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Fast Food Consumption Habits Knowledge Attitudes and Their Association with Body Mass Index Among Health Sciences Students in Oman

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Abstract

Background

Fast-food consumption has become increasingly prevalent among university students, contributing to unhealthy dietary patterns and rising obesity rates. Understanding students' fast-food consumption habits, knowledge, and attitudes is essential for designing effective health promotion strategies.

Objective

To evaluate fast-food consumption habits, knowledge, and attitudes, and to examine their association with Body Mass Index (BMI) among undergraduate students at the College of Health Sciences, University of Buraimi, Oman.

Methods

A descriptive cross-sectional study was conducted among 222 undergraduate students selected using convenience sampling. Data were collected via an online questionnaire assessing demographics, fast-food consumption patterns, knowledge (11 items), attitudes (9 items), and self-reported anthropometric measures. Data were analyzed using descriptive statistics, t-tests, ANOVA, and multivariable logistic regression.

Results

Most participants were female (88.7%), single (93.2%), middle-income (60.4%), and aged 20–29 years (58.6%). Burgers (66.2%), pizza (44.1%), and fried chicken (38.3%) were most preferred, consumed primarily at dinner/evening for taste and convenience. Students demonstrated good knowledge (60.4%) and neutral-to-positive attitudes (87.4%), yet 36.5% were overweight/obese and 15.8% underweight. No significant differences in knowledge, attitude, or BMI emerged by gender or year of study (all $p > 0.05$, small effect sizes). Despite good knowledge and positive attitudes, a substantial proportion of students were overweight/obese, suggesting a potential knowledge–practice gap; however, no statistically significant association was found between knowledge, attitudes, intake frequency, and BMI ($p > 0.05$). Logistic regression showed that intake frequency, knowledge, attitude, and gender were not significant predictors of obesity (all $p > 0.05$; Nagelkerke $R^2 = 0.028$).

Conclusion

Despite adequate knowledge and positive attitudes, substantial proportions of students were overweight/obese or underweight. The lack of significant predictors highlights obesity's multifactorial

nature and the need for comprehensive, behavior-focused interventions beyond nutritional education in university settings.

1. Introduction

1.1 Study background

Fast food is usually referred to as food that is prepared and served quickly, with the aspect of convenience and speed over the nutrient content. These foods are high in calories, fats, and sugar and have spread extensively, especially among youth and adolescents [1]. Fast foods are a common choice for urban hectic lifestyles, offering an instant and enjoyable source of satisfaction without hunger. University students are prone to develop unhealthy lifestyles, for example, overindulgence in fast foods that result in poor dietary habits and an inactive lifestyle [2].

Fast food consumption has emerged as a major public health concern worldwide, particularly among adolescents and young adults. Rapid urbanization, industrialization, and globalization have led to a shift from traditional, nutrient-dense diets toward energy-dense fast foods that are high in fat, sugar, and salt, while being low in essential nutrients and dietary fiber [3]. This dietary transition has contributed significantly to the rising burden of Non-Communicable Diseases (NCDs), including obesity, Diabetes Mellitus, and CardioVascular Diseases (CVDs), which are now among the leading causes of morbidity and mortality globally.

University students represent a particularly vulnerable population due to lifestyle transitions, academic pressures, irregular meal patterns, and increased independence in food choices. Studies from various regions indicate that fast food consumption is highly prevalent among university students, driven mainly by taste, convenience, affordability, and time constraints [4, 5]. Evidence from the United States shows that nearly 50 million people consume fast food daily, with students forming a significant proportion of consumers [4]. Despite widespread awareness that fast food is unhealthy, consumption remains high, highlighting a persistent gap between knowledge and actual dietary practices [6].

Several international studies have explored fast food consumption patterns and their health implications among university students. Research from Iran demonstrated that although fast food intake was widespread, it was more strongly associated with abdominal obesity than general obesity, emphasizing the long-term metabolic risks of such dietary behaviors [7]. Similarly, studies from Bangladesh, India, Jordan, Afghanistan, and Malaysia consistently report high levels of fast-food consumption despite varying degrees of nutritional knowledge and awareness of health risks [5, 8–11]. These findings suggest that knowledge alone may not be sufficient to influence healthier food choices.

Recent research has increasingly focused on knowledge, attitudes, and practices (KAP) related to fast food consumption. A Malaysian study reported that while most university students were aware of the health risks associated with fast food, unhealthy eating practices persisted, indicating a clear knowledge–practice gap [11]. Similar findings were observed in studies conducted in Egypt and the

United Kingdom, where students demonstrated positive attitudes toward fast food despite insufficient nutritional knowledge and acknowledged health risks [12, 13]. Psychosocial factors such as attitudes, social norms, self-identity, and habitual behaviors were found to play a critical role in shaping fast food consumption, as explained by the Theory of Planned Behavior [9].

