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Original Article

Prevalence of Musculoskeletal Pain and Discomfort and Its Association With Gender Among Clinical Physiotherapists of Lahore

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ABSTRACT

Background: Musculoskeletal pain and discomfort are common occupational health concerns among clinical physiotherapists because their work involves prolonged standing, repetitive movements, manual therapy, patient handling, and sustained non-neutral postures. **Objective:** To determine the prevalence of musculoskeletal pain and discomfort among clinical physiotherapists in Lahore and assess its association with gender. **Methods:** A cross-sectional observational study was conducted among 140 clinical physiotherapists from hospitals and certified physiotherapy clinics in Lahore. Participants included 70 females and 70 males with at least two years of clinical experience and a minimum of six working hours per day. Musculoskeletal pain and discomfort were assessed across nine anatomical regions using the Standardized Nordic Musculoskeletal Questionnaire, while pain severity was measured using the Numeric Pain Rating Scale. Data were analyzed using SPSS version 24. Frequencies and percentages were calculated, and gender-wise associations were assessed using chi-square or Fisher's exact test, with $p < 0.05$ considered statistically significant. **Results:** Lower back pain was the most prevalent complaint, affecting 55 participants (39.3%), followed by neck pain in 52 participants (37.1%). Female physiotherapists reported significantly higher neck pain than males (51.4% vs 22.9%; OR = 3.57, 95% CI: 1.72–7.41; p = 0.001) and lower back pain (51.4% vs 27.1%; OR = 2.84, 95% CI: 1.40–5.75; p = 0.005). Moderate-to-severe pain was also more frequent among females (71.4% vs 48.6%; OR = 2.65, 95% CI: 1.32–5.33; p = 0.009). **Conclusion:** Musculoskeletal pain and discomfort were common among clinical physiotherapists in Lahore, particularly in the lower back and neck regions. Female physiotherapists showed a higher burden of neck pain, lower back pain, and moderate-to-severe pain, highlighting the need for gender-sensitive ergonomic and preventive workplace strategies. **Keywords:** Musculoskeletal pain, physiotherapists, gender, lower back pain, neck pain, Nordic questionnaire, occupational health.

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INTRODUCTION

Musculoskeletal pain and discomfort are common occupational health concerns among healthcare professionals because their work often requires prolonged standing, repetitive movements, awkward postures, manual handling, and sustained physical effort. The musculoskeletal system, which includes bones, joints, muscles, ligaments, tendons, nerves, and related soft tissues, supports movement and functional activity; therefore, repeated mechanical loading or poor ergonomic exposure can contribute to pain, discomfort, reduced work capacity, and impaired quality of life (1,2). Work-related musculoskeletal disorders may affect different anatomical regions, including the neck, shoulders, upper back, lower back, elbows, wrists/hands, hips, knees, ankles, and feet, and may develop as a result of static posture, repetitive tasks, forceful exertion, patient handling, inadequate rest, and biomechanical strain during professional duties (3).

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Clinical physiotherapists are particularly exposed to these occupational risk factors because their professional role involves direct patient care, manual therapy, therapeutic exercises, mobilization techniques, electrotherapeutic procedures, patient transfers, and prolonged standing during treatment sessions. These activities frequently require sustained trunk flexion, repetitive upper-limb use, hand-intensive techniques, and force application through the shoulders, wrists, and fingers. In addition, lower back and lower-limb discomfort may occur when physiotherapists lift or reposition patients, assist mobility, demonstrate exercises, or work continuously for long clinical hours. As a result, musculoskeletal pain among physiotherapists is not only a personal health concern but may also affect clinical performance, productivity, job satisfaction, and the quality of patient care (4,5).

Previous literature has shown that healthcare workers in physically demanding professions commonly experience musculoskeletal pain in different body regions. Studies among ophthalmologists, gynecologists, surgeons, nurses, dentists, medical doctors, and other healthcare professionals have reported high frequencies of neck pain, low back pain, wrist pain, shoulder pain, ankle/foot pain, and other work-related musculoskeletal symptoms, often linked with prolonged working hours, poor posture, repetitive movements, and occupational stress (6). Research among physiotherapists has also indicated that manual therapy, repetitive thumb and wrist movements, patient handling, and prolonged clinical workload may increase the risk of pain in the thumb, wrist, shoulder, neck, and lower back regions (7). However, many existing studies focus on a single anatomical region, such as low back pain, thumb pain, wrist pain, or shoulder pain, rather than assessing multiple body regions within the same physiotherapist population.

