 161 participants provided useful descriptive evidence regarding nutrition knowledge in this institutional setting. The use of a structured questionnaire allowed standardized assessment of multiple knowledge domains, including both positive and negatively worded dietary statements. The item-level analysis was particularly useful because it identified not only the overall knowledge status but also specific misconception areas that can guide targeted educational interventions.

The study also has limitations. The cross-sectional design measured knowledge at one point in time and therefore cannot determine changes in knowledge across academic progression or after educational exposure. The use of convenience sampling may limit generalizability beyond the study setting. Because data were self-reported, responses may have been influenced by social desirability or students' interpretation of the questionnaire statements. The study assessed knowledge only and did not evaluate actual dietary practices, food intake, body mass index, socioeconomic background, prior nutrition training, or clinical exposure, all of which may influence students' nutrition-related understanding. In addition, the available results were descriptive and did not include subgroup comparisons by gender, discipline, or year of education, which could have provided further insight into factors associated with good or poor knowledge.

Overall, the study shows that most nursing students had good knowledge regarding healthy diet, but the presence of notable misconceptions indicates a need for more focused and practical nutrition education. The strongest knowledge areas were related to fruits and vegetables, dairy products, beans, physical activity, sugar intake, and protein sources, while the weakest areas involved refined grains, lard and vegetable oils, staple foods, starch content, and body-weight interpretation. Addressing these gaps through structured nursing education may strengthen students' nutritional competence and improve their readiness to provide accurate dietary counseling in future clinical and community health roles.

CONCLUSION

The study concluded that most nursing students at Akhtar Saeed College of Nursing, Lahore, demonstrated good knowledge regarding healthy diet, as reflected by a mean knowledge percentage

score of 72.90 ± 6.26 and 68.3% of participants achieving the good-knowledge category. Students showed strong understanding of the health benefits of fruits and vegetables, milk and dairy products, beans and bean products, physical activity, avoidance of excessive sugar, and recognition of eggs and milk as high-quality protein sources. However, important misconceptions were identified regarding refined versus unrefined grains, lard compared with vegetable oils, staple foods, starch content of vegetables, intense physical activity, and body weight as an indicator of health. These findings indicate that although general nutrition awareness was satisfactory, deeper applied knowledge of food composition and healthy dietary choices requires strengthening. Incorporating more focused, practical, and culturally relevant nutrition education into nursing training may help correct these gaps, improve students' personal health awareness, and enhance their future role in providing accurate dietary counseling to patients and communities.

REFERENCES

1. World Health Organization. Global strategy on diet, physical activity and health. Geneva: World Health Organization; 2004.
2. Hassan MR, Ghazi HF, Umar NS, Masri M, Azmin M, Omar S. Knowledge, attitude and practice of healthy eating and associated factors among university students in Selangor, Malaysia. *Pak J Nutr.* 2015;14(12):892.
3. Sakamaki R, Toyama K, Amamoto R, Liu CJ, Shinfuku N. Nutritional knowledge, food habits and health attitude of Chinese university students: a cross-sectional study. *Nutr J.* 2005;4:15.
4. Abu-Baker NN, Eyadat AM, Khamaiseh AM. The impact of nutrition education on knowledge, attitude, and practice regarding iron deficiency anemia among female adolescent students in Jordan. *Heliyon.* 2021;7(2):e06348.
5. Hammouh F, Abdullah M, Shalabi D, Hababeh M, Abu-Shaheen A, Al-Dmour H. Nutrition knowledge, attitudes, and practices among Jordanian elderly: a cross-sectional study. *Nutrients.* 2023;15(9):2220.
6. Biswas B, Chowdhury AS, Rahman MM, Hossain MA. Knowledge and attitude about COVID-19 and importance of diet: a cross-sectional study among Bangladeshi people. *Bangladesh J Food Nutr.* 2024;1(1):4-12.
7. Kunadu APH, Ofosu DB, Aboagye E, Tano-Debrah K. Food safety knowledge, attitudes and self-reported practices of food handlers in institutional foodservice in Accra, Ghana. *Food Control.* 2016;69:324-330.
8. Buccheri C, Casuccio A, Giammanco S, Giammanco M, La Guardia M, Mammina C. Food safety in hospital: knowledge, attitudes and practices of nursing staff of two hospitals in Sicily, Italy. *BMC Health Serv Res.* 2007;7:1-11.
9. Hyska J, Mersini E. Assessment of knowledge, attitudes and practices about public health nutrition among students of the University of Medicine in Tirana, Albania. *South East Eur J Public Health.* 2023.
10. Bashir R, Rizvi K. Assessment of levels of oral hygiene awareness, knowledge, attitude and practice among the students of a government school in Karachi. *Br J Med Med Res.* 2016;15(2):1-11.
11. Crowley J, Ball L, Hiddink GJ. Nutrition in medical education: a systematic review. *Lancet Planet Health.* 2019;3(9):e379-e389.
12. Hamulka J, Wadolowska L, Hoffmann M, Kowalkowska J, Gutkowska K. Effect of an education program on nutrition knowledge, attitudes toward nutrition, diet quality, lifestyle, and body

- composition in Polish teenagers: the ABC of healthy eating project: design, protocol, and methodology. *Nutrients*. 2018;10(10):1439.
13. Vivas A, Gelaye B, Aboset N, Kumie A, Berhane Y, Williams MA. Knowledge, attitudes, and practices of hygiene among school children in Angolela, Ethiopia. *J Prev Med Hyg*. 2010;51(2):73-79.
 14. Niringiyimaana A. To assess dietary knowledge, attitudes and practices among diabetic patients receiving care at Kampala International University Teaching Hospital. Kampala: Kampala International University, School of Health Sciences; 2016.
 15. Sabouhi F, Babae S, Naji H, Zadeh AH. Knowledge, awareness, attitudes and practice about hypertension in hypertensive patients referring to public health care centers in Khor & Biabanak, 2009. *Iran J Nurs Midwifery Res*. 2010;16(1):34-40.
 16. Shaaban S, Nassar M, Abd Elhamid A, El-Gendy J. Nutritional knowledge and attitude of adolescent school girls living in Cairo. *Res J Med Med Sci*. 2009;4(2):421-427.
 17. Yu Y, Han X, Yang M, Zhang L. Source: China Health and Nutrition Survey and Clement and Bonnefond questionnaire. 2020.