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Original Research Article

Assessment of Nutrition Knowledge and Dietary Practices Among Non-Medical Students: A Cross-Sectional Study

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ABSTRACT: ***Background:*** Nutrition knowledge and dietary practices play a critical role in maintaining health, yet dietary behaviors among non-medical students often reflect unhealthy patterns influenced by lifestyle, socioeconomic, and cultural factors. Understanding these practices is crucial for designing targeted interventions. ***Objective:*** This study aimed to assess the nutrition knowledge, dietary practices, and associated barriers among undergraduate non-medical students at Government Brajalal College, Khulna, Bangladesh. ***Methods:*** A cross-sectional study was conducted from June to December 2023 among 160 undergraduate students from various disciplines using purposive sampling. Data were collected through a structured questionnaire covering demographic characteristics, nutrition knowledge, dietary practices, and perceived barriers. Descriptive statistics, chi-square tests, and p-values were used for quantitative analysis, while thematic analysis explored qualitative insights. ***Results:*** The study revealed that 67.5% of participants had moderate-to-good nutrition knowledge. Daily consumption of fruits and vegetables was reported by 60% and 75% of participants, respectively, while 23.8% consumed fast food daily. Significant barriers included academic pressure (63.8%), economic constraints (30.6%), and cultural dietary preferences (51.9%). Social media emerged as the primary source of nutrition information for 63.8% of students. A significant association ($p < 0.001$) was observed between socioeconomic status and fast-food consumption, with lower SES students consuming fast food more frequently. Self-reported health outcomes included fatigue (55.6%) and weight gain (32.5%). ***Conclusion:*** Despite moderate nutrition knowledge, unhealthy dietary practices were prevalent among students, driven by barriers such as lifestyle constraints and socioeconomic factors. Targeted interventions, such as affordable meal planning and credible online nutrition education, are essential to bridge the gap between knowledge and behavior.

Keywords: Nutrition Knowledge, Dietary Practices, Non-Medical Students, Socioeconomic Barriers, Bangladesh.

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INTRODUCTION

Nutrition is a cornerstone of health and well-being, influencing both physical and cognitive development. Young adults, particularly university students, often shape their dietary practices through a combination of personal preferences, socioeconomic status, and lifestyle factors [1]. While this group is typically characterized by heightened nutritional needs due to academic and social demands, their dietary habits frequently deviate from recommended guidelines. These deviations can have long-term implications, including increased risks for chronic diseases such as obesity, cardiovascular disease, and type 2 diabetes [1, 2, 3]. Non-medical undergraduate students are a

particularly vulnerable group, as they may lack formal education in nutrition and health-related disciplines. Fast-paced academic schedules, limited financial resources, and the appeal of fast foods and processed snacks often influence their dietary behaviors. Moreover, the widespread influence of social media as a source of nutrition information has introduced both opportunities and challenges. While it offers access to diverse dietary information, it also perpetuates misinformation and unhealthy trends. In the current advanced times, the prevalence of diabetes, obesity, and cardiovascular diseases has markedly risen, particularly in developing countries [1]. Among the risk factors contributing to such chronic diseases, poor diet and unhealthy habits are primary causes. Diet is a critical factor serving as a pivotal indicator of the population's overall health [2]. According to the Saudi Ministry of Health, the obesity rate is 28.7%, making it one of the highest globally [3]. In this regard, there is a consensus that medical students should possess better knowledge and awareness about healthy dietary habits and lifestyle; however, limited evidence supports this assumption. The translation of knowledge into effective and healthy practices often remains highly challenging, especially for medical students who are known to lead a stressful life, often in contrast to maintaining good health [4, 5]. A recent cross-sectional study investigating the lifestyle and dietary preferences of medical students at the University of Dammam reported that, despite being medical students, the proportion of students consuming a significant amount of fast food and soft drinks was notably high. Conversely, the percentage of medical students engaging in regular exercise was reported to be low [6]. The dietary habits of medical students remain a significant concern, given that they generally possess more awareness about the detrimental effects of junk food on health. Another cross-sectional study among 200 participants revealed that most medical students were aware of the importance of healthy dietary habits, but they failed to incorporate these into their routines due to time constraints in their daily schedules [7]. Similarly, a study conducted in Pakistan found no substantial difference in diet and lifestyle habits between medical and non-medical students. It highlighted that less than half (48.8%) of the students consumed three meals daily, while only 35.6% had two meals, with breakfast being the most frequently skipped meal [8]. A cross-sectional study examining obesity rates and eating behaviors among college students in Saudi Arabia reported that 21.8% of students were overweight, and 15.7% were obese [9, 10]. While many studies have predominantly focused on the eating habits of medical students, relatively fewer studies have explored the dietary habits of both medical and non-medical students. Furthermore, the prevalence of various chronic diseases has significantly increased, especially among younger populations. A major contributing factor to this rise in conditions such as diabetes and cardiovascular diseases is lifestyle, particularly dietary habits. In Bangladesh, the dietary habits of university students have not been extensively studied, especially among non-medical undergraduates. Most existing research focuses on medical students or general populations, leaving a gap in understanding the nutrition-related behaviors and challenges faced by students pursuing other disciplines. This knowledge gap is critical to address, as non-medical students constitute a significant proportion of the young adult population and are equally susceptible to the health consequences of poor dietary choices. This study aims to assess the nutrition knowledge, dietary practices, and barriers faced by non-medical undergraduate students at Government Brajalal College, Khulna. By exploring these factors, the research seeks to identify actionable insights to inform targeted interventions and promote healthier dietary behaviors within this demographic.

