

Evaluation of Eating Practices and Physical Activity among Postgraduate Medical Trainees at Aga Khan University Hospital

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ABSTRACT

Background: Postgraduate medical residency programs are laborious, time-intensive, and physically, intellectually, and emotionally demanding. These challenges can lead trainees to neglect their own health and well-being, increasing the risk of burnout and other health problems. Therefore, prioritizing physicians' personal health is of great importance.

Objective: This study evaluates eating practices and physical activity levels among postgraduate medical education (PGME) trainee physicians.

Methods: This cross-sectional study was conducted by the Family Medicine Department among postgraduate medical education (PGME) trainees at Aga Khan University Hospital in Karachi from October 2020 to September 2021. In this study, 250 participants were selected from different departments, including surgery, medicine, pediatrics, gynecology, and family medicine, using convenience sampling. Data was analyzed using SPSS-16.

Results: Among the participants, 4.8% were found underweight, 66% with normal body mass index (BMI), 26% with overweight, and 3.2% with obesity. The majority of participants consumed fewer than the recommended daily servings of food groups, including 1-3 grains per day (74%) and 1 fruit serving per day (57.6%). Also, only 18.4% of participants had the FDA-recommended daily vegetable intake. Most participants (46.8%) had 3-5 glasses of water per day, and around a quarter (28%) reported never skipping breakfast. Physical activity among the participant trainees was found to be worrisome, as only 12.8% were doing adequate daily vigorous-intensity physical activity, and only 4.4% were doing adequate daily moderate-intensity physical activity. Most participants (51%) were doing only light-intensity physical activity.

Conclusion: The present study concluded that eating practices and physical activity among postgraduate medical trainees were compromised. Thus, adequate diet and physical activity should be incorporated into trainee physicians' daily routine to improve their physical and mental health, as well as their work performance and patient care.

Keywords: Postgraduate medical trainees, eating habits, physical activity, obesity, physicians, lifestyle modification, resident wellness.

INTRODUCTION

Physicians have long been known to prioritize their professional and personal obligations over their own health. The rigorous demands of the medical profession — including long working hours, emotional stress, and cognitive overload — often lead to neglect of personal well-being. In response, several medical associations have begun to recognize the importance of physician health and have developed programs to address it [1].

Numerous studies emphasize that physicians who maintain healthy behaviors themselves are more likely to counsel their patients effectively on similar practices [2]. It is observed that physicians who follow a healthy diet and engage in regular exercise are more confident in counseling their patients about healthy lifestyles. However, the available data indicate that many physicians struggle to follow their own recommendations. Burnout, unhealthy eating, and reduced engagement in physical activity have been commonly reported among health

care professionals, especially postgraduate trainee doctors [3, 4].

In Pakistan, healthcare professionals face multiple obstacles to achieving a healthy lifestyle, including limited access to nutritious food at the workplace, busy clinic schedules, and a lack of time for physical activity both during and outside working hours [5].

Although the health of physicians has been emphasized in many recent studies, the main focus has remained on their mental health and burnout. Few studies have examined physicians' health-related behaviors, such as diet and physical activity [1, 2].

Postgraduate medical trainees are more prone to compromised preventive health behaviors than consultants and faculty, due to their hectic clinical responsibilities and educational activities. All these factors contribute to preventing them from attaining a healthy daily routine. [3, 4].

In the context above, it is very important to explore health behaviors among postgraduate medical trainees, who are a more challenging subgroup among physicians. Providing a tailored intervention that addresses specific

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requirements and challenges can improve their personal health and professional performance.

Among the group of health behaviors, our study mainly focuses on two aspects: diet and physical activity, which are foundational factors for cognitive function, emotional stability, and the prevention of chronic diseases. Poor diet and lack of physical activity can directly affect trainee physicians' performance and, in turn, the quality of care they provide to their patients [5-7].

