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HEALTHY LIFESTYLE PRACTICES IN HEALTHCARE PROFESSIONALS AT BMC HOSPITAL QUETTA: A CROSS SECTIONAL STUDY

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Abstract

Healthcare professionals (HPs) play a pivotal role in promoting public health by delivering essential healthcare services and advocating preventive medicine. Despite their crucial role, many HPs struggle to maintain healthy lifestyle habits, including physical activity, sleep patterns, and stress management, due to patient burden and hospital environment

This cross-sectional study aimed to assess these lifestyle parameters among primary healthcare professionals in Baluchistan, Pakistan. Despite the seriousness of cardiovascular diseases in low- and middle-income countries, like Pakistan, due to the hospital environment in health care providers, minimal attention is given to the Prevention of cardiovascular disease risk factors in South Asia, particularly in Pakistan

Practical efforts are required to enhance the understanding of cardiovascular disease risk factors such as diet, physical activity, and tobacco-control policies to support prevention and control at the population level. This paper reviews the major modifiable risk factors in Pakistan, highlights available preventive services, and presents the most likely ways to promote risk-factor reduction. The study involved 146 participants, comprising doctors, nurses, and pharmacists. Data was collected using validated questionnaires, including the Global Physical Activity Questionnaire (GPAQ), Pittsburgh Sleep Quality Index (PSQI), and Perceived Stress Scale (PSS). Results revealed gender-based variations in physical activity levels and stress levels, with male doctors and pharmacists exhibiting higher engagement in physical activity compared to their female counterparts due to the hospital environment. Elevated stress levels were observed across all healthcare professions, particularly among doctors and nurses. These findings underscore the importance of targeted interventions to promote healthier lifestyles and mitigate stress among healthcare professionals.

Keywords: *Cardiovascular diseases, Healthcare professionals, Lifestyle habits, Physical activity, Stress management*

INTRODUCTION

Healthcare professionals (HPs) played a critical role in enhancing both the accessibility and quality of healthcare services for the population. They actively delivered essential healthcare interventions that contributed to maintaining health and preventing disease in individuals and communities. By engaging in both pharmacological and non-pharmacological disease management, HPs assumed diverse professional responsibilities aimed at improving the well-being of individual patients as well as the broader public.

In addition to these clinical duties, HPs faced increasing patient loads and demanding hospital environments. Previous research highlighted a general lack of adequate knowledge in stress management and modifiable risk factors for heart disease among healthcare providers attending to patients with acute myocardial infarction (AMI) and other cardiac conditions in Pakistan. This knowledge gap was contributing to the rising rates of cardiovascular diseases in the country (1).

A multicenter, cross-sectional survey conducted across Pakistan from August to October 2020 included 1,406 healthcare providers recruited through a non-probability convenience sampling technique. Among the participants, 1,284 (91.3%) were male and 122 (8.7%) were female, with a mean age of 44.09 ± 11.18 years. Over half (n = 768; 53.0%) reported their general health as "good," 1,045 (73%) expressed satisfaction with their work-life balance, 206 (14%) had consulted a physician for personal health concerns within the past six months, while 358 (25%) had never undergone a routine medical check-up (2).

Maintaining a healthy lifestyle had become a cornerstone of preventive medicine, with growing recognition of its influence on overall health status. There was a general consensus that a healthy lifestyle consisted of a nutritious diet, regular physical activity, avoidance of smoking, and maintaining a body mass index (BMI) below 30 kg/m². Research indicated that the personal lifestyle choices and behaviors of healthcare professionals had a positive influence on their clinical attitudes and counseling practices.

A lack of physical activity had been strongly associated with the development of various non-communicable diseases. Sedentary behavior contributed significantly to the onset and progression of conditions such as obesity, cardiovascular disease (CVD), type 2 diabetes, and certain cancers. Globally, CVDs remained the leading cause of mortality, accounting for approximately 17.9 million deaths in 2016 alone (3). More than 75% of these CVD-related deaths occurred in low- and middle-income countries. South Asian populations, including healthcare professionals, were particularly vulnerable to such conditions (4).

