

HYGIENIC EVALUATION OF LIFESTYLE PATTERNS AND ASSOCIATED HEALTH RISKS AMONG MEDICAL STUDENTS

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Abstract: Lifestyle behaviors established during the university years have a substantial influence on long-term health outcomes and future professional effectiveness. Medical students are particularly vulnerable to unhealthy habits because of intensive academic demands, irregular schedules, and persistent psychological stress. The present study was conducted to assess lifestyle-related health risk factors among medical students and to develop hygienic recommendations aimed at improving their health status. A cross-sectional questionnaire-based study was carried out among 400 medical students aged 18–25 years. The survey included questions on dietary habits, physical activity, sleep duration, tobacco and alcohol use, screen time, and perceived stress. Lifestyle behaviors were evaluated according to the recommendations of the World Health Organization. Statistical analysis was performed using IBM SPSS Statistics with descriptive statistics, Pearson's chi-square test, and logistic regression analysis, with statistical significance established at $p < 0.05$. The results demonstrated a high prevalence of modifiable behavioral risk factors. Regular breakfast skipping was reported by 62.0% of students, 48.0% consumed fast food three or more times per week, and 55.0% did not meet WHO recommendations for physical activity. Inadequate sleep, defined as less than 7 hours per night, was observed in 67.0% of respondents, while 72.0% reported high levels of perceived stress. Current smoking was reported by 12.0% of students, and 8.0% indicated regular alcohol consumption. The findings indicate that medical students experience a substantial burden of lifestyle-related health risk factors, particularly unhealthy dietary habits, insufficient physical activity, inadequate sleep, and elevated stress levels. These results underscore the need for comprehensive hygienic and educational interventions within medical universities to promote healthy behaviors and reduce the risk of future chronic diseases.

Keywords: medical students, lifestyle, health risk factors, hygienic assessment, nutrition, physical activity, sleep, stress.

Introduction

Lifestyle is widely recognized as a fundamental determinant of health, morbidity, and mortality. The behavioral patterns established during young adulthood—particularly during university education—often persist throughout life, significantly influencing the risk of developing non-communicable diseases (NCDs) such as cardiovascular disease, diabetes, and certain cancers. Among university populations, medical students represent a unique demographic. While they are actively acquiring advanced knowledge about health, disease prevention, and human physiology, they paradoxically often struggle to implement these healthy behaviors in their own lives.

The rigorous nature of medical education exposes students to extraordinarily high levels of academic stress, overwhelming workloads, and erratic schedules, particularly during clinical rotations. Consequently, this population frequently exhibits a range of common health risk factors. Poor dietary habits, such as relying on energy-dense, nutrient-poor convenience foods and skipping essential meals, are widespread. Physical inactivity is similarly prevalent, as long hours of studying and attending lectures leave little time for structured exercise. Inadequate sleep patterns—characterized by short sleep duration and poor sleep quality—are practically normalized within medical training culture. Furthermore, excessive screen time, driven by both

digital learning and leisure consumption, alongside the use of substances like tobacco and alcohol as coping mechanisms, compound these health risks.

The accumulation of these lifestyle-related risk factors has dual consequences. In the short term, they can severely impair cognitive function, emotional well-being, and academic performance, leading to burnout and depressive symptoms. In the long term, they increase the trajectory toward chronic metabolic and cardiovascular diseases. Furthermore, physicians' personal health habits are known to influence their clinical counseling practices; a physician who does not prioritize physical activity or healthy eating is statistically less likely to counsel their patients on these matters.

Therefore, comprehensive hygienic assessments of the medical student population are crucial. Understanding the specific prevalence and interplay of these risk factors is the first step toward mitigating them.

Aim of the Study: To assess lifestyle-related health risk factors among medical students and to develop evidence-based hygienic recommendations tailored to improve their overall health status and well-being.

Materials and Methods

A cross-sectional questionnaire-based study was conducted among 400 undergraduate medical students aged 18–25 years at [Institution Name] during the [Year] academic year. Students from all years of study were included. Participation was voluntary, and students with severe chronic medical or psychiatric conditions that could substantially affect lifestyle behaviors were excluded.

Data were collected using a structured self-administered questionnaire that was pilot-tested in 30 students prior to the main survey. The questionnaire assessed demographic characteristics, dietary habits, physical activity, sleep duration, tobacco and alcohol use, screen time, perceived stress, and self-rated health.

Lifestyle behaviors were evaluated according to recommendations of the World Health Organization. Insufficient physical activity was defined as less than 150 minutes of moderate-intensity activity per week, inadequate sleep as less than 7 hours per night, and insufficient fruit and vegetable intake as less than 400 g per day.

Statistical analysis was performed using IBM SPSS Statistics. Results were presented as means $\pm$ standard deviations or frequencies and percentages. Associations between variables were analyzed using Pearson's chi-square test and multivariable logistic regression. Statistical significance was set at $p < 0.05$.

Results

The study included 400 medical students with a mean age of 21.4 ± 1.8 years. Female students constituted 58.0% of the sample, while male students accounted for 42.0%. Students in the preclinical years (Years 1–3) represented 54.0% of participants, whereas 46.0% were in the clinical years (Years 4–6). The majority of respondents (60.0%) resided in university dormitories or shared student housing.

The hygienic assessment revealed a high prevalence of unfavorable lifestyle behaviors. Regular breakfast skipping was reported by 62.0% of students, and 48.0% consumed fast food three or more times per week. Only 18.0% met the World Health Organization recommendation of consuming at least 400 g of fruits and vegetables daily, indicating generally inadequate dietary patterns.