In the Middle Eastern context, Oman faces a significant and accelerating public health challenge. National survey data indicate alarmingly high prevalence of non-communicable diseases: 66% are overweight or obese, 11–15% have diabetes, and 33% have hypertension, even among younger populations [14]. These rates rival or exceed many developed nations, yet Oman remains understudied in the nutrition research literature. Understanding dietary behaviors and their drivers among health sciences students, future health professionals who will lead NCD prevention efforts is critical for building an evidence base to support health system strengthening in this region. Students living independently tend to consume more fast food and processed items, while those residing with family consume more home-cooked meals and demonstrate healthier lifestyle habits [15, 16].

Fast-food consumption trends have been increasing at a very rapid pace over the past few years. Research evidence indicates that age and sex have minimal effects on fast food consumption behavior; rather, the behavior is largely determined by taste preferences as well as availability of pocket money [1]. Despite the established negative health effects associated with long-term fast-food intake, its popularity continues to grow. This directs us to the urgent need for campaigns of awareness and effective policy measures towards avoiding fast food intake, particularly among young people.

Furthermore, the availability and accessibility of fast-food outlets near educational institutions have been shown to influence consumption patterns and Body Mass Index (BMI) among students. While some studies report no significant differences in knowledge or attitudes between normal-weight and overweight students, fast food consumption itself was directly associated with increased intake frequency [17]. These findings reinforce the importance of examining not only consumption habits but also the underlying knowledge and attitudes that shape dietary behaviors.

Despite the growing body of international and regional research, there remains a need for localized evidence that simultaneously examines habits, knowledge, attitudes, and their interrelationships, particularly among university students. Preliminary evidence from Malaysian universities indicates that taste, price, and convenience are the dominant factors influencing fast food consumption, while nutritional knowledge plays a relatively minor role [18]. Students often acknowledge the health risks associated with fast food consumption but continue the behavior due to ingrained lifestyle habits and environmental influences.

To date, no published study has comprehensively examined the interrelationships among fast-food consumption habits, nutritional knowledge, attitudes, and obesity among health sciences students in Oman. This population is strategically important because as future health professionals, nursing and allied health students must model healthy behaviors and provide credible health guidance to patients

and communities. Understanding the knowledge-practice gap in this professional cohort can inform targeted, behavior-focused interventions in health sciences education.

1.2 Objectives of the study

This cross-sectional study addresses this gap by examining: (1) fast-food consumption patterns among health sciences students; (2) levels of knowledge and attitudes regarding fast food and obesity; (3) associations between knowledge, attitudes, and BMI; and (4) predictors of obesity risk. The findings will inform targeted nutrition education interventions and campus health policies to promote healthier dietary behaviors among future health professionals in Oman.

2. Materials and Methods

The study was conducted among undergraduate students in University of Buraimi, Al Buraimi, Oman. Standardized questionnaire was administered to all available and accessible University students in College of Health Sciences and were used to collect personal characteristics of students and to evaluate the fast-food consumption habits, knowledge, and attitudes among university students in the Al Buraimi Governorate of Oman.

2.1Study Design

A descriptive cross-sectional study.

2.2Setting

This study was conducted at the University of Buraimi, Al Buraimi Governorate, Oman, specifically among students in the College of Health Sciences.

Target Population

Undergraduate students enrolled in the College of Health Sciences, University of Buraimi, across all years of study (Year 1–4).

2.3Sample Size

Although the initial sample size calculation using Cochran's formula indicated a requirement of 346 participants for 95% confidence with ± 5% margin of error, data collection occurred over September-October 2025, during which 222 complete responses were obtained from willing, eligible students. This achieved sample of 222 exceeds the minimum required by statistical power analysis (G*Power: N = 85 for f^2=0.15, α = 0.05, power = 0.80) and provides adequate precision for descriptive reporting and planned regression analyses. Response rate was not calculated because students were recruited through multiple online channels; however, participation was voluntary, and all willing eligible students were included.

2.3.1Sampling Criteria

Inclusion Criteria:

1. Undergraduate students currently enrolled in the College of Health Sciences, University of Buraimi
2. Available and willing to participate during the data collection period
3. Willing to provide informed consent

Exclusion Criteria:

1. Students not currently enrolled in an undergraduate program
2. Students unwilling to participate
3. Students on medically prescribed special diets or with chronic diseases heavily influencing dietary patterns

2.4Sampling Technique

A convenience sampling technique was employed. All undergraduate students in the College of Health Sciences who were available and accessible during the data collection period were invited to participate via an online survey link distributed through college email and student communication channels. Participation was voluntary, and students who agreed to participate and meet the inclusion criteria were included in the study.