The healthcare profession placed considerable physical and psychological demands on its practitioners. Despite the critical nature of their work, healthcare professionals often struggled to maintain healthy lifestyle habits, including consistent physical activity, adequate sleep, and effective stress management.

This study held considerable significance in the healthcare domain, as it aimed to explore the complex relationships among physical activity, sleep patterns, and stress management in healthcare professionals. The well-being of these individuals was vital not only for their personal health but also for ensuring the delivery of high-quality patient care. Due to the high-stress nature of their work and irregular schedules, healthcare professionals were particularly susceptible to poor sleep quality and insufficient physical activity. Gaining insight into these factors was essential for designing targeted, evidence-based interventions that could enhance their health and resilience. The findings from this study aimed to support the development of comprehensive wellness programs, offering strategies to reduce stress, improve sleep hygiene, and encourage physical activity among healthcare workers.

This study aimed to assess three key determinants of a healthy lifestyle among primary healthcare professionals: physical activity, sleep quality, and stress management. It also sought to evaluate the impact of these factors on the overall well-being of healthcare professionals.

METHODOLOGY

This study was conducted at BMC Hospital in Quetta, Balochistan, which served as the primary research site. BMC Hospital is a prominent healthcare institution in the region, catering to a diverse population of healthcare professionals.

A descriptive cross-sectional research design was employed to comprehensively examine the health behaviors of healthcare professionals in Balochistan, Pakistan. The study aimed to assess physical activity, sleep patterns, and stress management practices within this target population. A non-probability convenience sampling method was utilized to recruit participants.

Data were collected using a self-administered questionnaire that incorporated validated instruments, including the Global Physical Activity Questionnaire (GPAQ), the Pittsburgh Sleep Quality Index (PSQI), and the Perceived Stress Scale (PSS). The questionnaire was designed to gather information on demographics, health behaviors, and perceived stress levels. Ethical considerations were strictly observed, ensuring participant confidentiality and voluntary participation throughout the study.

STUDY LOCATION AND SAMPLE SIZE

The research project was conducted over a two-month period. This compressed timeline was strategically chosen to enhance efficiency while ensuring the timely completion of data collection and analysis.

To determine the sample size, the WHO sample size calculator was used, applying a 95% confidence level, an 8% margin of error, and an assumed population proportion of 41.7%. Based on these parameters, the calculated sample size was 146 participants. The selection of a 95% confidence level ensured a high degree of reliability in the study findings, while the 8% margin of error allowed for reasonable precision in estimating

the true population parameter. The assumed population proportion of 41.7%, derived from available data, guided a conservative and informed approach to sample size estimation.

INCLUSION AND EXCLUSION CRITERIA

The inclusion criteria for this study encompassed healthcare professionals employed at BMC Hospital in Quetta, Balochistan. Eligible participants included doctors, nurses, and pharmacists. Individuals who did not belong to these categories or were from other healthcare disciplines were excluded from the study to ensure a focused assessment of health behaviors specific to these three professional groups.

DATA COLLECTION PROCEDURE

The data collection procedure for this study followed a systematic and structured approach to ensure the comprehensive gathering of information regarding health behaviors among healthcare professionals at BMC Hospital in Quetta, Balochistan. The research team began by obtaining ethical approvals and necessary permissions from the relevant authorities. After securing informed consent from the participants, a self-administered questionnaire was distributed.

The questionnaire included validated instruments such as the International Physical Activity Questionnaire (IPAQ), the Pittsburgh Sleep Quality Index (PSQI), and the Perceived Stress Scale (PSS). It collected data on demographic characteristics, health-related behaviors, and perceived stress levels. To enhance the reliability and consistency of responses, standardized instructions were provided to all participants.