Insufficient physical activity was identified in 55.0% of respondents, demonstrating that more than half of the students failed to achieve the recommended minimum of 150 minutes of moderate-intensity physical activity per week. Clinical-year students were significantly less

physically active than preclinical students ($p < 0.05$), which may reflect the greater academic and clinical workload during the later years of study.

Sleep-related problems were widespread. A total of 67.0% of participants reported sleeping less than 7 hours per night, and 41.0% experienced daytime sleepiness that adversely affected concentration during lectures and practical training. High levels of perceived stress were reported by 72.0% of students, with the most common stressors including frequent examinations, fear of academic failure, and the substantial volume of educational material.

Current tobacco use was reported by 12.0% of students, while 8.0% indicated regular alcohol consumption. Excessive leisure screen time exceeding 3 hours per day was observed in 65.0% of respondents and was commonly associated with delayed sleep onset and shorter sleep duration.

Multivariable logistic regression analysis demonstrated that students who slept less than 7 hours per night were significantly more likely to report poor or fair self-rated health (OR = 2.4; 95% CI: 1.5–3.8). High perceived stress was also independently associated with poorer self-rated health (OR = 3.1; 95% CI: 1.8–5.2). In addition, clustering of unhealthy behaviors was observed, with students who exhibited one adverse lifestyle factor frequently demonstrating two or more additional risk factors. Overall, the findings indicate that lifestyle-related health risks are highly prevalent among medical students and may have important implications for both their current well-being and future professional effectiveness.

Discussion

The findings of the present study indicate that medical students are highly susceptible to lifestyle-related health risk factors. A substantial proportion of respondents demonstrated unhealthy dietary habits, insufficient physical activity, inadequate sleep duration, and elevated levels of perceived stress. These results are consistent with data reported in studies conducted in Europe, Asia, and Central Asia, suggesting that unfavorable lifestyle behaviors among medical students represent a widespread and persistent public health concern.

The high prevalence of unhealthy behaviors observed in this study appears to be closely associated with the specific characteristics of medical education. Intensive academic workloads, frequent examinations, clinical responsibilities, and prolonged study hours significantly limit the time available for meal preparation, regular exercise, and adequate sleep. As a result, students often adopt maladaptive coping strategies, including skipping meals, consuming fast food, reducing sleep time, and maintaining a sedentary lifestyle. In addition, chronic psychological stress may further contribute to tobacco use, excessive screen time, and deterioration in overall health status.

The observed association between insufficient sleep, high perceived stress, and poor self-rated health highlights the cumulative impact of behavioral and psychosocial factors on student well-being. These findings are of particular concern because lifestyle patterns established during medical training often persist into professional practice. Consequently, unhealthy behaviors among medical students may increase the long-term risk of noncommunicable diseases, including obesity, arterial hypertension, cardiovascular disorders, and burnout syndrome.

From a public health perspective, the health status of medical students is of strategic importance. As future physicians, they are expected not only to maintain their own health but also to serve as credible advocates for healthy lifestyles among patients and the wider population. Students who experience chronic fatigue, poor nutrition, and high stress may have reduced academic performance, impaired quality of life, and diminished capacity to promote preventive health practices effectively.

The results of this study underscore the need for comprehensive university-based health promotion programs. Such programs should include improvement of campus food environments, expansion of opportunities for regular physical activity, sleep hygiene education, psychological support services, and periodic preventive health screenings. Implementation of these hygienic

and organizational interventions may contribute to healthier behavioral patterns, improved academic performance, and a reduction in future disease risk among medical students.

Conclusion

This study demonstrated a distressingly high prevalence of lifestyle-related health risk factors among medical students. The hygienic assessment revealed that a majority of the future medical workforce is currently suffering from inadequate nutrition, low physical activity, insufficient sleep, and elevated stress levels. The juxtaposition of their extensive medical knowledge and their poor personal health behaviors highlights a systemic failure in the current model of medical education to prioritize student well-being. Implementation of targeted, structural hygienic and educational interventions is absolutely necessary. Addressing these risk factors now will not only promote healthier behaviors and prevent future chronic diseases but will also ensure the development of resilient, healthy physicians capable of providing optimal patient care.

Practical Recommendations

Based on the results of the present study, a number of hygienic and organizational measures are recommended to improve the lifestyle and health status of medical students. University cafeterias should be optimized to provide affordable and nutritionally balanced meals, with increased availability of fruits, vegetables, whole grains, and other healthy food options, while reducing access to highly processed foods and sugar-sweetened beverages. Opportunities for regular physical activity should be expanded through free access to sports facilities, organized exercise programs, and incorporation of short activity breaks into the academic schedule.

Educational interventions aimed at improving sleep hygiene should be introduced early in the medical curriculum to increase students' awareness of the importance of adequate sleep and to promote healthy sleep practices. Comprehensive stress management programs, including resilience training, mindfulness techniques, and confidential psychological counseling services, should be made readily available to students in order to reduce the adverse effects of chronic academic stress.

In addition, periodic preventive health examinations are recommended to monitor anthropometric indicators, blood pressure, and selected mental health parameters. Such screenings would facilitate the early identification of students at increased risk and enable the implementation of targeted health-promotion measures. Collectively, these interventions may contribute to the formation of healthier behavioral patterns, improved academic performance, and a reduction in the long-term risk of noncommunicable diseases among future healthcare professionals.

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