Physical Activity and Nutritional Assessment among Nursing Students at one of the Egyptian Universities

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Abstract

Background: Proper nutrition and consistent physical activity are crucial for fostering good health, especially among university students who often undergo significant lifestyle changes during this transformative period. **Aim**: This research aims to thoroughly evaluate the nutritional habits and physical activity patterns among nursing students. **Methods**: Employing a descriptive exploratory research design, the study involved a random sample of 234 undergraduate nursing students. **Data collection** utilized structured questionnaires designed to assess socio-demographic characteristics, nutritional patterns, and levels of physical activity. A scoring system was established to categorize responses as satisfactory or unsatisfactory. **Results**: Alarmingly, less than half of the students identified as smokers. More than half reported skipping breakfast, while nearly half of the students admitted to frequently consuming fast-food. Additionally, about half of the students did not follow a planned exercise regimen, with an exceptionally the majority of the students exhibiting low levels of physical activity. **Conclusion**: The findings highlight critical health risks linked to poor dietary choices and a lack of physical activity among nursing students, emphasizing the urgent need for targeted health interventions. **Recommendations**: It is essential for universities to implement mandatory nutrition education programs, improve access to healthy food options, establish smoking cessation initiatives, and create structured physical activity programs that encourage healthier lifestyle choices among students.

Keywords: Nutrition, physical activity, nursing students, health promotion, Egypt

Introduction:

The two most important determinants of health are adequate and balanced nutrition and regular physical activity. The University period, which is the transition from adolescence to adulthood, is stressful for many students and is a period in which students experience an increase in inadequate and unbalanced eating habits. In this period, to prevent health problems that may arise in older ages, it is necessary to define the nutritional status of individuals, to determine the reasons and to monitor and evaluate the nutritional status of individuals to find solutions (Heslin & McNulty, 2023).

Determination of nutritional status is possible with many methods. Most frequently used methods are patient's anamnesis, anthropometric measurements (waist circumference, height-weight account, etc.), 24-hour food consumption scale, food consumption frequency and recall with scale, diet history, biochemical tests, etc. However, using a combination of several of these methods is realistic to determine the nutritional status. For example, they validate the information obtained when evaluated together with the frequency of food consumption and the 24-hour food consumption and gives information about the food recall with pattern (Kesari & Noel, 2023).

Food consumption frequency and consumption of food or groups of nutrients can be determined daily, weekly or monthly and as quantity when requested. Regular physical activity prevents the formation of obesity and of many diseases. The transition to university can be a turbulent period of a young person's life, characterized by increased independence, socializing, self-regulation and self-organization (Kabir et al., 2018).

Nursing students encounter a my challenges that uniquely influence their activity and nutritional habits. Durir demanding transition to university life, the experience heightened stress levels due to academic workloads, clinical placements, and pressures associated with both studying and training. Research indicates that this environment can lead to irregular eating such as skipping meals or resorting to con foods, as well as a substantial decrease in activity levels (Mohammed et al., 2024).

The stressful nature of nursing education often results in the prioritization of academic commitments over personal health, leading to increased risks for lifestyle- related health issues (Lavoie-Tremblay et al., 2022). Additionally, nursing students may face barriers such as lack of time for exercise, limited access to nutritious food options, and insufficient knowledge regarding maintaining a balanced diet, emphasizing the need for targeted health promotion strategies that address these specific challenges.

Qualitative research among university students has shown that dietary habits are driven by a cluster of personal, societal, environmental and academic factors. Among societal and environmental parameters are the influence of peers and the availability and affordability of foods. Nutrition habits and perceived health benefits of food, together with other individual factors (e.g. cooking skills), are also factors affecting dietary behavior according to students (Willet, 2020).

Significance of the study

There is a paucity of research examining lifestyle behaviors—such as levels of physical activity, sedentary behavior, and dietary habits—among university students during exceptional or transitional periods. Given their academic background in health-related disciplines, variations in lifestyle patterns may reasonably be anticipated among students enrolled in different health profession programs (Willet, 2020).