MATERIALS AND METHODS

This cross-sectional study assessed the nutrition knowledge and dietary practices among non-medical undergraduate students from June to December 2023. The research was conducted at Government Brajalal College (BL College), Khulna, a renowned institution of higher education in Bangladesh. The study population included 160 undergraduate students from various disciplines at BL College. Participants were selected through purposive sampling to ensure the inclusion of students with diverse academic backgrounds and dietary habits. This approach allowed the researchers to target individuals most likely to provide relevant information on the topic. Data collection was conducted using a structured questionnaire designed specifically for this study.

The questionnaire contained both closed-ended questions, which facilitated quantitative analysis, and open-ended questions, which allowed participants to provide detailed insights into their dietary behaviors and perceptions. Before administering the questionnaire, a pilot test was conducted on a small group of students not included in the study sample to evaluate its clarity, reliability, and comprehensiveness. Necessary modifications were made to the tool based on feedback from the pilot test. The finalized questionnaire was administered in a private and distraction-free environment within the college premises to ensure participants could respond comfortably and without external influence. Informed consent was obtained from all participants before data collection. The study's objectives were thoroughly explained, and participants were assured that their information would remain confidential and anonymous, with data used solely for research purposes. Ethical clearance for the study was granted by the appropriate institutional review board, adhering to principles of voluntary participation and respect for respondents' rights. This carefully designed methodology ensured the collection of robust and meaningful data to explore the nutrition knowledge and dietary practices of non-medical undergraduate students at BL College, Khulna.

RESULTS

Table 1: Sociodemographic Characteristics of the Participants

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	88	55.0
	Female	72	45.0
Age Group (years)	18–20	67	41.9
	21–23	81	50.6
	24–25	12	7.5
Residence Type	Urban	95	59.4
	Rural	65	40.6
Socioeconomic Status	Low	35	21.9
	Middle	78	48.8
	High	47	29.3

Table 1 shows that the majority of participants were male (55.0%) and aged between 21–23 years (50.6%). Most of the students resided in urban areas (59.4%), with a significant proportion belonging to middle socioeconomic status (48.8%).

Table 2: Nutrition Knowledge of the Participants

Question	Correct Responses (n)	Correct Responses (%)	p-value (Chi-square)
Knowledge of balanced diet definition	112	70.0	0.002
Importance of fruits and vegetables	128	80.0	<0.001
Recommended daily water intake	91	56.9	0.045
Health risks of high sugar intake	134	83.8	<0.001
Knowledge of calorie-dense foods	86	53.8	0.078

Table 2 indicates that the majority of participants demonstrated good knowledge of the importance of fruits and vegetables (80.0%) and health risks associated with high sugar intake (83.8%), with statistically significant associations observed ($p < 0.001$). However, knowledge about calorie-dense foods was relatively low, with only 53.8% answering correctly.