2.5Data Collection Instruments

Part 1: Socio-Demographic Profile

Collected data on age, gender, year of study, marital status, socioeconomic status, and employment status.

Part 2: Fast-Food Consumption Pattern Survey

Assessed fast-food consumption habits including preferred food items and beverages (multiple response), frequency of intake (ordinal scale: <1/week, 1–2/week, 3–4/week, ≥ 5/week), timing of consumption, enjoyment levels, reasons for preference, and the influence of nutritional information on food choices.

Part 3: Knowledge Assessment

An 11-item questionnaire assessing knowledge of fast-food and obesity-related health risks. Each item was scored dichotomously (1 = correct, 0 = incorrect). Total scores ranged from 0–11 and were categorized as: Poor (0–4), Moderate (5–7), and Good (8–11). Internal consistency: Cronbach's α = 0.685.

Part 4: Attitude Assessment

A 9-item questionnaire measuring attitudes toward fast food consumption. Items were rated on a 3-point Likert scale (Disagree = 1, Neutral = 2, Agree = 3). Total scores ranged from 9–27 and were categorized as: Negative (9–15), Neutral (16–21), and Positive (22–27). Internal consistency: Cronbach's α = 0.742.

Part 5: Anthropometric Measures

Self-reported height (cm) and weight (kg) were used to calculate BMI (kg/m²). BMI categories: Underweight (< 18.5), Normal (18.5–24.9), Overweight/Obese (≥ 25.0).

2.6 Validity and Reliability

The questionnaire was adapted from validated instruments used in previous studies examining fast-food consumption and knowledge-attitude-practice among university students [10, 13]. Content validity was established through review by three faculty members with expertise in nutrition and public health. The questionnaire was pilot tested with 20 students (not included in the main study) to assess clarity; minor wording adjustments were made based on feedback. Internal consistency was assessed using Cronbach's alpha for the knowledge scale (α = 0.685) and attitude scale (α = 0.742), both indicating acceptable reliability.

2.7Ethical Considerations

Ethical approval

was obtained from the University of Buraimi Research Ethics Committee. All procedures performed in this study involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all participants before data collection. Participants were informed of the study's purpose, their right to withdraw at any time without penalty, and the confidentiality of their data. All data were collected anonymously.

2.8 Data Collection Procedure

Data were collected from undergraduate students in the College of Health Sciences at the University of Buraimi during September-October 2025. Students who agreed to participate were provided with an online survey link (Google Form) shared via email and student communication channels. The survey took approximately 5–10 minutes to complete and included informed consent, demographic questions, fast-food consumption patterns, knowledge and attitude assessments, and anthropometric information.

2.9 Data Analysis

Data were analyzed using IBM SPSS Statistics (version 31.0). Descriptive statistics (frequencies, percentages, means, and standard deviations) were calculated for all variables. Internal consistency of knowledge and attitude scales was assessed using Cronbach's alpha (α > 0.70 considered acceptable).

Of the 222 complete responses, missing data were minimal: height and/or weight were missing for 14 participants (6.3%), resulting in BMI calculations for 208 participants. All other variables had no missing values.

The small amount of missing anthropometric data (6.3%) was assumed to be missing at random and was handled via listwise deletion in regression analyses; however, this may have slightly reduced precision in BMI-related estimates.

Bivariate Analyses: Independent samples t-tests (for gender) and one-way ANOVA (for year of study) examined differences in knowledge, attitude, and BMI. Effect sizes were calculated (Cohen's d for t-tests, partial η^2 for ANOVA) to assess practical significance.

Multivariable Analysis: Binary logistic regression tested predictors of obesity (BMI ≥ 25 kg/m²), with intake frequency, total knowledge score, total attitude score, and gender entered as predictor variables. Model fit was assessed using the Omnibus test, Nagelkerke R^2, Hosmer-Lemeshow test, and classification accuracy. Variance inflation factors (VIF) were calculated to assess multicollinearity (VIF < 10 considered acceptable).

Statistical significance was set at $p < 0.05$ for all tests.

3. Results

Table 1
Objective 1 – Socio-demographic characteristics and health profile of participants (N = 222)

Variable	Category	n	%
Gender	Male	25	11.26
	Female	197	88.74
Age group	< 20 years	63	28.38
	20–29 years	130	58.56
	30 + years	29	13.06
Year of study	Year 1	38	17.12
	Year 2	68	30.63
	Year 3	73	32.88
	Year 4	43	19.37
Marital status	Single	207	93.24
	Married	15	6.76
Socioeconomic status	Low income	49	22.07
	Middle income	134	60.36
	High income	39	17.57
Employment status	Working	15	6.76
	Not working	207	93.24

Most participants were female, single, and in the middle-income category, with the majority aged 20–29 years and distributed fairly evenly across years of study.