The transition from secondary education to university life is often accompanied by increased autonomy, which presents challenges for students in making health-conscious dietary decisions. This developmental phase into early adulthood is frequently marked by the adoption of unhealthy lifestyle behaviors, which may persist into later life and establish long-term health trajectories (Sliva et al., 2023).

In light of these considerations, the present study seeks to investigate the nutritional habits and physical activity patterns of nursing students at a selected Egyptian university.

Aim of the study

This study aimed to evaluate the nutritional habits and physical activity patterns among nursing students at one of the Egyptian Universities.

Research Questions

To achieve the aim of the current study, the following research questions have been

postulated:

- What are the dietary habits of nursing students?
- What is the physical activity patterns of the nursing students?
- Is there a relationship between nutritional habits and physical activity patterns & other sociodemographic variables?

Subject and Methods

Design: A descriptive exploratory research design was utilized to achieve the aim of the current study.

Setting:

The current study was conducted at a faculty of nursing, Beni-Suef National University, Egypt—a public institution that provides undergraduate nursing education. The faculty is located in Beni-Suef city, approximately 120 km south of Cairo, serving a diverse student population from urban and rural areas across Egypt. The study was conducted at the first floor of the building using the students' class.

Sample:

The study population included undergraduate students, age 18 years and above enrolled in general education courses at faculty of nursing, Beni-Suef National University by random sampling.

A power analysis was conducted using G Power version 3.1.9.2 to ensure an adequate sample size for statistical significance, with results indicating a minimum requirement of 234 participants.

Tools of data collection

Two tools were utilized to gather data:

Tool I: Participants' Dietary habits

It was adapted from Mahmoud (2022), Smith et al., (2020), Hailu et al., (2021), Ataey et al., (2020) and Güneş et al., (2019). It has 2 parts.

The first part of the tool:

It included bio sociodemographic characteristics of the studied students. It includes (6) questions about age, gender, place of residence, perceived health, being on a special diet, smoking status. It also included anthropometric measurements of weight and height, then the BMI values were calculated through the formula (the body weight divided by the square of the body height) and classified according to WHO's BMI standards as follows: those less than 18.5 kg/m2 were categorized as underweight, those between 18.5 to 24.9 kg/m2 as normal weight, those between 25-29.9 kg/m2 were overweight or pre-obese, and those 30.0-34.9 kg/m2 as obese (WHO, 2020).

The second part of the tool:

It included (8questions) aimed to investigate students' eating habits through asking about having breakfast, the number of meals per day, having snacks, eating 2 portions of fruits per day, eating about 2 portions of vegetables per day, drinking 2-3 liters of water per day, consuming milk and dairy products daily, consuming fast-foods daily.

Scoring system

Responses were recorded using a four-point Likert scale with the following categories: Always, Usually, Sometimes, Never. Frequency distributions were computed to analyze patterns in dietary habits, with responses subsequently classified into predefined categories for comparative analysis.

Tool II: Assessment of Physical Activities, which was adapted from Mahmoud (2022), Smith, et al., (2020), Hailu et al., (2021), Ataey et al., (2020), Güneş et al., (2019), & El-Gilany, et al., (2011). It included (8) questions about physical activity habits, including the following: Follow a planned exercise program, Perform stretching exercise daily, Exercise 30 min at least 3 times per week, Participate in physical fitness class, Take part in leisure-time (recreation) physical activities (such as swimming, dancing, bicycling), Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators), Warm up before vigorous exercise, Make an effort to stand or sit straight.

Scoring System:

In addition to frequency distribution of physical activity patterns using a four-point Likert scale with the following categories: Routinely, Often, Sometimes, Never; the responses were scored in the range of 0-3. The highest score (3) was assigned to the healthiest response, and the minimum score (0) was assigned to the least healthy response. The total score for that section was 24. Scores below 60% was referred to as "unsatisfactory", and a score ≥ 60% was referred to as "satisfactory".

