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Original Research Article

Dietary habits and physical activity patterns among medical students in Northern Kerala: a cross-sectional study

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ABSTRACT

Background: The prevalence of non-communicable diseases (NCDs) in India is on the rise, significantly influenced by poor dietary habits and physical inactivity. Medical students, though academically aware of healthy lifestyles, may not necessarily adhere to them in practice. Objectives were to assess dietary habits among MBBS students of a medical college in Northern Kerala and to evaluate physical activity patterns among the same group.
Methods: A descriptive cross-sectional study was conducted among 113 second-year MBBS students at KMCT Medical College, Kozhikode, Kerala, during August-October 2024. A structured, pre-tested questionnaire with 40 items in English was used. It assessed socio demographic data, dietary habits, and physical activity levels. Data were analyzed using SPSS and results presented as percentages and frequencies.
Results: The mean age of participants was 21.76±0.92 years; 71.7% were females. While 92% were aware of lifestyle diseases and 98.2% knew the impact of unhealthy foods, 66.4% admitted following an unhealthy diet, and 72.6% expressed a need to improve it. About 52.2% never skipped breakfast, while 87.6% never skipped dinner. Junk food intake was common (98.2%), and only 14.2% consumed fruits daily. Regarding physical activity, 64.6% reported being active, mostly via walking or cycling (63.7%). However, 48% had sedentary time >10 hours/day and 22.1% reported no activity. Laziness (46%) was a major barrier.
Conclusions: Despite high awareness, students demonstrated poor dietary and physical activity behaviors. Structured interventions are necessary to bridge the gap between knowledge and practice, especially among future healthcare providers.

Keywords: Dietary habits, Kerala, Lifestyle diseases, Medical students, Physical activity

INTRODUCTION

Non-communicable diseases (NCDs) such as cardiovascular diseases, diabetes mellitus, obesity, and hypertension have emerged as the leading causes of mortality and morbidity globally. According to the World Health Organization (WHO), NCDs account for approximately 74% of all global deaths, with low- and middle-income countries like India shouldering a significant portion of this burden.[1] In India alone, NCDs are responsible for over 60% of total deaths annually.[2] A major proportion of these conditions is attributed to modifiable lifestyle factors, particularly unhealthy dietary habits and physical inactivity.[3]

The increasing shift from traditional diets rich in whole grains, fruits, and vegetables to processed and fast foods, high in sugar, salt, and trans fats, is a critical contributor to the surge in NCDs.[4] Simultaneously, the rise in sedentary behavior due to urbanization, increased screen time, and academic stress has exacerbated the problem.[5] This nutritional and physical inactivity transition is

particularly pronounced among youth and young adults, especially those in professional educational streams such as medicine.[6]

Medical students are the future healthcare providers who are expected to not only counsel patients on adopting a healthy lifestyle but also lead by example. However, research has consistently shown that medical students often fail to practice what they preach.[7] The transition into medical education is a stressful and demanding phase characterized by irregular schedules, academic overload, emotional strain, and lack of time for self-care.[8] These factors can contribute to erratic meal patterns, increased reliance on convenience foods, and poor physical activity levels.[9]

Several Indian and international studies have shown that medical students exhibit poor dietary patterns, including frequent skipping of meals, low intake of fruits and vegetables, and high consumption of junk food and sugary beverages[10,11] A study among medical students in Kolkata found that more than 60% of students skipped breakfast regularly and consumed fast food at least 2-3 times a week.[12] Similarly, a cross-sectional study in Karnataka reported that only 20% of medical students met the recommended intake of fruits and vegetables.[13] These unhealthy behaviors often persist into adulthood, increasing the lifetime risk for metabolic syndrome and other NCDs.[14]

Physical inactivity is another concerning trend. WHO recommends at least 150 minutes of moderate-intensity aerobic physical activity per week for adults, yet a large proportion of medical students fail to meet these guidelines.[15] The ICMR-INDIAB study revealed that more than 50% of Indians are physically inactive, with medical students showing similar patterns.[16] Sedentary lifestyles, facilitated by long hours of sitting during lectures, studying, or using electronic devices, further contribute to poor health outcomes.[17]

Interestingly, awareness of healthy lifestyles among medical students is generally high. Most students understand the risks of unhealthy eating and sedentary behavior, yet awareness does not necessarily translate into practice. This “knowledge-behavior gap” has been observed in multiple studies and is often attributed to personal, environmental, and systemic barriers.[18] These include time constraints, lack of access to healthy food options, peer influence, and insufficient motivation.[19,20]

In Kerala, despite being a relatively health-literate state, studies suggest that young adults, including medical students, are increasingly adopting unhealthy lifestyle habits.[21] The urbanization and westernization of diets, academic stress, and limited institutional efforts toward lifestyle promotion contribute to this shift. Given the critical role that future doctors play in public health, it is imperative to understand and address these lifestyle behaviors during their formative years.[22]

Hence, this study was undertaken to assess the dietary habits and physical activity patterns among second-year MBBS students in a medical college of northern Kerala. By identifying prevailing behaviors and the extent of the knowledge-practice gap, this study aims to inform the design of targeted interventions and curricular reforms to foster healthier lifestyles among medical students.

