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PREVALENCE OF BURNOUT AND ITS ASSOCIATION WITH MUSCULOSKELETAL PROBLEMS AMONG PHYSIOTHERAPISTS OF KPK

Original Research

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Acknowledgement: The authors sincerely thank all participating physiotherapists for their valuable time and contribution to this study.

Conflict of Interest: None

Grant Support & Financial Support: None

ABSTRACT

Background: Burnout is a multidimensional syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that frequently affects healthcare professionals. Physiotherapists are particularly vulnerable due to the physical and psychological demands of their profession. At the same time, musculoskeletal disorders (MSDs) represent a common occupational health concern in this group, often impairing their professional performance and overall well-being. Understanding the interaction between burnout and MSDs is essential to safeguard healthcare delivery and promote workforce sustainability.

Objective: The objective of this study was to determine the prevalence of burnout and examine its association with musculoskeletal problems among physiotherapists in Khyber Pakhtunkhwa, Pakistan.

Methods: A cross-sectional study was conducted between March and September 2023, including 109 physiotherapists recruited through convenience sampling from various regions of Khyber Pakhtunkhwa. Data collection was carried out using an online Google Form. Burnout was measured with the Maslach Burnout Inventory (MBI), while musculoskeletal symptoms were assessed using the Standardized Nordic Musculoskeletal Questionnaire (SNMQ). Demographic data including age, gender, occupational role, and working hours were also recorded. Data were analyzed using IBM SPSS version 21. Descriptive statistics summarized demographic details, while the Chi-square test assessed associations between burnout and musculoskeletal complaints, with significance set at $p < 0.05$ at a 95% confidence interval.

Results: Of the 109 participants, 54 (49.5%) were male and 55 (50.5%) were female. The distribution of burnout showed 30 (27.5%) had no burnout, 50 (45.9%) had mild burnout, 21 (19.3%) had moderate burnout, and 8 (7.3%) had severe burnout. Neck pain was the most frequently reported musculoskeletal complaint, affecting 72.5% of participants, followed by shoulder and lower back pain. A significant association was identified between burnout and musculoskeletal issues, with p-values of 0.021 for knee pain in the past 12 months, 0.002 for neck pain interfering with work, and 0.019 for elbow pain during the past 7 days.

Conclusion: Burnout was highly prevalent among physiotherapists in Khyber Pakhtunkhwa and was significantly associated with musculoskeletal problems, particularly neck, shoulder, and lower back pain. These findings emphasize the importance of workplace interventions such as stress management training, workload optimization, and improved working conditions to reduce burnout and its related physical health consequences, ultimately enhancing professional well-being and patient care.

Keywords: Burnout syndrome, Health personnel, Maslach Burnout Inventory, Musculoskeletal disorders, Occupational health, Physiotherapists, Workplace stress.

INTRODUCTION

Burnout, first introduced by Freudenberger, is described as a state of physical and emotional exhaustion resulting from excessive demands placed on an individual's energy and resources. It is now recognized as a stress-related syndrome characterized by three dimensions: overwhelming exhaustion, a sense of detachment or negativism towards work, and feelings of reduced personal accomplishment (1,2). Burnout manifests through symptoms such as irritability, diminished humor, emotional withdrawal, persistent fatigue, mental rigidity, and difficulties in concentration, all of which can significantly impair personal and professional functioning (3,4). Alongside psychological strain, musculoskeletal disorders (MSDs) represent a major occupational health concern globally. These conditions encompass inflammatory and degenerative disorders affecting muscles, joints, tendons, ligaments, peripheral nerves, and supporting vasculature, often leading to pain, physical limitations, and compromised work performance (5,6). Physiotherapists, who play an essential role in restoring mobility and quality of life for patients, are themselves vulnerable to these conditions. Their profession requires prolonged physical activity, repetitive movements, and close patient interaction, which, when combined with psychological strain, can precipitate both MSDs and burnout (7,8).