Validity & Reliability of Tools

Content validity of the modified tools was established by a panel of five experts from Faculty members in Medical Surgical Nursing. The experts were asked to examine the tools for content coverage, clarity, wording, length, formatting, and overall appearance. Modifications were carried out according to expert's judgments on clarity of sentences and appropriates of the content. In addition, the same weight scale was used to all studied students during measuring their weight. The reliability of the tools was assessed using Cronbach's alpha to measure internal consistency. A pilot test was conducted with a

sample of nursing students to determine the reliability of the questionnaires. The Cronbach's alpha coefficient was found to be 0.84 and 0.81 for tool I and II respectively, indicating good internal consistency for its item.

Pilot study:

Pilot study carried out on 10% of students under study and excluded from the sample size to test the applicability, clarity and efficiency of the tools, then the tool modified according to the results of pilot study.

Ethical Consideration

A written initial approval was obtained from the ethics of research committee of the Faculty of Nursing – Beni-Suef National University. Informed consent was obtained from each subject after explaining the nature and purpose of the study. The researcher emphasized that participation in the study is entirely voluntary, and anonymity and confidentiality were assured.

Procedure (field work)

The study was conducted throughout three phases: preparatory, implementation, and evaluation phase.

Preparatory phase: Firstly, the researcher conducted review of the related literature and prepared the tools for data collection, constructed the content validity and obtained the official permission to proceed with the current study. Once official approval was obtained from the university administration, an initial interview was conducted with the students who met the inclusion criteria, and they were informed about the nature and purpose of the study and then obtained written consent from those who agreed to participate.
Implémentation phase: an individualized interview session was conducted by the researcher with each student; to collect data related to the sociodemographic characteristics, dietary habits and Assessment of Physical Activities the filling of the tool took 20 min approximately.
Evaluation Phase: the researcher assessed students' sociodemographic characteristics, dietary habits and physical activities.

Statistical analysis

Data was fed to the computer and analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp) Qualitative data were described using number and percentage. Quantitative data were described using frequency distribution, range (minimum and maximum), mean, standard deviation and median.

Results:

Part 1: Bio-Sociodemographic Characteristics:

Table (1):

As shown in Table (1), 55.1% of studied students were females, 63.2% of them were from rural areas and 60.7% of them were in 1st academic year. Also, 78.2% of the participant students stated that they had good health, 63.2% of them reported that they were not on a special diet and 20.1% of them were smokers.

Table (2):

Table (2) reveals that 47.4% of the studied students had normal body weight with mean BMI 27.26±7.55, mean body weight 70.02±19.61 kg and mean height 160.32±9.38 cm.

Part 2: Participants' Nutritional habits:

Figure (1) showed that 52.6% of the studied students never ate breakfast, 38.9% of them never ate 3 meals/day, Also, 43.6% of them were never drinking milk and eating dairy products/day, 47.9% were always eating fast-food and 62.8% of them were always eating desserts.

Part 3: Participants' Physical Activities:

Table (3) presented that 51.3% of studied students never followed a planned exercise program, 59% of them never exercise 30 min at least 3 times per week, and only 22.6% of them sometimes get exercise during usual daily activities.

Figure (3) presents that 89.3% of the studied students had an unsatisfactory level of physical activity and 10.7% of them had a satisfactory level of physical activity.

Part 4: Correlation results:

Table (4) illustrated that there were statistically significant differences among male and female regarding mean score of BMI, weight and height (p value ≤0.05

Table (5) reveals that there were statistically significant differences among male and female regarding mean score of all nutritional patterns and physical activity level (p value ≤0.05).

Table (1): Distribution of the Studied Nursing Students according to Bio-Sociodemographic Characteristics (n = 234).