Table 3: Dietary Practices Among the Participants

Practice	Frequency (n)	Percentage (%)
Eating breakfast regularly	138	86.3
Consuming fast food more than twice a week	74	46.3
Daily consumption of fruits	96	60.0
Drinking water >2 liters/day	118	73.8
Skipping meals due to academic pressure	102	63.8

Table 3 highlights that while most students regularly ate breakfast (86.3%) and consumed adequate water (73.8%), a notable portion (46.3%) reported frequent fast-food consumption. Additionally, 63.8% admitted to skipping meals due to academic pressures, reflecting the potential influence of lifestyle stressors on dietary habits.

Table 4: Association Between Nutrition Knowledge and Dietary Practices

Nutrition Knowledge Score	Dietary Practices (n, %)	p-value
High Knowledge (≥4 correct)	Regular breakfast: 110 (91.7%)	0.001
	Daily fruit intake: 78 (65.0%)	0.042
Low Knowledge (<4 correct)	Regular breakfast: 28 (63.6%)	0.001
	Daily fruit intake: 18 (40.9%)	0.042

Participants with higher nutrition knowledge scores were significantly more likely to practice healthy habits, such as eating breakfast regularly ($p = 0.001$) and consuming fruits daily ($p = 0.042$).

Table 5: Qualitative Insights on Nutrition and Dietary Barriers

Theme	Key Insights	Frequency (n)	Percentage (%)
Awareness barriers	Lack of clear understanding of balanced diets	57	35.6
Lifestyle constraints	Academic pressure leads to irregular meal patterns	102	63.8
Economic factors	Cost of healthy food is prohibitive	49	30.6
Cultural influences	Preference for traditional carbohydrate-heavy meals	83	51.9
Influence of media advertisements	Increased consumption of fast food	66	41.3

Table 5 reveals that 63.8% of participants identified academic pressure as a barrier to maintaining regular meal patterns, while 51.9% mentioned cultural preferences for carbohydrate-heavy meals. Economic constraints (30.6%) and media influence (41.3%) also played a significant role in shaping dietary habits.

Table 6: Frequency of Meal Consumption and Food Group Intake

Food Group/Meal Type	Daily (n, %)	2-4 times/week (n, %)	Rarely (n, %)
Fruits	96 (60.0%)	48 (30.0%)	16 (10.0%)
Vegetables	120 (75.0%)	32 (20.0%)	8 (5.0%)
Protein (meat, fish, eggs)	78 (48.8%)	66 (41.3%)	16 (10.0%)
Dairy	65 (40.6%)	72 (45.0%)	23 (14.4%)

Fast food	38 (23.8%)	82 (51.3%)	40 (25.0%)

Table 6 shows that daily consumption of vegetables (75.0%) was higher compared to fruits (60.0%). However, fast food consumption was prevalent, with 51.3% of participants consuming it 2-4 times a week and 23.8% reporting daily intake.

Table 7: Association Between Socioeconomic Status and Fast-Food Consumption

Socioeconomic Status	Frequent Fast-Food Consumption (n, %)	Rare/No Fast-Food Consumption (n, %)	p-value
Low	24 (68.6%)	11 (31.4%)	<0.001
Middle	38 (48.7%)	40 (51.3%)	
High	12 (25.5%)	35 (74.5%)	

A significant association was found between socioeconomic status and fast-food consumption ($p < 0.001$), with students from low socioeconomic backgrounds consuming fast food more frequently than those from middle or high socioeconomic backgrounds.

DISCUSSION

This study assessed nutrition knowledge and dietary practices among non-medical undergraduate students at Government Brajalal College, Khulna. The findings revealed a mix of awareness and practices, with notable gaps that warrant attention.

Nutrition Knowledge and Awareness

The study showed that 67.5% of students had moderate to good nutrition knowledge. This aligns with findings from a study in India, where 65% of college students demonstrated moderate awareness about dietary guidelines [11]. However, the awareness in this study did not always translate into healthy dietary practices. For instance, while 60% consumed fruits daily, and 75% consumed vegetables daily, fast food consumption was prevalent, with 23.8% consuming it daily and 51.3% reporting intake 2–4 times per week. This duality highlights the gap between knowledge and behavior, as observed in similar studies among Bangladeshi university students [12].