Gender may also influence the occurrence and severity of musculoskeletal pain. Biological, anatomical, hormonal, psychosocial, and occupational differences between males and females may affect pain perception, reporting patterns, physical endurance, workload tolerance, and exposure to different professional and domestic tasks. Women have been reported in several studies to experience more frequent, intense, or prolonged musculoskeletal pain than men, although the distribution of pain by anatomical region may vary across professions and populations (8). In physiotherapy practice, gender-related differences may be clinically relevant because male and female physiotherapists may differ in anthropometry, strength, ergonomic adaptation, task allocation, and vulnerability to sustained or repetitive physical strain.

Despite the growing evidence on work-related musculoskeletal disorders among healthcare professionals, there remains a need for population-specific data on clinical physiotherapists working in Lahore. Existing local and regional studies have examined musculoskeletal symptoms among various healthcare groups or have focused on selected regions such as the thumb, wrist, shoulder, neck, low back, hip, knee, or ankle/foot (9). However, limited evidence is available regarding the overall prevalence of musculoskeletal pain and discomfort across multiple anatomical regions among clinical physiotherapists in Lahore, particularly with comparison between male and female physiotherapists. This gap limits the ability to design targeted ergonomic, preventive, and gender-sensitive workplace interventions for this professional group.

The present study therefore focuses on clinical physiotherapists in Lahore as the population of interest, gender as the main comparison variable, and musculoskeletal pain and discomfort across nine anatomical regions as the primary outcome. By assessing pain prevalence, affected body regions, and severity patterns among male and female physiotherapists, the study aims to provide clinically useful evidence for occupational health planning, ergonomic awareness, and preventive strategies in physiotherapy practice. The research question guiding this study is: among clinical physiotherapists working in Lahore, what is the prevalence of musculoskeletal pain and discomfort across major body regions, and how does this prevalence and severity differ between male and female physiotherapists?

MATERIALS AND METHODS

This cross-sectional observational study was conducted to determine the prevalence of musculoskeletal pain and discomfort among clinical physiotherapists in Lahore and to examine its association with gender. A quantitative survey-based design was selected because the study aimed to estimate the frequency of musculoskeletal symptoms across multiple anatomical regions and compare their distribution between male and female physiotherapists at a single point in time.

The study was carried out in selected hospitals and certified physiotherapy clinics in Lahore, including Jinnah Hospital, Central Park Teaching Hospital, Evercare Hospital, Latif Hospital, Hameed Latif Hospital, Surayya Azeem Hospital, Doctors Hospital, Farooq Hospital, WAPDA Hospital, and private clinical settings. Data were collected over a four-month period after institutional ethical approval and administrative permission from the relevant clinical sites.

The study population consisted of clinical physiotherapists practicing in Lahore. Participants were eligible if they were male or female clinical physiotherapists, had at least two years of clinical experience, and worked for a minimum of six hours per day in a clinical setting.

Physiotherapists with a history of musculoskeletal injury caused by accident during the preceding one year were excluded to reduce the likelihood that recent traumatic pain would be misclassified as work-related musculoskeletal discomfort. Participants were selected using a non-probability convenience sampling technique from the included hospitals and clinics. Equal numbers of male and female physiotherapists were recruited to allow gender-based comparison. The final sample included 140 participants, comprising 70 female and 70 male clinical physiotherapists.

The sample size was calculated using the WHO sample size calculator. A total sample of 140 participants was considered adequate for estimating the prevalence of musculoskeletal pain and discomfort and for examining gender-based differences in reported symptoms.

Recruitment was performed through direct contact with eligible physiotherapists at the selected clinical settings. The purpose of the study, voluntary nature of participation, confidentiality of responses, and right to withdraw were explained before data collection. Written informed consent was obtained from each participant before administration of the questionnaire.