Table 2
Objective 1 – Fast-food consumption habits and dietary preferences

Category	Item	n	% of cases
Preferred food	Burger	147	66.22
	Pizza	98	44.14
	Fried chicken	85	38.29
	Shawarma	58	26.13
	Pasta	27	12.16
Preferred beverage	Soft drinks/fizzy	92	41.44
	Water	89	40.09
	Fruit juices	78	35.14
	Tea/coffee	88	39.64
Intake timing	Dinner	101	45.50
	Evening	73	32.88
	Lunch	43	19.37
Reason for choice	Taste/flavor	124	55.86
	Saves time	73	32.88

Burgers were the most commonly preferred fast food, and soft drinks, tea/coffee, and water were the most frequently chosen beverages, with fast food typically consumed at dinner or in the evening, mainly for taste and convenience.

Pie chart showing the frequency of preference for specific fast-food items: burger (66.2%), pizza (44.1%), fried chicken (38.3%), shawarma (26.1%), and pasta (12.2%). Burgers were the most commonly preferred item.

Table 3
Objective 2 – Levels and reliability of knowledge and attitude regarding fast food and obesity

Variable	Level	n	%	Mean (SD)	Alpha (α)
Knowledge score	Poor (0–4)	10	4.50	7.56 (1.85)	0.685
	Moderate (5–7)	78	35.14		
	Good (8–11)	134	60.36		
Attitude score	Negative (9–15)	28	12.61	20.45 (3.04)	0.742
	Neutral (16–21)	129	58.11		
	Positive (22–27)	65	29.28		
BMI status	Underweight	35	15.77	22.95 (5.28)	—
	Normal	106	47.75		
	Overweight/obese	81	36.48		

Overall, students demonstrated generally good knowledge and predominantly neutral to positive attitudes toward fast food and obesity, while over one-third were classified as overweight or obese.

Bar chart depicting prevalence of underweight (15.8%), normal weight (47.7%), and overweight/obese (36.5%) students, highlighting the dual burden of malnutrition.

Table 4
Objectives 3–6 – Bivariate associations between knowledge, attitude, BMI, and demographic factors

Dependent variable	Factor	Comparison	Mean (SD)	Test statistic	p-value	Effect size
Total knowledge	Gender	Male/Female	7.08 / 7.62	t(220) = −1.412	0.159	d = 0.291
	Year	Years 1–4	7.32–7.65	F(3, 218) = 0.301	0.825	ηp^2 = 0.004
Total attitude	Gender	Male/Female	19.88 / 20.53	t(220) = −1.018	0.310	d = 0.213
	Year	Years 1–4	19.89–21.05	F(3, 218) = 1.341	0.262	ηp^2 = 0.018
Actual BMI	Gender	Male/Female	24.37 / 22.78	t(208) = 1.352	0.178	d = 0.274
	Year	Years 1–4	22.45–23.08	F(3, 206) = 0.224	0.880	ηp^2 = 0.003

There were no statistically significant differences in knowledge, attitude, or BMI by gender or year of study, and all observed effect sizes were small.

Table 5
Objective 7 – Binary logistic regression predicting obesity (BMI ≥ 25) from intake frequency, knowledge, attitude, and gender

Predictor	B	S.E.	Wald	df	p-value	Exp(B)	95% CI for Exp(B)	VIF
Intake frequency	−0.227	0.168	1.820	1	0.177	0.80	0.57 to 1.12	1.04
Total knowledge	0.053	0.091	0.346	1	0.556	1.06	0.88 to 1.28	1.08
Total attitude	0.029	0.053	0.287	1	0.592	1.03	0.93 to 1.14	1.06
Gender (male)	−0.575	0.457	1.581	1	0.209	0.56	0.23 to 1.38	1.07
Constant	−1.047	1.202	0.759	1	0.384	0.35	—	—

In the multivariable logistic regression model, intake frequency, knowledge, attitude, and gender were not significant independent predictors of obesity, and the model explained little variance in obesity risk.

Model fit and diagnostics for the logistic regression model showed that the overall model was not statistically significant, Omnibus χ^2 (4) = 4.27, p = 0.371, with limited explained variance (Nagelkerke R^2 = 0.028). The − 2 log likelihood was 245.92, and the model correctly classified 74.7% of cases, reflecting predominantly base-rate (non-obese) classification rather than strong predictive performance.