Unlike international studies that focus on diet and exercise among trainee physicians, only a few South Asian studies have been found to evaluate health behaviors among trainee physicians [8]. Still, the main focus was on mental health, burnout, and substance abuse [9]. This limited focus failed to highlight an important aspect of preventive health, which is diet and exercise, which is crucial for both physical well-being and health care performance.

Establishing a healthy lifestyle early in a career positions the trainee physician to provide similar advice to patients and thus promote healthy lifestyles. Also, raising awareness and enabling change in the postgraduate medical training environment can support the goal and health care at large [10].

Thus, this study is designed to evaluate eating practices and physical activity among postgraduate medical education (PGME) trainee physicians. By identifying existing gaps in health practices, the study seeks to inform strategies to promote healthier lifestyles among trainee physicians, which, in turn, could enhance their performance and improve patient care outcomes.

METHODS

This cross-sectional study was conducted by the Family Medicine Department among postgraduate medical education (PGME) trainees at Aga Khan University Hospital, Karachi, Pakistan, from October 2020 to September 2021. The study was reviewed and approved by the institutional review board (approval number# 2019-2034-5346). This study recruited PGME trainees from various departments, including surgery, medicine, pediatrics, gynecology/obstetrics, and family medicine. Informed written consent was obtained from all participants, and confidentiality was maintained throughout the research process.

Residents aged 20 to 40 years, currently enrolled in a residency training program, and who provided informed consent were included. Exclusion criteria were participants with chronic medical conditions (e.g., diabetes mellitus, hypothyroidism, Cushing's syndrome), physical disabilities restricting physical activity, or refusal to participate. PG trainees were selected by

non-probability convenience sampling. Sample size calculated using World Health Organization software. According to the literature, 74% [4] of trainees do not have healthy eating practices. Based on this, with a 95% confidence interval and an error bound of 6%, the sample size was 206. After adding non-responders, the final sample size would be 250 study participants.

A self-administered structured questionnaire was used for data collection. It consisted of 15 questions divided into three sections: Profile of participants (5 questions): age, sex, department, year of training, and body mass index (BMI). Questions related to diet (7 questions): frequency of consumption of food groups, including grain, protein, fruit, vegetable, water, beverages, and frequency of skipping breakfast. Questions related to physical activity (3 questions): Frequency of vigorous, moderate, and light intensity activity. The dietary component was adapted from the FDA Food Pyramid guidelines [11], and the physical activity component was based on the WHO Global Physical Activity Questionnaire (GPAQ) [12]. BMI was reported and classified according to Asian-specific BMI cut-offs [1]. The association between physical activity intensity levels and continuous body weight values was examined descriptively using cross-tabulation. The study questionnaire was reviewed by a panel of 5 public health professionals for content validity and relevance, and finalized after a pilot test with 15 postgraduate medical education trainees to assess clarity and consistency. The tool also demonstrated acceptable internal consistency (Cronbach's alpha = 0.76), indicating good reliability.

Study data were entered and analyzed using SPSS version 19. Categorical variables (e.g., sex, eating habits, activity levels) were presented as frequencies and percentages, while continuous variables (e.g., Age, BMI) were summarized using mean $\pm$ standard deviation. Comparison of continuous weight and physical activity levels was performed using the chi-square test, and p-values < 0.05 were considered statistically significant. Where appropriate, cross-tabulations and significance levels were presented in tables.

RESULTS

Postgraduate medical education (PGME) trainees from multiple departments, including surgery, medicine, gynecology, pediatrics, and family medicine, were enrolled in the study. Among the 250 participants, 78% were females. The majority of participants were aged 26-30 years (68.4%). Most trainees belonged to the surgery and medicine departments, accounting for 38.8% and 21.2% respectively. Participants represented various years of training, with 51.2% Year-1, 27.6% Year-2, and 12% Year-3 trainees; the remainder were from Year-4 and Year-5 programs (**Table 1**).

Table 1: Profile of the studied postgraduate medical education (PGME) trainees (n=250).