DATA ANALYSIS

Data were analyzed using established guidelines for each respective assessment tool. Physical activity levels were categorized into low, moderate, or high intensity in accordance with the International Physical Activity Questionnaire (IPAQ) processing protocol. Participants were classified as having low physical activity if they reported either no physical activity or an amount insufficient to meet the criteria for moderate or high levels. Moderate physical activity was defined as meeting any of the following: engaging in vigorous-intensity activity for at least 20 minutes on three or more days per week; undertaking moderate-intensity activity or walking for a minimum of 30 minutes on five or more days per week; or participating in any combination of walking, moderate, or vigorous-intensity activity on five or more days per week, cumulatively achieving at least 600 MET-minutes/week.

Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI), with scores categorized to reflect overall sleep status. A global PSQI score ranging from 0 to 4 was indicative of good sleep quality, scores between 5 and 10 represented moderate sleep quality, and scores of 11 or higher were interpreted as poor sleep quality.

Perceived stress levels were evaluated using the Perceived Stress Scale (PSS), which measures the degree to which individuals appraise situations in their lives as stressful. Responses were scored on a Likert scale and totaled to produce a composite stress score. Scores from 0 to 13 indicated low perceived stress, scores ranging from 14 to 26 represented moderate or mild stress, and scores of 27 or above were considered indicative of high perceived stress.

RESULTS

A total of 146 healthcare professionals (HCPs) participated in the study, comprising 75 doctors, 52 nurses, and 19 pharmacists. Data analysis was conducted in accordance with the International Physical Activity Questionnaire (IPAQ) guidelines.

Gender-based patterns emerged in both work-related and leisure-related physical activity. Among doctors, male participants reported a higher engagement in moderate (26%) and high-intensity (7%) work-related physical activities, while female doctors were primarily involved in moderate-intensity activities (21%) with no reported participation in high-intensity activities. Male nurses demonstrated a distribution across low, moderate, and high-intensity work-related activity levels, with 6% involved in high-intensity physical activity. Similarly, female nurses showed a diverse engagement across activity intensities,

including 7% participating in high-intensity work-related activity. Male pharmacists predominantly reported low to moderate-intensity activity levels in the workplace, whereas female pharmacists exhibited minimal involvement in high-intensity work-related physical activity (Table I).

In terms of leisure-related physical activity, male doctors were more frequently engaged in moderate (31%) and high-intensity (11%) activities, while female doctors were primarily involved in low and moderate-intensity activities. Male nurses participated across all intensity levels, with 7% engaging in high-intensity leisure activities. Female nurses also showed a preference for low and moderate-intensity activities during leisure time, with limited participation in high-intensity exercises. Among pharmacists, male participants were active in low and moderate-intensity leisure activities, and 4% reported engagement in high-intensity leisure physical activity. Female pharmacists showed similar trends, although their involvement in high-intensity leisure activities was limited (Table II).

Table I. Frequency of work-related physical activity of healthcare professionals

Healthcare professionals	Gender	Frequency	Low intensity	Moderate intensity	High intensity
Doctors	Male	47	14	26	7
	Female	28	7	21	0
Nurses	Male	23	1	16	6
	Female	29	3	19	7
Pharmacists	Male	17	3	14	0
	Female	2	0	2	0

Table II. Leisure related physical activity of healthcare professionals

Healthcare professionals	Gender	Frequency	Low intensity	Moderate intensity	High intensity
Doctors	Male	47	5	31	11
	Female	28	18	8	2
Nurses	Male	23	4	12	7
	Female	29	20	9	0
Pharmacists	Male	17	5	8	4
	Female	2	1	1	0

PERCEIVED STRESS SCALE (PSS)

The Perceived Stress Scale (PSS) data provides an insight into the stress levels experienced by healthcare professionals, categorized by gender. Among male doctors, 28% report high stress, 14% experience mild stress, and 5% report low stress. Female doctors also show a significant proportion facing high stress (14%), with 7% reporting mild stress and 7% reporting low stress. Male nurses exhibit a diverse distribution, with 12% reporting high stress, 8% experiencing mild stress, and 3% reporting low stress. Female nurses, on the other hand, have a higher percentage facing high stress (18%), with 8% experiencing mild stress and 3% reporting low stress. Among male pharmacists, 13% report mild stress, 3% experience high stress, and 1% report low stress. Female pharmacists generally report lower stress levels, with 2% experiencing mild stress and no reports of high stress (Table III).