4. Discussion

This cross-sectional study of 222 health sciences students found that despite generally good knowledge of fast-food health risks (60.4% scored "good") and predominantly neutral attitudes, more than one-third were overweight or obese. Neither knowledge, attitudes, nor intake frequency significantly predicted obesity, and no demographic differences were observed in knowledge, attitudes, or BMI. These findings challenge assumptions about the protective role of nutritional education alone and highlight the complexity of obesity determinants in university populations.

4.1Socio-demographic profile and consumption patterns

The majority of participants were female, single, middle-income, and aged 20–29 years, consistent with typical university demographics reported by Husseini and Norhaizan [11] in their Malaysian study, where females comprised 59.4% of the sample. This profile reflects the intersection of academic demands, time constraints, and easy access to fast-food outlets that characterize modern university environments. The predominance of middle-income students underscores the role of affordability in shaping dietary choices, supporting evidence that fast-food consumption is driven more by taste preferences and economic factors than by demographic characteristics alone [1].

Burgers were the most preferred fast-food item, followed by pizza and fried chicken, with consumption predominantly occurring during dinner or evening hours and motivated primarily by taste and convenience. These patterns align with Sivasankari and Logambal [19], who found that 90% of students favored fast food for taste and 68% for convenience. However, the current study's evening consumption pattern contrasts with the morning preference reported in their study, likely reflecting differences in academic schedules, cultural meal timing, and campus food availability. Evening consumption may be driven by late-day fatigue, social dining preferences, and the use of fast food as a convenient post-class dinner solution.

4.2 Knowledge, attitudes, and the knowledge-practice paradox

The most striking finding of this study is the paradox between high knowledge and persistent obesity risk. Despite 60.4% of students scoring in the "good" knowledge category, more than one-third were overweight or obese, and knowledge was not a significant protective factor in regression analysis. Similarly, attitudes were predominantly neutral (58.1%) or positive (29.3%), indicating that awareness of health risks does not necessarily translate into avoidance behavior. These patterns align with Husseini and Norhaizan [11], who found that 99.7% of university students had moderate to high knowledge levels, yet more than half expressed neutral attitudes and continued regular fast-food consumption.

This knowledge-practice gap is well-documented in health behavior research and reflects the fact that cognitive awareness alone is insufficient for behavior change. In the context of health sciences students, professional training creates intellectual understanding of nutritional risks, yet personal eating behaviors remain shaped by convenience, time pressure, palatability, peer norms, stress, and limited availability of healthier campus alternatives. The predominantly neutral attitudes observed (58.1%) may reflect ambivalence when students recognize health risks intellectually while simultaneously valuing the sensory appeal, affordability, and social aspects of fast food. This dissonance between professional knowledge and personal behavior suggests that health sciences curricula emphasizing theoretical knowledge without addressing behavioral skills, self-regulation strategies, and environmental barriers may fail to support students in translating learning into healthier personal lifestyles.

4.3 Obesity prevalence and dual nutritional burden

More than one-third of students (36.5%) were overweight or obese, consistent with findings from Iran where Mohammadbeigi et al. [7] reported rates of 41.2% among female and 30.7% among male university students. Equally concerning, 15.8% were underweight, leaving less than half of the normal BMI range. This dual burden of malnutrition coexisting underweight and overweight/obesity, reflects heterogeneous nutritional risks within the student population and may indicate food insecurity, disordered eating, body image concerns, or meal skipping in some subgroups alongside overconsumption in others. This polarized profile necessitates comprehensive campus health approaches that address both under- and over-nutrition rather than focusing exclusively on obesity prevention.

Absence of demographic associations

No statistically significant differences in knowledge, attitudes, or BMI emerged by gender or year of study, with all effect sizes small ($d = 0.21–0.29$; $\eta p^2 = 0.003–0.018$). These findings align with studies from Egypt [20], Iran [21], Malaysia [11], and Libya [22], all of which report no significant gender-based differences in fast-food knowledge, attitudes, or consumption. The consistency across diverse cultural contexts suggests that within university populations, fast-food behaviors may be shaped more by environmental and situational factors, such as campus food availability, time constraints, and social norms, than by demographic characteristics. The lack of progression in knowledge or dietary behaviors across academic years suggests that standard health sciences curricula—which increase theoretical knowledge, may be insufficient without parallel investment in personal wellness support, behavioral skills training, and environmental modifications. This finding challenges the assumption that health professional training automatically promotes healthier personal practices and underscores the need for integrated wellness components in nursing and health sciences curricula.