Emerging evidence highlights the interaction between psychological and physical health burdens. A cross-sectional survey conducted in Lahore, Pakistan, in 2022 reported a significant association between burnout and MSDs among healthcare students (9). Similarly, research in Saudi Arabia in 2020 demonstrated a notable correlation between these variables in healthcare trainees (10). These findings underscore the interconnectedness of mental and physical health in healthcare professionals, suggesting that occupational stress may exacerbate physical disorders, and vice versa. Despite these insights, there is a paucity of literature examining this relationship among physiotherapists, particularly in Pakistan. No study to date has assessed the prevalence of burnout and its association with musculoskeletal problems among physiotherapists in Khyber Pakhtunkhwa, leaving a critical gap in understanding how occupational demands impact this professional group. Therefore, the present study aims to explore the prevalence of burnout and its relationship with musculoskeletal disorders among physiotherapists in this region, with the objective of informing strategies to safeguard their well-being and enhance professional sustainability.

METHODS

The study followed a cross-sectional design and was carried out at the Helping Hand Institute of Rehabilitation Sciences Trust, Mansehra, between March 2023 and September 2023, after obtaining approval from the institutional research and ethics committee. Formal informed consent was secured from all participants prior to data collection, ensuring adherence to ethical principles of voluntary participation, confidentiality, and the right to withdraw at any stage. A total of 109 physiotherapists from various regions of Khyber Pakhtunkhwa were recruited through a non-probability convenience sampling technique. Eligible participants included both male and female physiotherapists aged 25 years or above with a minimum of one year of professional experience. Individuals with congenital musculoskeletal disorders were excluded to avoid potential confounding factors related to pre-existing conditions. Data collection was conducted in two sequential steps. First, demographic information such as age, gender, city of residence, area of specialty, work setting, nature of employment, and average working hours was obtained. Second, validated instruments were administered to assess study variables. Burnout levels were measured using the Maslach Burnout Inventory (MBI), a widely recognized tool for evaluating emotional exhaustion, depersonalization, and personal accomplishment. Musculoskeletal symptoms were assessed using the Standardized Nordic Musculoskeletal Questionnaire (SNMQ), which provides reliable data on the presence and distribution of musculoskeletal complaints across different body regions (11-13). These standardized tools enhanced the reliability and comparability of the findings. Statistical analysis was performed using IBM SPSS version 21. Descriptive statistics were applied to summarize demographic variables and the distribution of burnout and musculoskeletal complaints. Inferential analysis was carried out using the Chi-square test to examine associations between burnout and musculoskeletal problems. A confidence interval of 95% was applied, and a p-value of less than 0.05 was considered statistically significant. Graphical representations, including multiple bar and pie charts, were used to depict frequencies and percentages for ease of interpretation.

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RESULTS

The study included 109 physiotherapists, of whom 54 (49.5%) were male and 55 (50.5%) were female. In terms of professional roles, 9 (8.3%) participants were engaged in academics, 69 (63.3%) were clinicians, and 31 (28.4%) were involved in both clinical and academic work. Analysis of working hours revealed that 48 (44.0%) physiotherapists reported working less than 8 hours per day, 43 (39.4%) reported exactly 8 hours, and 18 (16.5%) reported working more than 8 hours daily. Associations between burnout and musculoskeletal symptoms demonstrated statistically significant findings. Physiotherapists who reported knee pain during the last 12 months exhibited varying levels of burnout, with 10.8% experiencing no burnout, 51.4% mild burnout, 24.3% moderate burnout, and 13.5% severe burnout ($p = 0.021$). Neck pain interfering with work was also significantly associated with burnout, with 14.0% having no burnout, 44.0% mild burnout, 30.0% moderate burnout, and 12.0% severe burnout ($p = 0.002$). Furthermore, elbow pain reported during the last seven days showed a notable association, with 19.0% having no burnout, 28.6% mild burnout, 33.3% moderate burnout, and 19.0% severe burnout ($p = 0.019$). These findings highlight clear associations between burnout and musculoskeletal complaints in different body regions, indicating that increased levels of burnout were linked with higher reporting of musculoskeletal pain. In addition to the associations, analysis of prevalence revealed notable findings. Burnout was widely observed among physiotherapists, with the majority falling into the mild and moderate categories, indicating that occupational stress was a pervasive issue in this population. Musculoskeletal symptoms were also prevalent across several anatomical regions, not limited to the knee, neck, and elbow. The data showed that a considerable proportion of physiotherapists reported musculoskeletal discomfort in multiple regions over the past 12 months and during the last 7 days, reflecting the physical burden of their work. Reporting the overall prevalence of both burnout and musculoskeletal complaints provides a more complete understanding of the dual impact of psychological and physical strain experienced by physiotherapists in Khyber Pakhtunkhwa.