Data were collected using a structured questionnaire that included demographic information, occupational eligibility information, musculoskeletal pain and discomfort by anatomical region, and pain severity. The Standardized Nordic Musculoskeletal Questionnaire was used to identify the presence or absence of musculoskeletal pain and discomfort in nine body regions: neck, shoulder, elbow, hand/wrist, upper back, lower back, hip/thigh, knee, and ankle/foot (8).

Pain severity was assessed using the Numeric Pain Rating Scale, which categorized pain intensity into no pain, mild pain, moderate pain, and severe pain according to participant-reported intensity (9). Musculoskeletal pain was operationally defined as pain affecting bones, joints, muscles, ligaments, tendons, or related soft tissues, whether localized to a specific anatomical region or experienced more broadly.

Discomfort was defined as an unpleasant physical sensation associated with strain, fatigue, aching, stiffness, or irritation in the musculoskeletal region. A clinical physiotherapist was defined as a healthcare professional involved in the assessment, treatment, rehabilitation, and functional management of patients with movement-related, pain-related, or musculoskeletal conditions.

The primary outcome variable was the prevalence of musculoskeletal pain and discomfort in each of the nine anatomical regions. The main independent variable was gender, categorized as male or female. Additional variables included age group and pain severity. For each body region, pain and discomfort were recorded as present or absent. Severity of pain was recorded according to the participant's response

on the Numeric Pain Rating Scale and then grouped into no pain, mild pain, moderate pain, and severe pain. The comparison of male and female participants was performed separately for each anatomical region to identify gender-wise differences in the distribution of musculoskeletal pain and discomfort.

Several procedural steps were applied to reduce information bias and improve data consistency. All participants received the same questionnaire format, the same anatomical regions were assessed for every participant, and the same pain severity scale was used across the full sample. Eligibility criteria were applied uniformly to male and female participants.

Participants with recent accident-related musculoskeletal injury were excluded to reduce misclassification of traumatic pain as occupational musculoskeletal pain. Equal recruitment of male and female physiotherapists was used to support balanced gender comparison. Data were reviewed for completeness before entry, and responses were coded consistently for statistical analysis.

Data were entered and analyzed using SPSS version 24. Descriptive statistics were calculated for all study variables. Frequencies and percentages were used to summarize categorical variables, including age group, gender, presence or absence of pain in each anatomical region, and pain severity category. The prevalence of musculoskeletal pain and discomfort was calculated by dividing the number of participants reporting pain in each body region by the total number of participants.

Gender-wise prevalence was calculated separately for male and female participants. The chi-square test was used to assess the association between gender and musculoskeletal pain and discomfort for each anatomical region. Gender-based differences in pain severity were also assessed using cross-tabulation and chi-square analysis. A p-value of less than 0.05 was considered statistically significant.

Ethical approval was obtained from the Research Ethics and Support Committee of the university before data collection. Permission was obtained from the selected hospitals and clinics where required. Participation was voluntary, and informed consent was obtained from all participants.

Confidentiality was maintained by using coded responses instead of personal identifiers. The collected data were used only for research purposes, and access to the dataset was restricted to the research team. Data integrity was maintained through standardized data collection procedures, consistent coding of variables, review of completed questionnaires, and analysis using predefined statistical procedures.

RESULTS

A total of 140 clinical physiotherapists were included in the study. The sample was equally distributed by gender, with 70 female participants and 70 male participants. Most participants were young adults, with 103 participants (73.6%) aged 25–30 years, followed by 21 participants (15.0%) aged 31–35 years, 11 participants (7.9%) aged 36–40 years, and 5 participants (3.6%) aged 41–45 years.

Table 1. Demographic Characteristics of Participants (N = 140)

Variable	Category	Frequency (n)	Percentage (%)
Age group	25–30 years	103	73.6
	31–35 years	21	15.0
	36–40 years	11	7.9
	41–45 years	5	3.6
Gender	Female	70	50.0
	Male	70	50.0

Musculoskeletal pain and discomfort were reported across all assessed anatomical regions. The most frequently affected region was the lower back, reported by 55 participants (39.3%), followed by the neck, reported by 52 participants (37.1%). Shoulder pain was reported by 17 participants (12.1%), while upper back and ankle/foot pain were reported by 16 participants (11.4%). Hand/wrist, hip/thigh, and knee pain were each reported by 11 participants (7.9%). Elbow pain was the least frequently reported region, affecting 6 participants (4.3%).