4.4 Predictors of obesity: A weak and non-significant model

Multivariable logistic regression revealed that intake frequency, knowledge, attitude, and gender were not significant independent predictors of obesity (BMI ≥ 25), and the model explained only 2.8% of variance (Nagelkerke $R^2 = 0.028$; Omnibus χ^2 (4) = 4.27, $p = 0.371$). Classification accuracy (74.7%) primarily reflected base-rate prediction. These findings align with those of Mwafi et al. [23], who found no significant associations between fast-food consumption and BMI among 503 Jordanian university students.

The weak predictive power of this model highlights several key issues. Self-reported intake frequency does not capture portion sizes, total energy intake, or dietary quality. Obesity is multifactorial, influenced by genetic predisposition, total energy balance, physical activity, sleep, stress, and long-term dietary patterns accumulated prior to university enrollment. The cross-sectional design cannot determine whether current fast-food intake contributes to obesity or whether pre-existing weight status influences dietary choices. Although Abdilaahi and Bereka [24] reported that educational level, pocket money, family habits, and fruit/vegetable intake were associated with fast-food consumption in bivariate analyses, these factors do not necessarily predict obesity in multivariable models. The present findings suggest that obesity among university students is determined by a broader constellation of lifestyle, environmental, metabolic, and genetic factors not captured in this study.

5. Implications and recommendations

These findings have important implications for campus health promotion and health sciences education. First, interventions cannot rely only on nutritional education; behavior change requires supportive environments, accessible healthy alternatives, skills training, and strategies addressing psychological, social, and structural barriers. Multi-level interventions combining environmental modifications, such as

increasing availability and affordability of nutritious campus foods, with behavioral strategies like meal planning workshops and stress management, are needed. Second, the dual burden of underweight and overweight/obesity indicates that universal BMI screening with tailored support is necessary rather than one-size-fits-all programs. Third, the lack of demographic differences suggests campus-wide policies may be more effective than targeted subgroup interventions. Finally, health sciences curricula should integrate personal wellness and behavior change components to help future health professionals align their personal practices with their professional knowledge.

For nursing and health sciences educators in Oman: (1) Curriculum integration: Add mandatory modules on self-regulation, stress management, and conscious eating within professional identity courses, moving beyond nutrition knowledge to behavior support. (2) Campus partnerships: Work with University of Buraimi administration to ensure student cafeterias include affordable, appealing healthy options (not just quick-service vendors); consider subsidizing nutritious meals as student wellness benefit. (3) Modeling expectations: Establish departmental wellness initiatives (e.g., faculty-staff-student meal prep workshops, walking groups) to demonstrate institutional commitment to health professional wellness. (4) Screening and support: Implement universal BMI screening at orientation with referral pathways for both underweight (possible food insecurity) and overweight/obese students, coupled with confidential nutrition counseling and mental health support to address underlying drivers.

6. Strengths and limitations

This study's strengths include a well-defined sample, reliable instruments (Cronbach's α = 0.685–0.742), and transparent reporting of effect sizes and model diagnostics. However, several limitations must be acknowledged. The cross-sectional design precludes causal inference. Self-reported dietary intake and anthropometric data are subject to recall and social desirability bias. The study was conducted in a single institution among health sciences students, limiting generalizability. The regression model excluded important obesity determinants including total dietary intake, physical activity, sleep, stress, and genetic factors, likely explaining the very low explanatory power (Nagelkerke R^2 = 0.028). Future studies should employ longitudinal designs, validated dietary assessment tools, objective measures of body composition and physical activity, and broader predictor sets. Mixed-methods research could elucidate the mechanisms underlying the knowledge-practice gap, and intervention trials are needed to test multi-component strategies combining environmental modifications with skills-based support.

7.Conclusion

Health sciences students demonstrated generally good knowledge about fast food and obesity, yet more than one-third were overweight or obese, and knowledge, attitudes, and intake frequency did not predict obesity risk. Fast-food consumption was driven primarily by taste and convenience, with no significant demographic differences observed. These findings underscore that obesity and dietary behavior among university students are shaped by complex lifestyle, environmental, and socioeconomic factors beyond knowledge alone, highlighting the need for comprehensive, multi-level interventions addressing the

campus food environment, behavioral skills, and structural barriers to healthy eating. These findings resonate across nursing and health sciences education globally and are particularly salient for resource-limited settings (including the Middle East) where both over-nutrition (rising obesity, NCDs) and under-nutrition (food insecurity) threaten population health. Future research should test tailored, behavior-focused interventions combining environmental modification with skills-based support, with particular attention to the needs of health professional students as agents of change in their communities.