Bio Socio-demographic Characteristics	No.	%
Age (years)		
• >18	4	1.7
• 18 to <19	74	31.6
• 19 to <20	73	31.2
• 20 to <21	83	35.5
Mean ± SD	20.00 ± 0.86	
Gender		
• Female	129	55.1
• Male	105	44.9
Place of residence		
• Urban	86	36.8
• Rural	148	63.2
Academic year		
• 1st year	92	39.3
• 2nd year	142	60.7
Perceived health		
• Poor/fair	22	9.4
• Good	183	78.2
• Very Good/excellent	29	12.4
Being on a special diet		
• No	148	63.2
• Yes	86	36.8
Smoking		
• No	187	79.9
• Yes	47	20.1

Table (2): Distribution of the Studied Nursing Students according to BMI Characteristics (n = 234)

Body Mass Index	No.	%
BMI (kg/m)		
Underweight (<18.5)	8	3.4
Normal (18.5-24.9)	111	47.4
Overweight (25-29.9)	41	17.5
Obese (≥30)	74	31.6
Mean ± SD	27.26±7.55	
Mean Weight (kg) ± SD	70.02±19.61	
Mean Height (cm) ± SD	160.32±9.38	

SD: Standard deviation

Figure (1): Distribution of the Studied Nursing Students according to Dietary Habits (n = 234)

