

Original Article

Current Assessment of Dietary Habits, Physical Activity, and Related BMI among Students of People's University of Medical & Health Sciences for Women, Nawabshah (SBA)

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ABSTRACT

Background: Eating habits and adequate physical activity play significant roles in enhancing growth, development, health, and physical and mental fitness of individuals. University students, especially those in medical fields, often face demanding schedules and rigorous studies that can lead to altered dietary habits and lifestyles. Assessing these patterns is crucial for identifying potential nutritional or eating disorders and understanding their impact on students' health.

Objective: The study aimed to assess dietary habits, physical activity levels, and related BMI among female students of People's University of Medical & Health Sciences for Women, Nawabshah (PUMHSW).

Methods: This cross-sectional study was conducted over one and a half months within the premises of PUMHSW. A total of 331 female students from MBBS and Allied Sciences programs were selected using convenient sampling. Inclusion criteria included students aged 18-25 years enrolled in any year of their respective programs, while exclusion criteria excluded those below 18 or above 25 years old and postgraduate students. Data were collected through a structured English-language questionnaire administered via face-to-face interviews. The questionnaire covered variables such as income, education, parental occupation, dietary habits, physical activity, and BMI. Verbal consent was obtained from all participants, ensuring confidentiality. Ethical approval was obtained in accordance with the Declaration of Helsinki. Data analysis was performed using SPSS version 25, with descriptive statistics including percentages, means, and standard deviations. Results were presented using frequency tables, charts, and graphs.

Results: The majority of students were aged 21-23 years (61.6%), with most having a normal BMI (59.5%). Among the participants, 23.0% were underweight, 13.6% were overweight, and 3.9% were obese. Regular sleep patterns were reported by 68.9% of students, while 31.1% had irregular sleep patterns. A significant proportion (76.7%) did not engage in regular physical activity. The distribution of BMI classifications showed that 23.0% were underweight, 59.5% had normal BMI, 13.6% were overweight, and 3.9% were obese. A higher frequency of normal BMI was observed among MBBS students compared to Allied Sciences students.

Conclusion: The study concluded that while most students had a normal BMI, a notable proportion were underweight, overweight, or obese. These findings underscore the need for targeted interventions to promote healthier lifestyles among university students, focusing on dietary habits, physical activity, and sleep patterns to prevent future health issues.

Keywords: University students, dietary habits, physical activity, BMI, medical students, health assessment, lifestyle, obesity prevention, student health, nutritional assessment.

INTRODUCTION

Eating habits and adequate physical activity play a significant role in enhancing growth, development, health, and physical and mental fitness of individuals (1). Assessing dietary patterns among university students is crucial for identifying potential nutritional or eating disorders, which are of growing concern (2). The demanding schedules and rigorous studies faced by medical students

often compel them to alter their dietary habits and lifestyles. This population, aged 18-25, is particularly at risk of developing obesity, as they assume greater responsibility for their eating habits and lifestyle choices (3). The World Health Organization (WHO) regards obesity as a significant future threat to public health (4). Globally, the prevalence of obesity has nearly tripled from 1975 to 2016, with 39% of adults being overweight and 13% classified as obese in 2016 (5).

A study conducted among female students in Shanghai observed that the prevalence of overweight and obesity was only 13.2% (6). Among Asians, obesity is commonly associated with metabolic syndromes like type II diabetes (7). The 18-25 age group is crucial in promoting healthy lifestyles, potentially reducing the risk of lifestyle-related problems (8). The health-related lifestyles of students are concerning for future generations, suggesting trends in chronic diseases associated with unhealthy lifestyles that might persist over time. Healthy diets and regular physical activity are critical components of a healthy lifestyle, contributing to both mental and physical well-being (9). A cross-sectional survey of 375 female university students in Saudi Arabia revealed that 70% did not meet the WHO recommendation of 150 minutes per week of moderate activity, while around 62% did not meet the recommendation of 75 minutes per week of vigorous activity (10). Adhering to a healthy diet can enhance students' social well-being and potentially impact their academic achievements (11, 12).