THE PITTSBURGH SLEEP QUALITY

The Pittsburgh Sleep Quality Index (PSQI) data illustrates the sleep quality of healthcare professionals, categorized by gender. Among male doctors, 18% report poor sleep quality, 19% have scores indicating poor sleep, and 10% exhibit moderate sleep quality. Female doctors generally fare better, with 9% experiencing poor sleep quality and 15% having moderate sleep quality. Male nurses show 9% with poor sleep quality and 11% with moderate sleep quality, while female nurses exhibit a higher percentage of poor sleep quality at 13%, with 5% having moderate sleep quality. Male pharmacists report 6% with poor sleep quality and 10% with moderate sleep quality, while female pharmacists generally have better sleep quality, with only 1% experiencing poor sleep quality and 1% having moderate sleep quality (Table IV).

Table III. Frequency according to the Perceived Stress Scale (PSS) of healthcare professionals

Healthcare professionals	Gender	Frequency	Low Stress (0 to 13)	Mild stress (14 to 26)	High stress (27 and above)
Doctors	Male	47	5	28	14
	Female	28	7	14	7
Nurses	Male	23	8	12	3
	Female	29	3	18	8
Pharmacists	Male	17	13	3	1
	Female	2	2	0	0

Table IV. Frequency according to the Pittsburgh Sleep Quality Index (PSQI) of healthcare professionals

Healthcare professionals	Gender	Frequency	Good sleep quality (0 to 4)	Moderate sleep quality (5 to 10)	Poor sleep quality (11 and above)
Doctors	Male	47	10	18	19
	Female	28	15	9	4
Nurses	Male	23	11	9	3
	Female	29	5	13	11
Pharmacists	Male	17	10	6	1
	Female	2	1	0	1

DISCUSSION

The World Health Organization (WHO) defines physical activity as any bodily movement produced by skeletal muscles that requires energy expenditure. While slight variations in this definition exist, the WHO's 2018 Global Strategy on Physical Activity introduced a modest modification of Caspersen's original concept. Physical activity can be practiced independently or under supervision, and its implementation poses minimal adverse effects compared to pharmacological interventions (1).

The WHO recommends engaging in moderate-intensity physical activity for at least 150 to 300 minutes per week. Although this may initially seem extensive, when distributed across the week, it translates to 30 to 60 minutes per day over five days, making it a feasible target for most individuals across all age groups, with individual variability considered when necessary (2).

To enhance physical activity levels, comprehensive and integrated strategies are necessary. These include personal efforts to promote physical activity within oneself and across social circles such as family, friends, patients, and colleagues, and in various environments including schools and workplaces. The selection of physical activities should align with an individual's current fitness level and health objectives. According to the Physical Activity Guidelines by the American College of Sports Medicine (ACSM), individualized exercise programs are encouraged to promote health and overall wellbeing. Literature supports the integration of balance, endurance, flexibility, and strength training exercises to optimize physical health and fitness (6).

The use of technology, such as fitness trackers or activity monitors, has emerged as a practical tool for monitoring physical activity. These devices record various metrics including distance walked or run, caloric expenditure, and in some models, heart rate, thereby facilitating user engagement and adherence to physical activity goals (4).

In addition to physical activity, sleep regulation is a critical component of overall health. Sleep architecture denotes the structural organization of sleep, comprising non-rapid eye movement (NREM) and rapid eye movement (REM) phases. NREM sleep is further divided into stages 1 through 4, representing increasing depths of sleep. Numerous physiological changes occur during sleep, affecting multiple body systems. While these changes are generally well tolerated in healthy individuals, they may pose challenges for those with compromised physiological systems, such as individuals suffering from cardiovascular disorders (5).