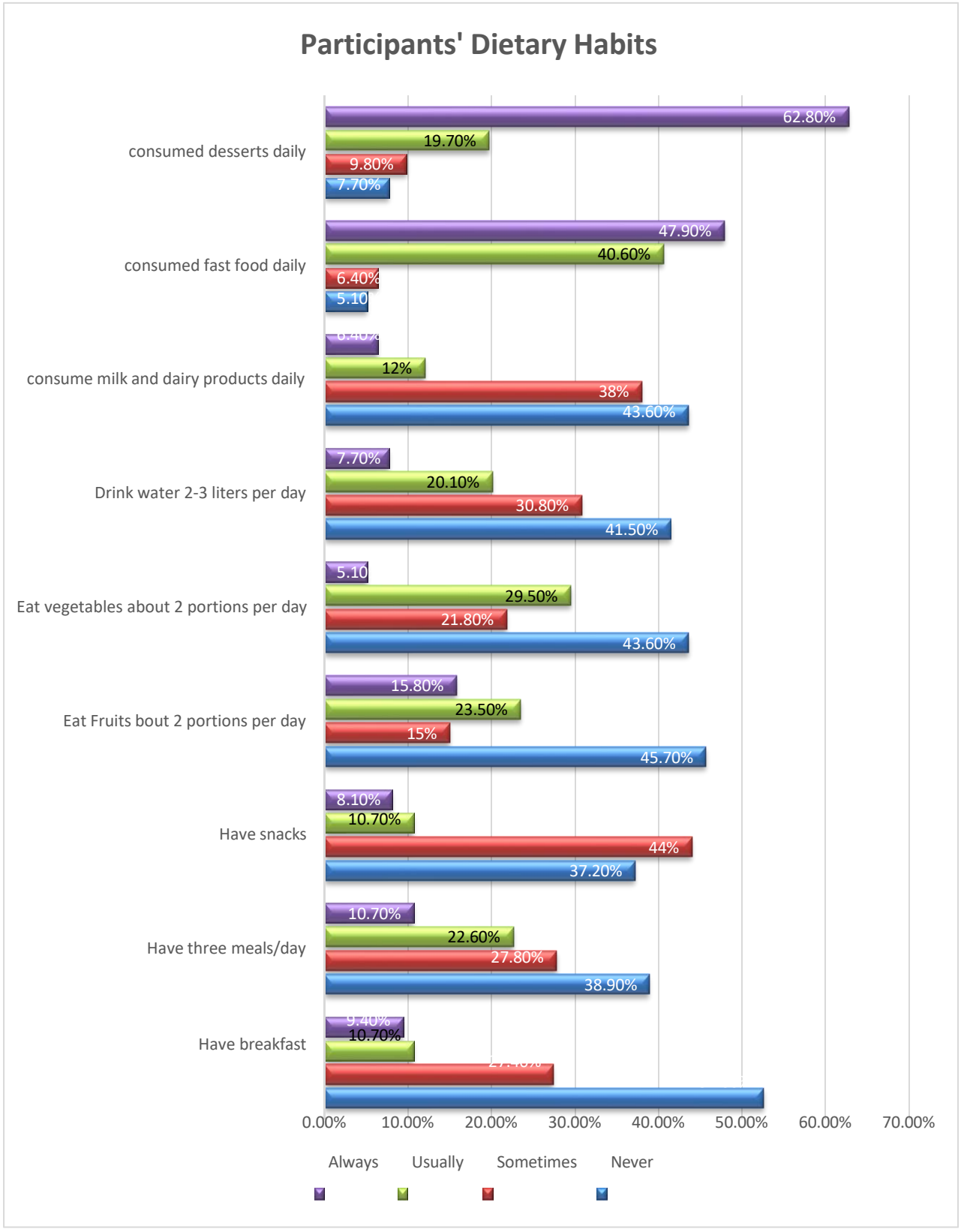

Table (3): Distribution of the Studied Nursing Students according to Physical Activity Patterns (n = 234).

Items	Never		Sometimes		Often		Routinely	
	No.	%	No.	%	No.	%	No.	%
• Follow a planned exercise program.	120	51.3	52	22.2	27	11.5	35	15.0
• Perform stretching exercise daily.	130	55.6	38	16.2	27	11.5	39	16.7
• Exercise 30 min at least 3 times per week.	138	59.0	34	14.5	29	12.4	33	14.1
• Participate in physical fitness class.	131	56.0	45	19.2	29	12.4	29	12.4
• Take part in leisure-time (recreation) physical activities (such as swimming, dancing, bicycling).	113	48.3	41	17.5	44	18.8	36	15.4
• Get exercise during usual daily activities (such as walking during lunch, using stairs instead of elevators)	132	56.4	53	22.6	24	10.3	25	10.7
• Warm up before vigorous exercise.	138	57.7	48	20.5	26	11.1	22	9.4
• Make an effort to stand or sit straight	119	50.9	38	16.2	32	13.7	45	19.2

Figure (2): Distribution of the Studied Nursing Students according to their Physical Activity Level (n = 234).

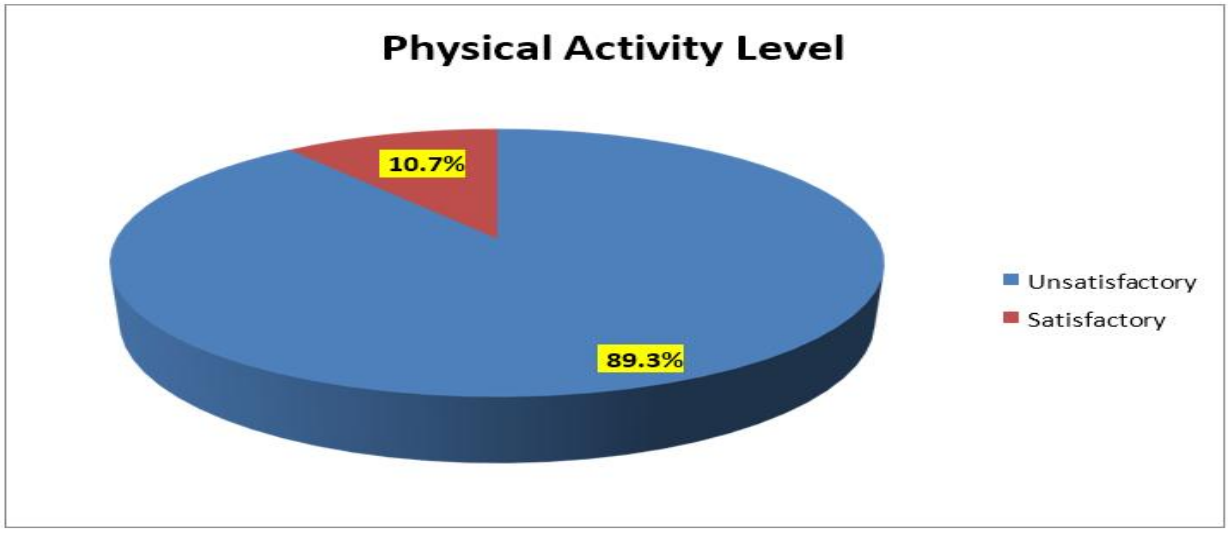

Table (4): Relation between certain Bio-Sociodemographic Characteristics of the studied nursing students (BMI, Weight & Height) and their Gender (n = 234).