Declarations

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Author contributions

LM: Conceptualization, study design, data collection, data analysis, writing—original draft, writing—review and editing.
HC: Conceptualization, study design, data analysis, writing—review and editing, final approval of the manuscript.
SSG: Conceptualization, study design, critical review of the manuscript.
WKTF: Conceptualization, study design, critical review of the manuscript.
FAAS: Critical review of the manuscript.

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Data availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethics approval and consent to participate

Ethical approval was obtained from the University of Buraimi Research Ethics Committee. Informed consent was obtained from all participants before data collection. Participants were informed of the study's purpose, their right to withdraw at any time without penalty, and the confidentiality of their data. All data were collected anonymously.

Consent for publication

Not applicable. No individual-level data, images, or identifiable information is included in this manuscript.

Competing interests

The authors declare no competing interests.

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Figures

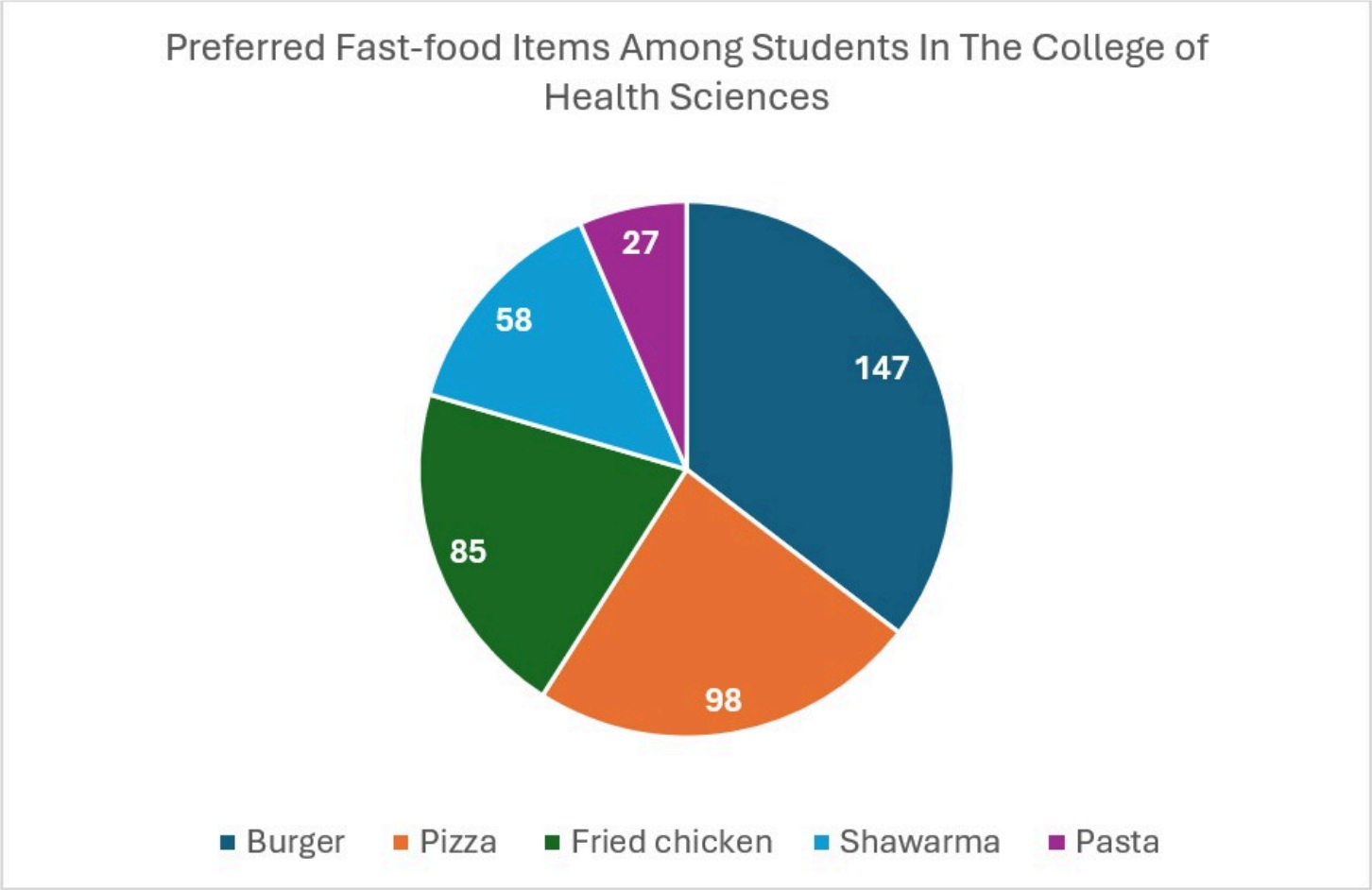


Figure 1

Distribution of Preferred Fast-Food Items Among Health Sciences Students (N=222)

Pie chart showing the frequency of preference for specific fast-food items: burger (66.2%), pizza (44.1%), fried chicken (38.3%), shawarma (26.1%), and pasta (12.2%). Burgers were the most commonly preferred item.