Table 2. Overall Prevalence of Musculoskeletal Pain and Discomfort by Anatomical Region (N = 140)

Anatomical Region	Pain Present n (%)	Pain Absent n (%)	Total n (%)
Neck	52 (37.1)	88 (62.9)	140 (100.0)
Shoulder	17 (12.1)	123 (87.9)	140 (100.0)
Elbow	6 (4.3)	134 (95.7)	140 (100.0)
Hand/Wrist	11 (7.9)	129 (92.1)	140 (100.0)
Upper Back	16 (11.4)	124 (88.6)	140 (100.0)
Lower Back	55 (39.3)	85 (60.7)	140 (100.0)
Hip/Thigh	11 (7.9)	129 (92.1)	140 (100.0)
Knee	11 (7.9)	129 (92.1)	140 (100.0)
Ankle/Foot	16 (11.4)	124 (88.6)	140 (100.0)

Gender-wise analysis showed that neck pain was reported by 36 female participants (51.4%) and 16 male participants (22.9%). Female participants had significantly higher odds of reporting neck pain than male participants, with an odds ratio of 3.57 and a 95% confidence interval of 1.72–7.41; this association was statistically significant (p = 0.001). Lower back pain was also more frequent among females, with 36 female participants (51.4%) and 19 male participants (27.1%) reporting pain. Female gender was significantly associated with higher odds of lower back pain, with an odds ratio of 2.84 and a 95% confidence interval of 1.40–5.75 (p = 0.005).

For the remaining anatomical regions, the observed gender differences were not statistically significant. Shoulder pain was reported by 9 females (12.9%) and 8 males (11.4%). Hand/wrist pain was higher among females, with 8 cases (11.4%) compared with 3 cases (4.3%) among males, but the association did not reach statistical significance (p = 0.208). Upper back pain was reported by 11 females (15.7%) and 5 males (7.1%), also without statistical significance (p = 0.183). Elbow pain was more frequent among males, with 4 cases (5.7%) compared with 2 cases (2.9%) among females. Knee pain was reported by 5 females (7.1%) and 6 males (8.6%). Ankle/foot pain was equally distributed between both genders, with 8 females (11.4%) and 8 males (11.4%) affected.

Table 3. Association Between Gender and Musculoskeletal Pain by Anatomical Region

Anatomical Region	Female Pain Present n/N (%)	Male Pain Present n/N (%)	Odds Ratio (Female vs Male)	95% CI	p-value
Neck	36/70 (51.4)	16/70 (22.9)	3.57	1.72–7.41	0.001
Shoulder	9/70 (12.9)	8/70 (11.4)	1.14	0.41–3.16	1.000
Elbow	2/70 (2.9)	4/70 (5.7)	0.49	0.09–2.74	0.681
Hand/Wrist	8/70 (11.4)	3/70 (4.3)	2.88	0.73–11.35	0.208
Upper Back	11/70 (15.7)	5/70 (7.1)	2.42	0.80–7.39	0.183
Lower Back	36/70 (51.4)	19/70 (27.1)	2.84	1.40–5.75	0.005
Hip/Thigh	6/70 (8.6)	5/70 (7.1)	1.22	0.35–4.19	1.000
Knee	5/70 (7.1)	6/70 (8.6)	0.82	0.24–2.82	1.000
Ankle/Foot	8/70 (11.4)	8/70 (11.4)	1.00	0.35–2.83	1.000

Pain severity differed by gender. Among female participants, 2 (2.9%) reported no pain, 18 (25.7%) reported mild pain, 40 (57.1%) reported moderate pain, and 10 (14.3%) reported severe pain. Among male participants, 8 (11.4%) reported no pain, 28 (40.0%) reported mild pain, 26 (37.1%) reported moderate pain, and 8 (11.4%) reported severe pain. Moderate-to-severe pain was therefore observed in 50 female participants (71.4%) compared with 34 male participants (48.6%). Female participants had higher odds of moderate-to-severe pain than male participants, with an odds ratio of 2.65 and a 95% confidence interval of 1.32–5.33. The gender-wise distribution of pain severity was statistically significant (p = 0.030).