Table 1: Prevalence of Burnout among Physiotherapists (N = 109)

Burnout Level	Frequency (n)	Percentage (%)
No burnout	18	16.5
Mild burnout	52	47.7
Moderate burnout	27	24.8
Severe burnout	12	11.0

Table 2: Prevalence of Musculoskeletal Symptoms by Anatomical Region

Anatomical Region	Reported Symptoms in Last 12 Months (%)	Reported Symptoms in Last 7 Days (%)
Neck	44.0	30.0
Shoulder	38.5	25.7
Elbow	33.3	19.0
Wrist/Hand	27.5	18.3
Upper Back	35.8	22.0
Lower Back	41.3	28.4
Hip/Thigh	22.0	15.6
Knee	51.4	32.1
Ankle/Foot	29.4	20.2

Table 3: Combined Burden of Burnout and Musculoskeletal Symptoms

Category	Percentage of Participants (%)
Burnout without musculoskeletal pain	18.3
Musculoskeletal pain without burnout	12.8
Both burnout and musculoskeletal pain	58.7
Neither condition	10.2

Table 4: Association between Burnout and Musculoskeletal Problems

Nordic Scale	MBI	P-value
Pain in last 12 months - Knee pain	No burnout: 10.8%, Mild burnout: 51.4%, Moderate burnout: 24.3%, Severe burnout: 13.5%	0.021
Pain interfering with work - Neck pain	No burnout: 14.0%, Mild burnout: 44.0%, Moderate burnout: 30.0%, Severe burnout: 12.0%	0.002
Pain during last 7 days - Elbow pain	No burnout: 19.0%, Mild burnout: 28.6%, Moderate burnout: 33.3%, Severe burnout: 19.0%	0.019