Objectives

To assess dietary habits among MBBS students of a medical college in Northern Kerala. To evaluate physical activity patterns among the same group.

METHODS

A descriptive cross-sectional study was conducted over a period of 3 months from August 2024 to October 2024 at KMCT Medical College, located in Kozhikode district, Kerala, India. The study population comprised all second-year MBBS students enrolled in the regular batch, totaling 113 participants. A convenient sampling method was employed to recruit participants.

Data collection was carried out using a semi structured, pre-tested questionnaire prepared in English, consisting of 40 items. The questionnaire was designed to capture detailed information on socio demographic characteristics, dietary patterns and physical activity levels.

Prior to data collection, the purpose and objectives of the study were clearly explained to the participants. Written informed consent was obtained from each participant, ensuring that participation was voluntary and that confidentiality would be strictly maintained throughout the research process.

Collected data were coded and entered into Microsoft Excel and subsequently analyzed using Statistical Package for the Social Sciences (SPSS) software. Descriptive statistics were used, and the findings were presented in the form of frequencies and percentages.

Ethical considerations

The study was ethically approved. To maintain confidentiality, personal identifying information was not collected from the participants. Informed consent was obtained from all students, who were made aware of the voluntary nature of their participation and the confidentiality of their responses.

RESULTS

The present study included 113 second-year MBBS students from KMCT Medical College, Kozhikode. The mean age of the participants was 21.76±0.92 years. Of the total students surveyed, 81 (71.7%) were females and 32 (28.3%) were males. In terms of religious distribution,

44.2% of participants identified as Muslim, 38.9% as Hindu, and 14.2% as Christian. More than half of the students (56.7%) were residing in hostels at the time of the study.

Dietary patterns

Meal skipping was analyzed as a marker of dietary regularity. It was observed that 52.2% of the students never skipped breakfast, 64.6% never skipped lunch, and a significantly higher proportion (87.6%) never skipped dinner, indicating a tendency to maintain evening meals more consistently. Despite this, 69.9% of the participants reported consuming snacks between meals, and 33.6% admitted to overeating during periods of stress.

Awareness regarding the consequences of unhealthy food was notably high. Nearly all participants (98.2%) acknowledged the health risks associated with consuming junk food, soft drinks, and sugary items. However, a considerable gap was found between awareness and actual practice, as 66.4% of the students recognized their diet as unhealthy, and 72.6% felt the need to improve it.

Regarding the frequency of specific food items consumed, cereals formed a major component of the students' diets, with 57.5% consuming them almost daily and 15.9% more than once daily. Pulses were also a common component, with 29.2% consuming them daily and 30.1% on a weekly basis. About 38% reported eating vegetables almost every day, while 8% had them daily. However, fruit consumption was relatively low, with only 14.2% of participants consuming fruits daily and 5.3% multiple times per day. Conversely, 7.1% reported never consuming fruits at all.

Egg consumption was also moderate, with 42.5% consuming them 1-2 times a week, and 26.5% consuming them 3-5 times weekly. Fish and seafood, staples in the regional diet, were consumed 1-2 times per week by 39.8% of participants. Approximately 23.9% reported consuming meat almost daily. On the other hand, nutritious snacks such as nuts and dried fruits were less commonly consumed- only 5.3% had them almost daily and 3.5% multiple times a day, while 56.6% reported consuming them less than once a week or never.

Intake of processed and sugary foods was also assessed. Junk food consumption was alarmingly high, with 34.5% of students consuming it 1-2 times per week and 24.8% 3-5 times per week. Only 1.8% reported never consuming junk food. Instant noodles and pasta were consumed monthly by 39.8% of students and 13.3% consumed them weekly. Regarding sugary foods, 36.3% consumed them 3-5 times per week, and 21.2% consumed them almost every day. Hot beverages such as tea and coffee were commonly consumed, with 50.4% consuming them almost every day and 20.4% more than twice daily.

Soft drink consumption was relatively moderate, with 59.3% consuming them 1-2 times a month and 17.7% 1-2 times a week. Daily soft drink intake was rare. Energy drink use was infrequent- 68.1% never consumed them, while only 1.8% reported daily use.

Physical activity and sedentary behavior

In terms of physical activity, 64.6% of students reported engaging in regular physical activity. Among these, the most common forms included walking and cycling, reported by 63.7% of participants. However, only 37.1% of students were physically active 4-5 days a week, while 40.7% engaged in activity 1-2 times weekly. A substantial proportion (22.1%) did not engage in any physical activity. Laziness was cited as the primary barrier to physical activity by 46% of those who were inactive.

Sedentary behavior was also significant among participants. About 48% of students reported spending more than 10 hours a day in sedentary activities such as sitting, reading, attending classes, or using electronic devices. When assessing their commuting patterns, 46.9% reported walking to college, while 49.5% relied on motor vehicles, indicating a near-equal division between active and passive travel modes.

Interestingly, despite these findings, a majority of students (63.7%) perceived their lifestyle- both diet and physical activity- as satisfactory. Only 3.5% of participants reported smoking, and 4.4% reported alcohol consumption, indicating low prevalence of these habits. Furthermore, 49.5% traveled using motor vehicles, and 46.9% walked to college.