Table 4. Gender-Wise Distribution of Pain Severity

Pain Severity	Female n (%)	Male n (%)	Total n (%)
No pain	2 (2.9)	8 (11.4)	10 (7.1)
Mild pain	18 (25.7)	28 (40.0)	46 (32.9)
Moderate pain	40 (57.1)	26 (37.1)	66 (47.1)
Severe pain	10 (14.3)	8 (11.4)	18 (12.9)
Total	70 (100.0)	70 (100.0)	140 (100.0)

Inferential statistic: $\chi^2 = 8.97$, df = 3, p = 0.030. For moderate-to-severe pain versus no/mild pain, OR = 2.65, 95% CI = 1.32–5.33, p = 0.009.

Overall, the results showed that lower back and neck were the most frequently affected musculoskeletal regions among clinical physiotherapists. Gender-wise comparison demonstrated statistically significant differences for neck pain and lower back pain, both of which were more common among female participants. Pain severity also showed a significant gender-wise difference, with moderate and severe pain reported more frequently among females, while no pain and mild pain were more frequent among males.

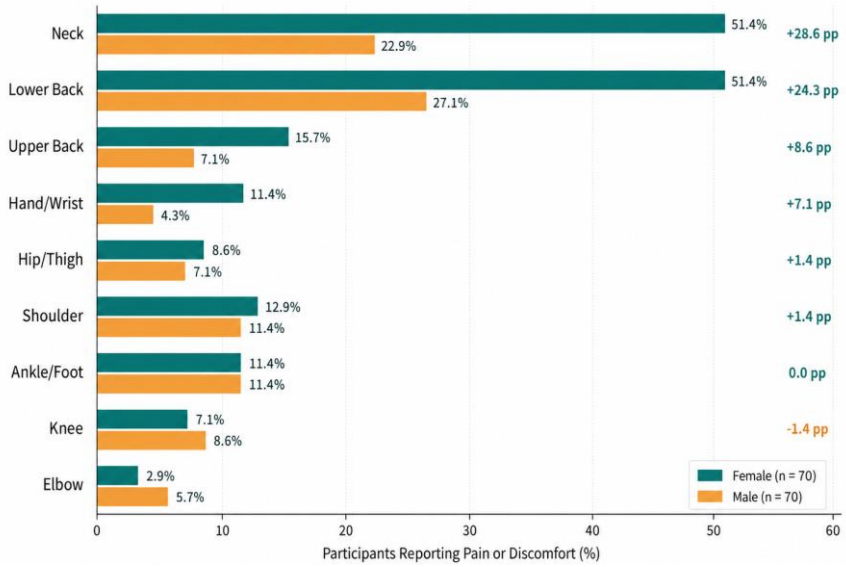

Figure 1. Gender Gradient in Regional Musculoskeletal Pain Among Clinical Physiotherapists

Female physiotherapists showed the largest excess prevalence for neck pain, with 36/70 participants affected compared with 16/70 males, representing 51.4% versus 22.9% and a +28.6 percentage-point difference. Lower back pain followed a similar pattern, affecting 51.4% of females and 27.1% of males, with a +24.3 percentage-point female predominance. Smaller female-positive gradients were observed for upper back pain (15.7% vs 7.1%), hand/wrist pain (11.4% vs 4.3%), hip/thigh pain (8.6% vs 7.1%), and shoulder pain (12.9% vs 11.4%). Ankle/foot pain was equally distributed between genders at 11.4% each, while knee pain and elbow pain showed slightly higher male prevalence, at 8.6% vs 7.1% and 5.7% vs 2.9%, respectively. Clinically, the visualization highlights that the gender difference is concentrated mainly in axial regions, particularly the neck and lower back, rather than being evenly distributed across all musculoskeletal sites.