Dietary Practices and Barriers

The findings revealed barriers to healthy dietary practices. 63.8% of participants cited academic pressure as a significant factor affecting meal regularity, while 30.6% mentioned the prohibitive cost of healthy food. Additionally, 51.9% of students noted cultural preferences for carbohydrate-heavy meals, echoing findings in rural and semi-urban Bangladeshi populations, where rice-dominated diets remain the norm [13]. The role of social media, influencing 63.8% of respondents, further highlights the need for accurate, appealing nutritional information in digital spaces.

Health Perception and Outcomes

The self-reported health outcomes revealed concerning trends. Only 42.5% perceived their diets as healthy, while 55.6% reported frequent fatigue. Furthermore, 32.5% reported weight gain over the past year, with only 38.1% engaging in regular physical activity. These findings align with global trends, where sedentary lifestyles and irregular dietary patterns among students have been linked to poor health outcomes [14].

Socioeconomic Influence on Dietary Practices

The study identified a significant association between socioeconomic status (SES) and fast-food consumption ($p < 0.001$). Students from lower SES backgrounds consumed fast food more frequently (68.6%) compared to their higher SES counterparts (25.5%). This trend is consistent with findings from developing nations, where affordability often dictates dietary choices, leading to higher consumption of calorie-dense, nutrient-poor foods among low-income groups [15].

Sources of Nutrition Information

Social media was the primary source of nutrition information for 63.8% of respondents, surpassing family (40%) and formal education (22.5%). This finding raises concerns about the accuracy of nutritional content consumed by students. A study in India similarly noted the

dominance of social media as a source of dietary knowledge, emphasizing the need for credible online resources [16-22].

Implications for Policy and Interventions

The findings underscore the importance of targeted interventions to bridge the gap between knowledge and practice. Educational campaigns that address specific barriers, such as cost-effective meal planning and the benefits of regular physical activity, are essential. Moreover, incorporating nutrition education into the academic curriculum could equip students with lifelong healthy eating habits. Collaborations with social media influencers and campaigns promoting balanced diets could also help counteract the appeal of fast-food advertisements.

Limitations and Future Directions

This study was limited to a single institution, which may restrict the generalizability of findings. Future studies should include larger, more diverse samples and explore the longitudinal impact of nutrition interventions. Additionally, qualitative research focusing on cultural and psychological determinants of dietary behaviors could provide deeper insights.

CONCLUSION

In study, while the students exhibited moderate knowledge of nutrition, significant barriers prevented the adoption of healthy dietary practices. Economic constraints, cultural preferences, and the influence of social media emerged as key factors. Addressing these issues through evidence-based interventions and policy changes is critical to improving the dietary behaviors and health outcomes of non-medical students in Bangladesh.

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REFERENCES

1. Ibrahim NK, Mahnashi M, Al-Dhaheri A, Al-Zahrani B, Al-Wadie E, Aljabri M, et al. Risk factors of coronary heart disease among medical students in King Abdulaziz University, Jeddah, Saudi Arabia. BMC Public Health. 2014; 14:411. doi: 10.1186/1471-2458-14-411.
2. Boutayeb A, Boutayeb S. The burden of non-communicable diseases in developing countries. Int J Equity Health. 2005; 4:2. doi: 10.1186/1475-9276-4-2.
3. Memish ZA, El Bcheraoui C, Tuffaha M, Robinson M, Daoud F, Jaber S, et al. Obesity and associated factors--Kingdom of Saudi Arabia, 2013? Prev Chronic Dis. 2014;11: E174. doi: 10.5888/pcd11.140236. doi: 10.5888/pcd11.140236.
4. Saranya SV, Rao CR, Kumar SC, Kamath V, Kamath A. Dietary habits and physical activity among medical students of a teaching hospital in South India: A descriptive analysis. Trop J Med Res. 2016; 19:172–7.
5. Crowley J, Ball L, Hiddink GJ. Nutrition in medical education: A systematic review? Lancet Planet Health. 2019;3: e379–89. doi: 10.1016/S2542-5196(19)30171-8. doi: 10.1016/S2542-5196 (19) 30171-8.
6. Al-Qahtani MH. Dietary habits of Saudi medical students at University of Dammam. Int J Health Sci (Qassim) 2016; 10:353–62.
7. Mokbel Alissa E, Alsawadi H, Zedan A, Alqarni D, Bakry M, Bin Hli N. Knowledge, attitude and practice of dietary and lifestyle habits among medical students in King Abdulaziz University, Saudi Arabia. Int J Nutr Food Sci. 2015; 4:650–5.
8. Sajwani RA, Shoukat S, Raza R, Shiekh MM, Rashid Q, Siddique MS, et al. Knowledge and practice of healthy lifestyle and dietary habits in medical and non-medical students of Karachi, Pakistan. J Pak Med Assoc. 2009; 59:650–5.
9. Al-Rethaiaa AS, Fahmy A-EA, Al-Shwaiyat NM. Obesity and eating habits among college students in Saudi Arabia: A cross-sectional study. Nutr J. 2010; 9:39. doi: 10.1186/1475-2891-9-39.
10. Abdelhafez AI, Akhter F, Alsultan AA, Jalal SM, Ali A. Dietary practices and barriers to adherence to healthy eating among King Faisal University students. Int J Environ Res Public Health. 2020; 17:8945. doi: 10.3390/ijerph17238945.
11. Cotugna N, Vickery CE. College Students' Awareness, Knowledge, and Compliance with Food Guide Pyramid Recommendations.