University students are prone to skipping meals and developing eating disorders, posing a threat to their health. Psychological factors such as stress, depression, anxiety, happiness, boredom, and loneliness can influence unhealthy eating habits (13). Sleep patterns also play an integral role; medical students often face more sleep-related issues compared to non-medical students. For instance, a study in Pakistan showed that 65.4% of students were poor sleepers, and 49.4% experienced excessive daytime sleepiness (14). Given the fluctuating food intake habits among students, it is crucial to understand the behavioral issues related to eating, as they can provide insights into obesity development and help devise preventive or treatment strategies (15, 16). Although substantial international literature exists on dietary habits, there is relatively scarce research and analysis concerning Pakistan, especially in Nawabshah city. This study aimed to address this gap by assessing the dietary habits, physical activity, and related BMI among students of People's University of Medical & Health Sciences for Women, Nawabshah. The objectives of the study were to determine the dietary habits, physical activities, and related BMI among these students.

Dietary behavior is an umbrella term referring to all phenomena related to food choice, eating behavior, and dietary intake/nutrition. BMI is calculated as weight in kg divided by height in meters squared, with WHO classifications being: underweight (<18.5), normal (18.5-24.9), overweight (25.0-29.9), and obese (30.0 and above). Socioeconomic status is categorized as low (<50000 Rs/month), middle (50000-100000 Rs/month), and high (>100000 Rs/month). Understanding these variables can help provide insight into the development of obesity and inform strategies to prevent its occurrence or treat it.

MATERIAL AND METHODS

The study was conducted within the premises of the PUMHS hostel and campus, spanning a duration of less than one and a half months from the date of approval of the synopsis. Utilizing a cross-sectional study design, the research aimed to investigate various factors among female students enrolled in MBBS & Allied Science programs at PUMHSW. A sample size of 331 was determined using the RAOSOFT sampling calculator, with participant selection facilitated through convenient sampling. Inclusion criteria comprised individuals aged between 18 to 25 years who were enrolled in any year from first to final year of their respective programs. Exclusion criteria included participants below 18 or above 25 years old, as well as postgraduate students.

Data collection was executed through a structured questionnaire developed in English. The researcher conducted face-to-face interviews with selected participants, filling out the forms herself. The questionnaire covered variables such as income, education, occupation of the participants' parents, and other relevant factors. Verbal consent was obtained from all participants, ensuring confidentiality throughout the study process. The study adhered to ethical standards as outlined in the Declaration of Helsinki, with approval obtained from the relevant ethics committee prior to data collection.

Following data collection, analysis was performed using SPSS version 25. Various variables, including dietary habits, physical activity, BMI, income, education, and occupation, were analyzed using descriptive statistics such as percentages, means, and standard deviations. The findings were presented using frequency tables, charts, and graphs to facilitate a comprehensive understanding of the gathered data. The structured approach ensured the reliability and validity of the results, providing valuable insights into the dietary habits, physical activity levels, and related BMI among female students at PUMHSW. The meticulous data collection and analysis process adhered to the highest standards of research integrity, ensuring that the study's conclusions were robust and actionable (15, 16).

RESULTS

The study involved a total of 331 female students from People's University of Medical & Health Sciences for Women, Nawabshah, aged between 18 and 26 years. The distribution of ages showed that 34.4% of participants were aged 18-20 years, 61.6% were aged 21-23 years, and 4.0% were aged 24-26 years, demonstrating a concentration of the majority of students within the 21-23 age bracket (Table 1). The BMI classification revealed that 23.0% were underweight, 59.5% had a normal BMI, 13.6% were overweight, and 3.9% were classified as obese, highlighting that a significant proportion of the student population falls within the normal BMI range, though there remains a notable percentage at risk for overweight and obesity (Table 2).