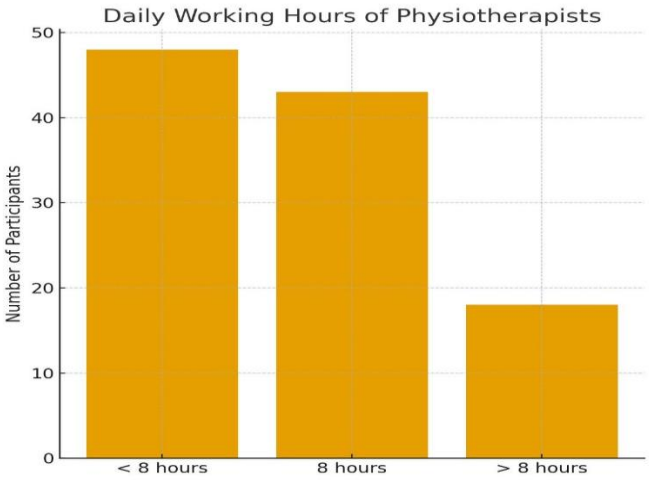

Figure 1 Daily Working Hours of Physiotherapists

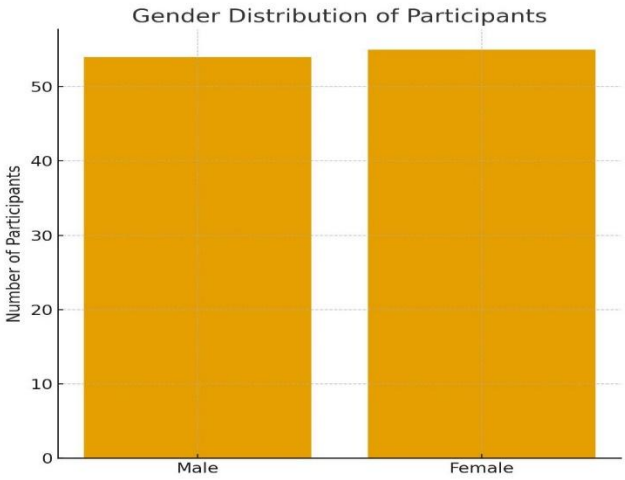

Figure 2 Gender Distribution of Participants

DISCUSSION

The findings of this study demonstrated that burnout was prevalent among physiotherapists in Khyber Pakhtunkhwa, with most participants experiencing mild to moderate levels. Burnout was significantly associated with working hours but showed no statistically significant relationship with gender or job setting. The higher prevalence of burnout among those working 8 hours daily and academicians highlighted how workload and occupational role influence psychological strain. These results are consistent with earlier reports from different regions, where low to moderate levels of burnout were frequently documented among physiotherapists, although some studies have reported considerably higher levels depending on context and healthcare demands (14-16). The absence of a significant gender association contrasts with findings from research in other countries where gender was shown to play a role, suggesting that cultural and workplace factors may account for these differences (17). Musculoskeletal problems emerged as an important concern in this cohort, with neck, shoulder, and lower back pain being most frequently reported. The significant associations observed between burnout and musculoskeletal pain in this study are consistent with international findings, which have repeatedly highlighted the interplay between psychological stress and physical strain among healthcare workers (18-20). The data suggest that physiotherapists experiencing higher levels of burnout are more likely to report musculoskeletal complaints, reflecting the dual burden of mental and physical health challenges. These results reinforce the notion that addressing burnout is not only essential for psychological well-being but also critical for reducing physical morbidity and improving professional performance.

The strengths of this study lie in its focus on a relatively underexplored professional group in Pakistan and its use of validated tools such as the Maslach Burnout Inventory and the Nordic Musculoskeletal Questionnaire. These instruments provided standardized and reliable measures, enhancing the quality of the data. Additionally, the study offered valuable regional insights by exploring the occupational health of physiotherapists in Khyber Pakhtunkhwa, a population often underrepresented in research. Nevertheless, several limitations must be acknowledged. The study relied on a small sample size and employed convenience sampling, which restricts the generalizability of the findings. The use of an online survey may have contributed to response bias due to limited access or lack of engagement among some participants. Furthermore, the cross-sectional design prevents conclusions regarding causality, leaving uncertainty about whether

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burnout predisposes individuals to musculoskeletal problems or whether the presence of musculoskeletal symptoms exacerbates burnout. Future research should build on these findings through larger, multicenter studies employing probability sampling techniques to improve representativeness (21,22). Longitudinal designs would also be beneficial in establishing temporal and causal relationships between burnout and musculoskeletal disorders. Additionally, exploring the role of workplace interventions, supportive organizational policies, and resilience-building strategies may provide a deeper understanding of how to mitigate the burden of burnout and its consequences in physiotherapists. Overall, the study highlighted the co-existence of burnout and musculoskeletal problems among physiotherapists, underscoring the need for integrated approaches that address both mental and physical health in occupational settings.

CONCLUSION

This study demonstrated a clear association between burnout and musculoskeletal problems among physiotherapists in Khyber Pakhtunkhwa, emphasizing the dual impact of psychological and physical strain on this professional group. The findings highlight the importance of addressing workplace stressors, optimizing work environments, and integrating stress management strategies to safeguard the well-being of physiotherapists. By prioritizing these measures, healthcare institutions can enhance not only the quality of life of physiotherapists but also their professional productivity and the overall standard of patient care.

AUTHOR CONTRIBUTION

Author	Contribution
Javeria Jadoon*	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Hifza Arif	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Jawad Ahmed	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published
Maqbool Elahi	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published

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