Variables	Category	Frequency	Percentage
Age Group	20-25 years	67	26.8
	26-30 years	171	68.4
	31-35 years	12	4.8
Sex	Male	55	22.0
	Female	195	78.0
Department	Family Medicine	7	2.8
	Surgery	97	38.8
	Medicine	53	21.2
	Gynae and Obs	44	17.6
	Pediatrics	49	19.6
Year of Training	Year 1	128	51.2
	Year 2	69	27.6
	Year 3	30	12.0
	Year 4	17	6.8
	Year 5	6	2.4

Most participants (74%) reported consuming only 1-3 servings of grain products per day, whereas the FDA recommends 6-11 servings daily; only 18 (7.2%) participants met this recommendation. Adequate protein intake, in line with the FDA recommendation of 2-3 servings per day, was observed in 40% of participants. The FDA recommends 3-5 daily servings of vegetables; however, only 18.4% of participants met this guideline. In addition, the majority of participants (57.6%) consumed only one serving of fruit per day, which is below the recommended intake of 2-3 servings per day (**Table 2**).

Table 2: Food groups consumption among participants (n=250).

Food Groups	Category Detail	Frequency	Percentage
Grain (servings/day)	0	5	2.0
	1-3	185	74.0
	4-5	42	16.8
	6-11	18	7.2
Protein (servings/day)	0	17	6.8
	1-2	97	38.8
	2-3	101	40.4
	4-5	35	14.0
Vegetables (servings/day)	0	48	19.0
	1-2	148	59.2
	3-5	46	18.4
	6-7	3	1.2
	≥7	5	2.0
Fruits (servings/day)	0	40	16.0
	1	144	57.6
	2-4	38	15.2
	5-6	20	8.0
	≥7	8	3.2
Water (glasses/day)	1-2	43	17.2
	3-5	117	46.8
	6-7	58	23.2
	8-12	16	6.4
	≥12	16	6.4

Food Groups	Category Detail	Frequency	Percentage
Beverages (cups/day)	0	14	5.6
	1	46	18.4
	2	77	30.8
	3	56	22.4
	4	44	17.6
Skipping breakfast (days/week)	≥5	13	5.2
	0 (never skip)	70	28.0
	1	29	11.6
	2	42	16.8
	3	56	22.4
	4	13	5.2
	5	13	5.2
	6	3	1.2
	7 (skip daily)	24	9.6

Water intake was also sub-optimal among the trainees. Only 16 (6.4%) participants reported consuming 8-12 glasses of water daily, while 117 (46.8%) reported consuming 3-5 glasses per day, and 43 (17.2%) reported consuming only 1-2 glasses per day. Most participants reported consuming 2-3 cups of beverages per day, primarily tea and coffee. Breakfast skipping was notably prevalent, with 28% of participants skipping breakfast daily and only 9.6% reporting regular daily breakfast consumption (**Table 2**).

Table 3 shows that participants' physical activity levels were generally inadequate. Only 32 (12.8%) participants reported engaging in adequate vigorous-intensity physical activity, while only 11 (4.4%) reported engaging in adequate moderate-intensity physical activity. More than half of the participants (124, 51%) reported engaging only in low-intensity physical activity.

Table 3: Physical activity intensity among participants (n=250).

Physical Activity Intensity	Frequency	Percentage
Daily vigorous intensity physical activity	32	12.8
Daily moderate intensity physical activity	11	4.4
Daily low-intensity physical activity	124	51.0
Occasional mixed intensity physical activity on multiple days	83	33.2

Table 4 shows the BMI categories among participants. Overall, 26% of the participants were classified as overweight and 3.2% as obese.

Table 4: Body mass index (BMI) among participants (n=250).

BMI Range (in Kg/m ²)	Frequency	Percentage
<18	12	4.8
18-24.9	165	66.0
25-27.9	65	26.0
28-30	8	3.2

DISCUSSION

The present study assessed eating habits and physical activity among postgraduate medical trainees in a tertiary care hospital, and the results showed suboptimal health behaviors among participants. The present study demonstrated inadequate consumption of various food

groups, including grains, proteins, and vegetables, among the participants. The present study also showed that physical activity was inadequate among participants, and only 12.8% met the criteria for recommended daily vigorous-intensity physical activity. In the present study, we found that 26% of the participants were classified as overweight and 3.2% as obese. Participants also reported high beverage consumption, and a concerning trend of skipping breakfast was observed.