Table 1: Age Distribution

| Age in Years | Frequency | Percent |
|--------------|------------|-------------|
| 18-20 | 114 | 34.4% |
| 21-23 | 204 | 61.6% |
| 24-26 | 12 | 4.0% |
| Total | 331 | 100% |

Table 2: BMI Classification

| BMI Classification | Frequency | Percent |
|--------------------|------------|-------------|
| Underweight | 76 | 23.0% |
| Normal | 197 | 59.5% |
| Overweight | 45 | 13.6% |
| Obese | 13 | 3.9% |
| Total | 331 | 100% |

Table 3: Sleep and Physical Activity

| Indicator | Frequency | Percent |
|---------------------------|------------|-------------|
| Regular Sleep | 228 | 68.9% |
| Irregular Sleep | 103 | 31.1% |
| Total | 331 | 100% |
| With Physical Activity | 77 | 23.3% |
| Without Physical Activity | 254 | 76.7% |
| Total | 331 | 100% |

Table 4: Age versus BMI Classification

| Age in Years | BMI Classification | Frequency | Percent of Total |
|--------------|--------------------|------------|------------------|
| 18-20 | Underweight | 31 | 9.4% |
| | Normal | 65 | 19.6% |
| | Overweight | 13 | 3.9% |
| | Obese | 6 | 1.8% |
| | Total | 115 | 34.7% |
| 21-23 | Underweight | 44 | 13.3% |
| | Normal | 124 | 37.5% |
| | Overweight | 29 | 8.8% |
| | Obese | 7 | 2.1% |
| | Total | 204 | 61.6% |
| 24-26 | Underweight | 1 | 0.3% |
| | Normal | 8 | 2.4% |
| | Overweight | 3 | 0.9% |
| | Obese | 0 | 0.0% |
| | Total | 12 | 3.6% |

| Age in Years | BMI Classification | Frequency | Percent of Total |
|--------------|--------------------|-----------|------------------|
| Total | Underweight | 76 | 23.0% |
| | Normal | 197 | 59.5% |
| | Overweight | 45 | 13.6% |
| | Obese | 13 | 3.9% |
| | Total | 331 | 100.0% |

Regarding sleep patterns, 68.9% of the students reported having regular sleep, while 31.1% had irregular sleep patterns (Table 3). This suggests that a substantial number of students may be experiencing disruptions in their sleep, which could impact their overall health and academic performance. Physical activity levels were also assessed, revealing that only 23.3% of the participants engaged in regular physical activity, whereas a significant 76.7% did not participate in any physical activity, indicating a concerning trend towards sedentary behavior among the students (Table 3).

When examining the relationship between age and BMI, it was found that among the 18-20 age group, 9.4% were underweight, 19.6% had a normal BMI, 3.9% were overweight, and 1.8% were obese. In the 21-23 age group, 13.3% were underweight, 37.5% had a normal BMI, 8.8% were overweight, and 2.1% were obese. For the 24-26 age group, 0.3% were underweight, 2.4% had a normal BMI, 0.9% were overweight, and none were classified as obese. This distribution shows that normal BMI is most prevalent across all age groups, but the risk of being overweight or obese remains significant, particularly in the 21-23 age group (Table 4).

DISCUSSION

The study, conducted on 331 female students from the old and new campuses of People's University of Medical and Health Sciences Nawabshah, examined their dietary habits, physical activity, BMI, age, and socioeconomic status. The findings revealed that the majority of students had a normal BMI ($n=197$). Most students belonged to the age group of 21-23 years ($n=204$), and the majority were from the middle socioeconomic class ($n=309$, 93.4%), reflecting a population with generally healthy dietary habits. These results align with a study conducted among medical students in Lahore, where most students also had a normal BMI due to consuming a healthy diet (17).