DISCUSSION

The present study evaluated the prevalence of musculoskeletal pain and discomfort among clinical physiotherapists in Lahore and examined gender-wise differences across nine anatomical regions. The findings showed that musculoskeletal symptoms were present in multiple body regions, with the lower back and neck emerging as the most frequently affected sites. Lower back pain was reported by 39.3% of participants, while neck pain was reported by 37.1%. These findings indicate that axial musculoskeletal regions bear a substantial burden among practicing physiotherapists, which is consistent with the physical demands of clinical physiotherapy, including prolonged standing, sustained trunk flexion, patient handling, manual therapy, repetitive upper-limb activity, and maintenance of non-neutral postures during treatment sessions. The distribution of pain across regions suggests that musculoskeletal discomfort among physiotherapists is not limited to one isolated anatomical site but reflects cumulative occupational exposure involving both spinal and peripheral body regions.

The higher prevalence of lower back pain observed in this study may be explained by the biomechanical load imposed during patient transfers, assisted mobility, exercise demonstration, manual resistance, and prolonged standing. Physiotherapists frequently perform tasks that require forward bending, rotational

movements, lifting, and sustained postural control, all of which may increase mechanical stress on the lumbar region. This finding is comparable with previous studies reporting lower back pain as a common occupational complaint among healthcare workers and physiotherapists, particularly in those exposed to physically demanding clinical duties and prolonged working hours (10,11). The lower back is especially vulnerable because it functions as a central load-bearing region during manual handling and therapeutic activity, and repeated exposure to awkward postures may contribute to fatigue, discomfort, and pain.

Neck pain was the second most frequently reported musculoskeletal complaint and showed one of the clearest gender-wise differences. Female physiotherapists reported neck pain more frequently than male physiotherapists, with 51.4% of females affected compared with 22.9% of males. This statistically significant difference suggests that gender may influence either the exposure to neck-related ergonomic stressors, the physiological response to such stressors, or the reporting of pain. Neck pain among physiotherapists may arise from sustained cervical flexion during patient assessment, documentation, electrotherapeutic procedures, manual techniques, and close observation of patient movement. Similar findings have been reported in healthcare professionals whose work requires prolonged static posture, forward head positioning, and repetitive clinical tasks (12,13). The observed female predominance may also relate to anatomical and physiological differences, differences in muscle endurance, work–life load, psychosocial stressors, or variation in pain sensitivity and symptom reporting between genders (14).

Lower back pain also demonstrated a significant gender-wise difference, affecting 51.4% of female physiotherapists compared with 27.1% of male physiotherapists. This finding suggests that female physiotherapists may experience greater vulnerability to lumbar discomfort in clinical practice. Possible explanations include differences in body mechanics, relative muscle strength, anthropometric compatibility with treatment plinth height, patient-handling demands, and cumulative occupational and domestic workload. Although the study did not directly measure ergonomic exposures, the pattern of findings supports the need to consider gender-sensitive preventive strategies in physiotherapy workplaces. Previous research has also reported that women may experience musculoskeletal pain more frequently or with greater severity than men, particularly in occupations involving repetitive work, prolonged standing, and sustained postural demands (15,16).

Pain in the shoulder, upper back, hand/wrist, hip/thigh, knee, elbow, and ankle/foot regions was less frequent than neck and lower back pain. Shoulder pain was reported by 12.1% of participants, upper back pain and ankle/foot pain each by 11.4%, and hand/wrist, hip/thigh, and knee pain each by 7.9%. Elbow pain was the least common complaint, affecting 4.3% of participants. These findings indicate that although spinal regions were the dominant sites of pain, peripheral musculoskeletal symptoms were also present. Hand/wrist pain among physiotherapists may be linked with manual therapy, soft tissue techniques, mobilization, and repetitive use of therapeutic equipment, while shoulder and upper back symptoms may be associated with sustained arm elevation, force application, and static postural loading during treatment. Lower-limb pain, including hip/thigh, knee, and ankle/foot discomfort, may reflect prolonged standing, walking between treatment areas, exercise demonstration, and inadequate rest during clinical shifts (17).