The present study's findings are consistent with many regional and international studies. A previous study in Pakistan also reported that only 1 of 1,190 healthcare professionals adhered to USDA dietary guidelines [1]. A study from South Africa showed similar trends, with health care professionals having poor diets and irregular meals [13]. In particular, skipping breakfast was linked to fatigue and cognitive decline in that study, which, in turn, reinforces the current study's finding that 28% of participants skipped daily breakfast [13].

Many healthcare providers, including consultant physicians, trainees, interns, and students, demonstrated unhealthy lifestyle behaviors like increased levels of stress, poor diet, and low physical activity in different studies from all over the world. Thus, incorporating mindful self-care and interventions such as physical activity programs is required to improve physicians' well-being, reduce burnout, and stress, and promote healthier habits among physicians [14-20].

The present study aligns with a 2024 study conducted in Saudi Arabia, which highlighted the lack of physical activity among trainee physicians. The barriers to a healthy lifestyle were found to be long working hours and a lack of institutional support for physical activity [7].

These findings have important implications for workplace health promotion in teaching hospitals. Poor lifestyle behaviors among medical trainees can contribute to long-term health risks and reduced clinical performance. Given that physicians often serve as role models for their patients, their personal health practices carry professional significance. Structured institutional interventions — such as provision of healthy meal options, protected time for exercise, and wellness education — should be prioritized.

The key strength of the present study is its focus on postgraduate trainees - a group that has been underexplored yet. However, the use of self-reported food intake and standardized physical activity measures (WHO GPAQ) adds methodological rigor. However, dependence of self-reported data may introduce bias. In addition, the study is single-centered, and further multicenter studies are required to explore lifestyle determinants among trainee physicians. Moreover, further studies are required to explore the impact of interventions on trainee physicians' lifestyles and to inform policy-making accordingly.

LIMITATIONS

Barriers to adopting healthy living among the participants were not addressed in this study due to time constraints. And we recommend that further studies focus on the barriers to a healthy lifestyle.

CONCLUSION

The present study found that postgraduate medical trainees have poor dietary habits, with very few meetings recommending healthy eating. The present study also found that a significant proportion of participants were overweight (26%) and obese (3.2%), highlighting inadequate physical activity among trainee physicians. Unhealthy behaviors, such as high intake of alcoholic beverages and skipping breakfast, were common. These findings align with global evidence of poor diet and physical activity among postgraduate medical trainees. These findings are largely driven by long working hours and a busy clinical schedule, which limit the maintenance of a healthy lifestyle among trainee physicians. Thus, structural workplace interventions should be planned to improve trainee physicians' well-being.

RECOMMENDATIONS

The present study indicates that to attain a healthy lifestyle, a proper diet and adequate physical activity should be incorporated into daily living. There should be easy access to healthy food options at the workplace, and trainees should have allocated free time for physical and sports activities.

LIST OF ABBREVIATIONS

BMI : Body Mass Index
PGME : Post Graduate Medical Education
FDA : U.S. Food and Drug Administration

ETHICS APPROVAL

The study was reviewed and approved by the Ethical Review Committee (ERC) of Aga Khan University, Karachi (approval number# 2019-2034-5346). All procedures performed in studies involving human participants were following the ethical standards of the institutional and/ or national research committee and the Helsinki Declaration.

CONSENT FOR PUBLICATION

Written informed consent was obtained from all participants.

AVAILABILITY OF DATA

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

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None.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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Declared none.

AUTHORS' CONTRIBUTION

NI proposed the study conception and design. NI and ST performed data handling, interpretation, and analysis. Manuscript writing was carried out by NI and reviewed by ST. ST conducted a critical revision. Both authors read and approved the final version.

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