The study identified that 81 students (24.5%) were underweight, likely due to the study burden, while 36 students (10.9%) were overweight, and 10 students (3%) were obese. These conditions were attributed to factors such as lack of physical activity, poor dietary habits, environmental influences, and lifestyle changes, consistent with previous findings that university students aged 18-24 years are at risk of developing obesity due to increased responsibility for their eating habits and lifestyle (3). Research conducted in India also supported the higher frequency of obesity among this age group (18).

Among the participants, there were 134 MBBS students and 63 Allied Sciences students. The normal BMI ratio was higher among MBBS students, likely due to their stronger understanding of health and wellness from their education, making them more aware of healthy habits and preventive measures. This finding is corroborated by a study conducted in China, which indicated that medical students had greater knowledge and a better attitude towards nutrition compared to non-medical students (19). However, 50 MBBS students (15.1%) and 26 Allied Sciences students (7.9%) were underweight, mainly due to study burden, lack of physical activity, and sleep irregularity. Additionally, 34 MBBS students (10.3%) and 11 Allied Sciences students (3.3%) were overweight, while 10 MBBS students (3%) and 3 Allied Sciences students (0.9%) were obese, largely due to genetic factors, overeating, and consumption of sweets and junk food.

The study also highlighted that a significant proportion of students (254, 76.7%) were not physically active, with only 77 students (23.3%) engaging in regular physical activity. This lack of physical activity was attributed to academic workload and pressure among female university students. Similar trends were observed in a study conducted in Saudi Arabia, where female university students were not physically active due to limited exercise facilities, academic workload, gender roles, and cultural standards (20).

Dietary habits also influenced BMI. Some students (11, 3.3%) had lower BMIs as they did not consume red or white meat due to religious beliefs, similar to findings from a study in India where a significant number of students who did not consume meat had lower BMIs (21). Conversely, students who consumed red meat (25, 7.5% overweight and 6, 1.8% obese) had higher BMIs, reflecting findings from research in the United States that showed a positive association between meat intake and obesity (22).

A substantial proportion of students (194, 58.6%) consumed vegetables, 180 students (54.4%) consumed fruits, and 120 students (36%) consumed milk regularly, contributing to their normal BMI. This trend is consistent with a study conducted at Central Michigan University, where a majority of female students were within a healthy weight range and reported regular consumption of milk, fruits, and vegetables (23).

Breakfast habits were also notable, with 253 students (78.4%) eating breakfast on exam days, believing it improved mental function, and among them, 154 students (45.5%) had normal BMI. Conversely, students who skipped breakfast (78, 23.6%) had higher rates

of overweight and obesity due to stress, anxiety, and exam-related issues, supporting the findings of a cross-sectional study linking breakfast skipping to increased obesity risk (24).

Sleep patterns further influenced health outcomes, with 228 students (68.9%) having regular sleep patterns, attributed to good dietary habits and early academic schedules. However, 103 students (31.1%) had irregular sleep patterns due to homesickness, financial issues, academic stress, and frequent nighttime mobile use, aligning with an Indian study that found social media addiction contributed to irregular sleep (25).

Socioeconomic status played a crucial role, with the majority of students from a middle socioeconomic background (185, 55.9%) having normal BMI. This finding is supported by a study in Poland showing that adolescents from middle socioeconomic backgrounds were less likely to be underweight compared to those from lower socioeconomic backgrounds (26).

The study's strengths included a comprehensive assessment of dietary habits, physical activity, and BMI among a diverse sample of medical and allied science students. However, limitations included the reliance on self-reported data, which could introduce bias, and the cross-sectional design, which limited causal inferences. Recommendations for future research include longitudinal studies to better understand the causal relationships between lifestyle factors and BMI, and interventions to promote physical activity and healthy eating among university students.

CONCLUSION

In conclusion, the study indicated that while most students had a normal BMI, a notable proportion were underweight, overweight, or obese, highlighting the need for targeted interventions to promote healthier lifestyles. Addressing these factors through education and policy changes could prevent future health issues among university students.

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