	Male (n=105)		Female (n=129)		Total		t test	p value
	No.	%	No.	%	No.	%		
BMI (kg/m)								
Underweight (<18.5)	5	2.2	3	1.3	8	3.4	X2 (2.182)	0.536
Normal (18.5-24.9)	52	22.2	59	25.2	111	47.4		
Overweight (25-29.9)	19	8.1	22	9.4	41	17.5		
Obese (≥30)	29	12.4	45	19.2	74	31.6		
Mean ± SD	26.57±7.46		27.82±7.60		27.26±7.55		53.399	0.000**
Weight (kg) Mean ± SD.	69.95±19.77		70.06±19.547		70.01±19.607		2.572	0.048*
Height (cm) Mean ± SD.	1.61±0.098		1.60±0.089		1.60±0.094		52.258	0.000**

*Positive correlation at p≤0.05 ** strong positive correlation at p≤0.01

Table (5): Comparative Analysisby Gender regarding Dietary Habits and Physical Activity (n = 234).

Items	Male	Female	Total	t test	p value
	Mean±SD	Mean±SD	Mean±SD		
• **Eat breakfast**	1.78±0.940	1.76±1.014	1.77±0.979	3.020	0.003**
• **3 meals/day**	1.97±0.975	2.12±1.058	2.05±1.022	6.922	0.000**
• **Snacks**	1.92±0.863	1.88±0.919	1.90±0.892	5.123	0.000**
• **More than 2 portions of fruit/day**	1.95±1.078	2.21±1.197	2.09±1.150	6.913	0.000**
• **More than 2 portions of vegetables/day**	1.92±0.973	2.01±0.966	1.96±0.969	5.658	0.000**
• **2-3 liters of water/day**	1.90±0.946	1.97±0.976	1.94±0.961	5.572	0.000**
• **Milk and dairy products consumed/day**	1.78±0.877	1.84±0.891	1.69±0.808	3.987	0.000**
• **Fast-food**	1.68±0.826	1.70±0.797	1.69±0.808	2.216	0.028*
• **Dessert**	1.59±0.898	1.67±1.006	1.62±0.947	1.022	0.038*
• **Physical activity level**	16.077±2.978	15.65±2.942	15.88±2.96	73.847	0.000**

*Positive correlation at p≤0.05 ** strong positive correlation at p≤0.01

Discussion

The findings from a study investigating dietary habits and physical activity levels among nursing students at Beni-Suef University offer significant insights into the health behaviors of this demographic during a crucial transition in their lives. As entering university typically fosters substantial lifestyle modifications, it is essential to comprehend how these changes impact nutrition and physical activity.

The study revealed that over one-third of the participants were over 18 years old. This distribution correlates with the typical educational trajectory in Egypt, which consists of 6-11 years of basic education, followed by 3 years of preparatory education, 3 years of secondary education, and ultimately higher education. Support for these findings is provided by Shekhar et al. (2022), who reported that more than half of the participants in their study, conducted at a rural healthcare institute, were aged 17 years or older.

Consistent with these results, the National Center for Education Statistics (2024) indicated that the age range of university students is generally between 18 and 24 years. Pertaining to the gender distribution, the present study indicated that more than half of the participants were female. This observation may reflect the recent influx of male students into nursing education. However, these findings diverge from the results reported by Al-fatah et al. (2016), who noted that the majority of nursing students at Assiut University were female, with male representation at a mere 6.5%. Furthermore, a study by Nassar & Shaheen (2014) on health-promoting behaviors among nursing students in Jordan found that females constituted 76% of the sample, compared to 24% males.