Sleep patterns are influenced by a multitude of factors, one of which is stress. Among healthcare workers (HCWs), stress has been widely documented, even prior to the COVID-19 pandemic. Stress, a

multifaceted concept, can be broadly characterized as the response elicited when something of personal importance is perceived to be at risk (6).

Numerous studies have been conducted among healthcare professionals, typically evaluating one or two lifestyle factors. In contrast, the present study comprehensively assessed three key lifestyle behaviors—physical activity, sleeps quality, and perceived stress—among healthcare workers in a primary care setting. In countries like Pakistan, physicians continue to work extensive hours, with reported weekly working hours ranging from 74 to 92 hours, often resulting in heightened stress levels and diminished job satisfaction. Although alcohol consumption is often included as a lifestyle variable in international studies, it was excluded from this study due to its cultural and legal prohibition in the study area (7).

The findings of this study are largely consistent with prior research that evaluated physical activity and stress levels in healthcare workers. The data regarding work-related and leisure-related physical activity, analyzed through the International Physical Activity Questionnaire (IPAQ), demonstrated noticeable gender-based differences. Male doctors showed higher involvement in moderate (26%) and high-intensity (7%) work-related physical activity, likely indicative of their heavy workloads and more physically demanding duties. In contrast, female doctors predominantly engaged in moderate-intensity activities (21%), with no participation in high-intensity categories. Similar patterns were observed among nurses and pharmacists, where males consistently reported higher levels of physical activity, suggesting possible differences in job roles and task allocations (8.)

This study also adds to the existing literature by offering a comparative perspective on lifestyle behaviors across professional groups. Nurses exhibited more variation in work and leisure-related physical activity levels, with male nurses participating in more strenuous activities than their female colleagues. Pharmacists, on the other hand, reported generally lower levels of physical exertion, which aligns with the typically sedentary nature of pharmacy practice. These distinctions are significant for tailoring profession-specific interventions aimed at promoting healthier behaviors within healthcare settings (9).

Furthermore, perceived stress, assessed through the Perceived Stress Scale (PSS), was found to be moderate to high in a substantial portion of the study population. High stress levels among healthcare workers have been linked to poor job satisfaction, burnout, and suboptimal patient care outcomes (10). A cross-sectional study in India reported similar findings, where 34.5% of healthcare professionals exhibited moderate to high stress, correlating with extended working hours and insufficient time for self-care (11). The present results underscore the importance of implementing institutional strategies that address occupational stress, such as stress management training and regular mental health screening (12).

Another key aspect involves the interconnectedness between lifestyle behaviors and the well-being of healthcare professionals. Physical inactivity and poor sleep quality are independently associated with an increased risk of cardiovascular disease, obesity, and mental health disorders (13, 14). Given that healthcare professionals often serve as role models for their patients, their engagement in healthy behaviors not only impacts their own well-being but also influences patient counseling practices and public health outcomes (15). Therefore, institutional efforts must be directed toward improving access to wellness programs, flexible work schedules, and workplace facilities that support physical activity and rest.

Finally, the implications of this study extend beyond individual health to the broader healthcare system. Burnout and poor lifestyle behaviors among healthcare workers have been associated with increased absenteeism, reduced productivity, and compromised quality of care (16, 17). Preventive interventions, such as targeted health promotion campaigns and regular health assessments within healthcare institutions, could help mitigate these risks. Future research should consider longitudinal designs to evaluate changes in lifestyle behaviors over time and assess the effectiveness of intervention strategies aimed at enhancing the health of this vital workforce.

CONCLUSION

The findings indicate that primary healthcare professionals do not consistently meet recommended healthy lifestyle parameters. Significant gender-based differences in physical activity and stress levels

highlight the need for tailored wellness interventions. Promoting healthier behaviors among this workforce is essential not only for their personal well-being but also to enhance their role as effective health advocates and role models for patients.

Conflict of interest:

Authors declare no conflict of interest.

Authors' contribution:

MA: carried out the experiment; TM: wrote the manuscript; WM: proof outline & MZM: conceived and planned the experiments.

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