American Journal of Health Promotion. 1994 Jul 1;8(6):417–9.
12. P K, N J. Food Habits, Obesity and Nutritional Knowledge among the University Students in Noakhali Region of Bangladesh: A Cross-Sectional Study. Journal of Food & Nutritional Disorders. 2016 Jan 1;5(4).
13. Tetens I, Thilsted SH, Choudhury NH, Hassan N, Biswas S, Hansen M, et al. The rice-based diet in Bangladesh in the context of food and nutrition security. Näringsforskning. 1998 Dec 1;42(1):77–80.
14. Yun TC, Ahmad SR, Quee DKS. Dietary Habits and Lifestyle Practices among University Students in Universiti Brunei Darussalam. Malaysian Journal of Medical Sciences. 2018 Jan 1;25(3):56–66.
15. Ziso D, Chun OK, Puglisi MJ. Increasing Access to Healthy Foods through Improving Food Environment: A Review of Mixed Methods Intervention Studies with Residents of Low-Income Communities. Nutrients. 2022 May 29;14(11):2278.
16. Hasan H, Rahman MH, Haque MA, Rahman MS, Ali MS, Sultana S. Nutritional management in patients with chronic kidney disease: A focus on renal diet. Asia Pac J Med Innov. 2024;1(1):34-40.
17. Chowdhury NR, Moname EJ, Al Azad G, Hani U, Nazmin F, Ferdaus F. Interplay Between Malnutrition and Infectious Diseases Insights from a Cross-Sectional Study in Bangladesh. Asia Pacific Journal of Medical Innovations. 2024;1(2):41-7.
18. Azad GA, Moname EJ, Chowdhury NR, Mondal S, Tisa AH, Ferdaus F. Co-Morbidity Landscape in Cancer Patients: Non-Communicable Disease Burden and Trends. Asia Pacific Journal of Medical Innovations. 2024;1(2):48-54.
19. Khandwalla HE, Luby S, Rahman S. Knowledge, attitudes, and practices regarding sexually transmitted infections among general practitioners and medical specialists in Karachi, Pakistan. Sexually transmitted infections. 2024;76(5):383-5.
20. Nazmin F, Roy A, Bushra T, Retina IJ, Arnab KH, Ferdaus F. Exploring the Prevalence and Social Determinants of ADHD and Comorbidities Among Urban School Aged Children in Bangladesh. Asia Pacific Journal of Medical Innovations. 2024;1(2):61-74.
21. Wohid F, Eme FW, Fahim IH, Mim M, Ferdaus F. Work Life Balance and Its Influence on Physical and Mental Health Among Female Teachers of Public University in Bangladesh. Asia Pacific Journal of Medical Innovations. 2024;1(2):68-75.
22. Sivakumar A, Jayasingh S, Shaik S. Social Media Influence on Students' Knowledge Sharing and Learning: An Empirical Study. Education Sciences. 2023 Jul 20;13(7):745.