Regarding the participants' nutritional habits, the current study found that more than half of the respondents skipped breakfast. This finding aligns with research conducted by Lee et al. (2023), which indicated that over two-thirds of the participants did not regularly consume breakfast. Additionally, findings from a study by Khan et al. (2024) emphasize a high prevalence of breakfast omission among university students in Bangladesh, particularly among females.

Such concerning trends may be attributed to factors like time constraints, as nursing students often juggle early morning classes, clinical rotations, or study commitments, leaving minimal time for meal preparation. Additionally, misconceptions regarding weight management may lead some students to erroneously believe that skipping breakfast aids in weight loss, despite existing evidence linking breakfast omission to negative metabolic health outcomes and increased likelihood of overeating later in the day. Regular breakfast consumption is essential for sustaining motivation and cognitive performance among students (Martin et al., 2024).

Regarding physical activity, the study indicated that the majority of nursing students exhibited poor levels of physical activity. This phenomenon may be explained by cultural beliefs and the academic demands inherent within the Egyptian educational framework, which can limit opportunities for exercise due to heavy study loads. Additionally, the pervasive use of computers and internet services may diminish student interest in physical activities, substituting traditional exercise with alternative leisure activities. Furthermore, insufficient access to sport facilities and equipment may further discourage participation in physical exercise.

These findings resonate with those of Nassar & Shaheen (2014), who reported that the highest mean score in lifestyle subscales pertained to spiritual growth, while the lowest was related to physical activity. This is also corroborated by Alkhawaldeh (2024) and Espada (2023), who found that fewer than half of university students reported engaging in physical activity.

Conversely, the study's findings do not align with a systematic review conducted by Kljajević et al. (2021), which included 21 studies with a total of 7,306 participants. Their analysis concluded that university students generally exhibited satisfactory levels of physical activity and fitness.

The analysis of the correlation between body mass index (BMI) and gender unveiled noteworthy distinctions concerning gender differences in BMI and physical characteristics. The study found that female nursing students presented a higher average BMI compared to their male counterparts, a finding consistent with various health-related literature indicating that female university students may engage less in physical activities and adopt less healthy eating habits during their time at university. This trend can be attributed to cultural factors, peer influences, and lifestyle choices that disproportionately affect females amid academic pressures and social dynamics.

The observation of slightly higher average weight among females, despite their elevated mean BMI, suggests potential differences in body composition. Females may exhibit higher body fat percentages than males at comparable BMIs due to physiological distinctions. Height discrepancies are expected, given biological patterns, as males typically possess greater height, contributing to variations in weight and BMI.

This aligns with research conducted by Hyska and Mersini (2023), which indicated that male students demonstrated superior nutritional habits relative to females. The study highlighted higher BMI levels among female students, a finding consistent with results observed among nursing students in Egypt.

In terms of comparative analysis regarding gender differences in nutritional habits and physical

activity levels, the data revealed several significant observations that underscore the discrepancies in dietary practices and physical activity engagement between male and female students. Both genders displayed a tendency to skip breakfast, with mean scores suggesting a prevalent trend of irregular breakfast consumption. This pattern can adversely affect metabolism and energy levels throughout the day.

Male students reported a mean score of 1.97 for three daily meals, while females scored slightly higher at 2.12, indicating that female students may exhibit more regular meal patterns, which could be beneficial for nutritional balance. Additionally, female students reported significantly higher mean scores for daily consumption of fruits (2.21) and vegetables (2.01) compared to their male peers (1.95 for fruits and 1.92 for vegetables), indicating a healthier dietary pattern among females which has consequential implications for overall health and well-being. Notably, Kaewpradup et al., (2024) included that the prevalence of inadequate fruit and vegetable intake remains notably high among university students.

The data further indicated that females had marginally higher scores for water consumption (1.97), which is critical for hydration and overall health. This agreed with Balado-Naves, & Suarez-Fernandez, (2023), who indicate women consume significantly more water compared to men.