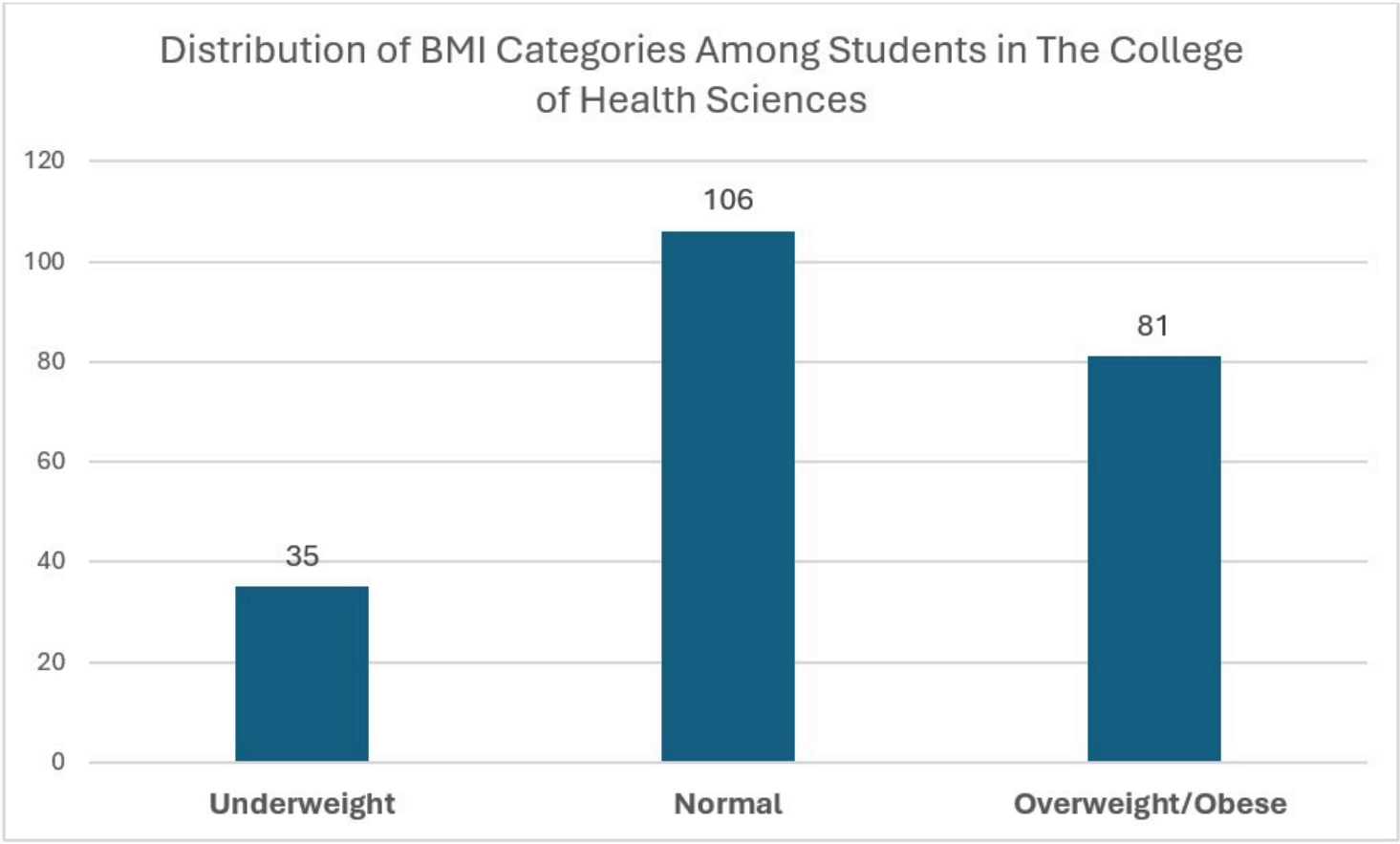


Figure 2

Distribution of Body Mass Index Categories Among Health Sciences Students (N=208)

Bar chart depicting prevalence of underweight (15.8%), normal weight (47.7%), and overweight/obese (36.5%) students, highlighting the dual burden of malnutrition.

Supplementary Files

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- STROBEChecklist.docx