Most peripheral-region gender differences were small and did not show statistically significant associations. Shoulder pain was nearly similar between females and males, while hip/thigh pain also showed only a minor difference. Ankle/foot pain was equally distributed between both genders, indicating that some occupational exposures may affect male and female physiotherapists similarly. Knee and elbow pain were slightly more frequent among male participants, but the small number of affected participants limits the strength of interpretation. These patterns suggest that gender-related differences in this study were most pronounced for axial pain regions, particularly the neck and lower back, rather than being uniformly present across all musculoskeletal sites (18).

Pain severity findings further support the gender-related burden of musculoskeletal discomfort. Moderate-to-severe pain was reported more frequently among female physiotherapists than male physiotherapists, while no pain and mild pain were more common among males (19). This indicates that gender differences were not restricted to the presence of pain alone but also extended to pain intensity. Greater severity among females may reflect a combination of biomechanical, physiological, psychosocial, and occupational factors. From a clinical and occupational-health perspective, this finding is important because moderate and severe pain may interfere with treatment performance, endurance, concentration, patient handling, and long-term work participation. Persistent or intense musculoskeletal pain may also increase the risk of reduced productivity, absenteeism, and reduced quality of care.

The findings are clinically relevant because physiotherapists are responsible for managing musculoskeletal disorders in patients, yet their own occupational exposure places them at risk of similar symptoms. This dual role highlights the importance of preventive strategies within physiotherapy practice settings. Ergonomic training, correct patient-handling techniques, adjustable treatment plinths, scheduled microbreaks, workload distribution, strengthening exercises, postural awareness, and early screening for pain symptoms may help reduce occupational musculoskeletal burden. The higher prevalence and severity of pain among female physiotherapists also suggest that workplace interventions should consider gender-specific needs, including ergonomic fit, task allocation, and recovery opportunities.

The study has several limitations that should be considered when interpreting the findings. The cross-sectional design allows estimation of prevalence and gender-wise association but does not establish causality or temporal sequence. The use of self-reported pain data may introduce recall bias or reporting bias. The study was conducted in Lahore and included clinical physiotherapists from selected hospitals and private clinics, which may limit generalizability to physiotherapists working in other cities, academic settings, rehabilitation centers, or community-based practice. The analysis focused primarily on gender and did not adjust for other potential contributing factors such as body mass index, workload intensity, number of patients treated per day, treatment specialty, ergonomic training, physical activity level, psychological stress, or type of clinical tasks performed. Despite these limitations, the study provides useful local evidence on the anatomical distribution and gender-wise pattern of musculoskeletal pain among clinical physiotherapists.

Overall, the findings indicate that musculoskeletal pain and discomfort are common among clinical physiotherapists in Lahore, with the greatest burden observed in the lower back and neck. Female physiotherapists reported significantly higher prevalence of neck and lower back pain and showed greater pain severity than male physiotherapists. These results emphasize the need for preventive occupational-health strategies, ergonomic modifications, and gender-sensitive workplace interventions to reduce musculoskeletal burden and support the long-term health and clinical performance of physiotherapists.

CONCLUSION

Musculoskeletal pain and discomfort were common among clinical physiotherapists in Lahore, with the highest prevalence observed in the lower back and neck regions. Lower back pain affected 39.3% of participants, while neck pain affected 37.1%, indicating that axial musculoskeletal regions were the most vulnerable sites in this clinical population. Gender-wise analysis showed that female physiotherapists experienced a higher burden of pain than male physiotherapists, particularly in the neck and lower back, and were more likely to report moderate-to-severe pain. In contrast, pain in peripheral regions such as the shoulder, elbow, hand/wrist, hip/thigh, knee, and ankle/foot was less frequent and showed smaller gender differences. These findings suggest that occupational musculoskeletal discomfort among physiotherapists is strongly concentrated in spinal regions and that female physiotherapists may require particular attention in ergonomic and preventive workplace strategies. Implementing posture education,

safe patient-handling techniques, workload modification, scheduled rest breaks, and gender-sensitive ergonomic interventions may help reduce musculoskeletal burden and support the long-term health, productivity, and clinical performance of physiotherapists.

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