However, there was also a slight increase in dessert consumption among females (1.67) compared to males (1.59), potentially indicating a preference for sweets, which could suggest unhealthy eating habits if this leads to excessive caloric intake.

These findings are corroborated by Al Sabbah et al. (2024), who reported a significant correlation between the intake of high-sugar beverages—such as milk, juices, soft drinks, and energy drinks—and an increased risk of overweight and obesity among female university students in the United Arab Emirates. Their findings also revealed a clear predilection for high-calorie, low-nutrient foods, including processed meats, sweets, and salty snacks. Moreover, the consumption of fast-food items such as burgers, fried chicken, fries, pizza, shawarma, chips, and noodles was significantly associated with increased body weight, particularly shawarma, which exhibited a notably high correlation with obesity and overweight statuses.

The analysis further revealed substantial differences in physical activity levels between male and female students, with male students achieving higher scores on the physical activity scale (16.077) compared to their female counterparts (15.65). This suggests that male students are more likely to engage in regular physical activities, which are often connected to improved physical health outcomes. These findings align with a cross-sectional study conducted by Jacob et al. (2020), which investigated the interplay between mental health and physical activity during the COVID-19 pandemic in the UK. The results indicated that gender differences significantly influenced exercise habits and BMI, with females participating less in physical activity relative to males. Similarly, Espada (2023) found that female university students exhibited lower levels of physical activity than their male peers.

The reported discrepancies imply that males are more likely to engage in structured exercise programs compared to females, who may encounter barriers such as cultural norms or insufficient access to safe environments for physical activity. There are indications that male students may integrate more physical activity into their daily routines than female students, potentially due to greater confidence in engaging in such activities and lesser concerns regarding social judgment.

Limitations

One significant limitation of the study is its reliance on self-reported data for dietary habits and physical activity levels, which can lead to response bias. Participants may overestimate their adherence to healthy eating or exercise routines due to social desirability, potentially resulting in inaccurate data. Additionally, the relatively small sample size may limit the study's generalizability to all nursing students across different universities or regions. These factors could skew the findings and affect the strength of the conclusions. Therefore, future research should consider using more objective measures to assess dietary and physical activity patterns more accurately.

Conclusion

In conclusion, the study highlights significant disparities in dietary habits and physical activity levels among nursing students at Beni-Suef University, particularly between genders. The prevalence of skipping breakfast and low physical activity indicates the need for targeted health promotion interventions in this population. Female students tend to demonstrate healthier dietary patterns, yet face challenges that contribute to higher BMI levels compared to males. Understanding these behaviors during this critical phase of life is essential for developing strategies to enhance nutritional practices and physical activity, ultimately promoting better health outcomes for nursing students as they transition into their professional roles.

Recommendation

Based on the findings of the study, the following recommendations are proposed to improve dietary habits and physical activity levels among nursing students:

- Health Promotion Campaigns: Implement targeted

educational programs focusing on the importance of regular meals, especially breakfast, and the benefits of physical activity. Workshops and seminars can provide practical tips and strategies for healthy eating and exercise.

- Nutrition Counseling: Offer personalized nutrition counseling for students to address specific dietary challenges they may face, encouraging them to develop balanced meal plans and make healthier food choices.
- Physical Activity Initiatives: Establish structured physical activity programs, such as fitness classes or sports clubs, that cater to diverse interests and encourage participation among students of all genders.
- Peer Support Groups: Create peer-led support groups that foster a positive environment for sharing experiences and challenges related to nutrition and exercise, promoting accountability and motivation.
- Incorporate Wellness into Curriculum: Integrate health and wellness topics into the nursing curriculum to emphasize the importance of self-care and personal health management for future healthcare professionals.
- Accessibility to Healthy Options: Work with campus dining services to ensure that healthy, affordable meal options are readily available, making it easier for students to make nutritious choices.
- Regular Assessment: Conduct periodic assessments of students' dietary habits and physical activity levels to monitor progress, identify areas of concern, and adjust interventions accordingly.

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Conflict of interest

All authors have no conflict of interest related to this study

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