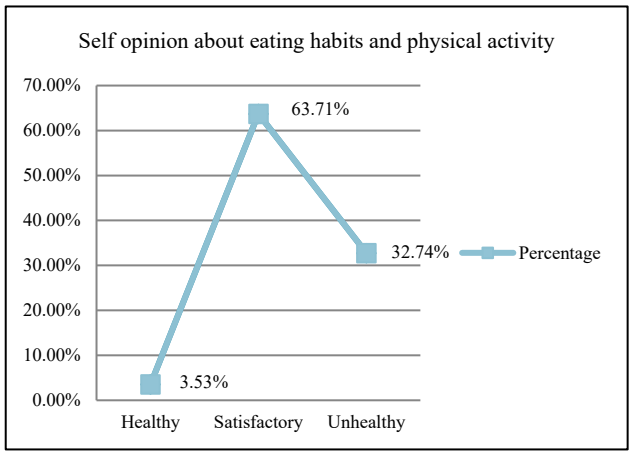

Figure 1: Self opinion about eating habits and physical activity.

Table 1: Questions related to dietary habit.

Questions	Yes (%)	No (%)
Do you take snacks in between meals?	69.9	30.1
Do you prefer non-vegetarian over vegetarian?	26.5	73.5
Are you aware of the consequences of having junk food, soft drinks, or sugar?	98.2	1.8
Do you have the habit of overeating during stress?	33.6	66.4
Do you take alcohol?	4.4	95.6
Do you have the habit of smoking?	3.5	96.5
Do you think you follow an unhealthy diet?	66.4	33.6
Are you aware of lifestyle diseases and their consequences?	92.0	8.0
Do you feel you need to change your diet?	72.6	27.4

Table 1 highlights that 69.9% took snacks in between meals, while 33.6% admitted to overeating under stress. A small percentage consumed alcohol (4.4%) or smoked (3.5%). While 92% were aware of lifestyle diseases and their consequences, only 63.7% believed they followed a healthy diet, and 72.6% felt they needed dietary modifications.

Lifestyle awareness and practices

Responses to lifestyle awareness questions revealed that a vast majority of students (92%) were aware of lifestyle diseases and their long-term consequences. However, 66.4% acknowledged that they did not follow a healthy diet, and 72.6% felt a strong need to modify their eating habits. Preferences for non-vegetarian over vegetarian food were seen in 26.5% of participants.

DISCUSSION

This study offers crucial insights into the dietary and physical activity patterns of medical students in northern Kerala, highlighting a significant gap between knowledge and practice. Although a vast majority of participants acknowledged the importance of healthy diet and regular exercise, these beliefs did not consistently translate into healthy behaviors.

Such a disconnect is echoed in studies from other regions. For example, a study in Pakistan reported similar findings where both medical and non-medical students demonstrated high awareness of healthy lifestyles but poor adherence in practice.[23] Our study found that while over 90% of students recognized the impact of diet and exercise on lifestyle diseases, 66.4% still followed unhealthy dietary practices- emphasizing the widely observed gap between cognition and action.

The dietary patterns observed in our study- 98.2% consuming junk food and only 14.2% reporting daily fruit intake- are consistent with findings from Eastern India, South India, and international studies in Poland and Serbia, all of which documented suboptimal dietary behaviors among university and medical students.[24,25]

Physical activity levels, although slightly better than some previous Indian reports, remain inadequate. Around 22.1% of our participants reported not engaging in any form of physical activity, primarily due to laziness or lack of motivation. This corroborates earlier findings by Maheshwari et al and Chatterjee et al, who identified academic stress, lack of time, and low intrinsic motivation as key barriers to physical activity among Indian medical students.[26,27]

Our findings also mirror those from MES Medical College in Kerala, where high levels of junk food intake and sedentary behaviors were observed among medical students.[28] Alarmingly, nearly half of our participants reported sedentary behavior of more than 10 hours daily, a trend that poses long-term risks for NCDs, even during early adulthood.[29,30]

These results are concerning, given that medical students are future healthcare providers expected to model healthy behaviors. The persistence of poor lifestyle choices despite adequate knowledge suggests that awareness alone is insufficient; behavior change requires structured support, motivation, and environmental modifications.

CONCLUSION

Despite high levels of awareness, this study reveals that medical students in northern Kerala are not practicing healthy lifestyle behaviors. The high prevalence of junk food consumption, low fruit and vegetable intake, insufficient physical activity, and prolonged sedentary behavior calls for immediate attention.

To bridge the gap between knowledge and practice, lifestyle medicine should be integrated into the medical curriculum, promoting awareness and behavior change from an early stage. Structured health promotion activities like wellness campaigns and fitness challenges can foster a culture of healthy living on campus. Improving the campus food environment by offering nutritious options and limiting junk food is essential. Behavioral change can be further supported through peer mentoring and motivational interventions. Regular health screenings and access to counselling services will help

identify risks early and guide students accordingly. Additionally, digital tools such as health apps can be used to track habits and encourage sustained lifestyle improvements.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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