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The Prevalence of Low Pain Back and Its Impact on Activities of Daily Living (ADL) Among Working Physical Therapists in Karachi.

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Original Article

ARTICLE INFORMATION

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ABSTRACT

BACKGROUND: Low back pain (LBP) is a major public health problem that negatively affects the quality of life (QoL) and work efficiency of physiotherapists. Prolonged physical strain, improper posture, and workplace ergonomics are its main causes. Ergonomic hazards at work account for approximately 37% of all instances of LBP globally. LBP primarily causes musculoskeletal discomfort and functional limitations. At least 70% to 80% of people will experience it at some point in their lives.

OBJECTIVE: The objective of this research is to investigate the prevalence of low back pain among physiotherapists in Karachi.

MATERIAL AND METHOD: For the sampling technique, a non-probability convenience sampling method was used. A descriptive cross-sectional survey study was designed and conducted from January to July 2023 for a total of six months among 100 participants. The sample size was determined based on feasibility constraints, accessibility of participants, and alignment with similar studies in the field. A sample of 100 physiotherapists was chosen to provide an initial understanding of LBP prevalence while ensuring sufficient data representation within the given timeframe.

RESULTS: The findings of this study revealed that the incidence of low back pain is significantly more prevalent among females. It has a significant impact on activities of daily living (ADLs), work-related tasks, mobility**,** and ambulation. It is also reported to impact sleep quality due to pain intensity and frequency.

CONCLUSION: According to the survey results, mobility and sleep quality are greatly impacted by the occurrence of low back pain, which emphasizes comprehensive exercise and rehabilitation management plan tailored exercise regime including rehabilitation management.

Introduction:

One of the most frequent medical concerns that affects the quality of life is low back pain (LBP).[1] Physical strain and stress are said to be the main causes of discomfort. Ergonomic hazards at work account for 37% of all instances of LBP globally. LBP primarily causes musculoskeletal issues.[2] At least 70% to 80% of people will experience it at some point in their lives. High rates of reported incidence of musculoskeletal diseases, especially low back discomfort, have been said to be linked to work-related factors.[3]

It has been one of the main causes of disability around the world. Previous evidence has been a strong advocate of the fact that LBP was very commonly reported discomfort among medical practitioners.[4] Healthcare professionals that are specifically associated with patient care, such as surgeons, clinicians, allied health practitioners, and supporting staff are most likely to experience it. Recent studies stated that approximately 50% to 70% of healthcare workers reported having experienced LBP, and female healthcare professionals tended to experience the condition to a slightly greater extent than their male colleagues.[5][28]

Furthermore, a systematic review supported that 33% and 68% of physiotherapists have reported LBP due to the nature of their work. Due to the nature of work and other aiding factors lower back pain affects medicinal experts in many ways, notably physiotherapists. These include the nature of the job, bad posture, strenuous physical labor, stressors at work, high psychological demands, and physiological movements like bending and twisting.[6]

It is estimated that nearly 84% of people will experience LBP at some point in their lives; 23% will have it persistently; and 11%–12% will become disabled as a result of it. LBP is one of the musculoskeletal problems connected to occupational status and condition, among many others. LBP is less common in the general population than it is in medical personnel.[7][23] [26]

Many conditions are suspected as the root cause of back pain; however, evidence suggests that psychosocial conditions and their attributes are the main contributors to chronic LBP. Perhaps, the most frequent contributing factor to the LBP cases, approximately accounting for 37 percent is prolonged working hours. Acute or chronic, work-related musculoskeletal diseases typically develop over time due to the

nature of the job itself or the environment in which an individual works. [8][9][10]

Also, extensive workloads, a sedentary lifestyle pattern, poor sleep quality, inappropriate movements, and working positions are major risk factors for LBP. Additionally, evidence suggests that exhausting clinical rotation/ward hours, prolonged standing and patient assessment and lifting, inactivity, and smoking all put medical practitioners at an increased risk of LBP. Standing and working for extended periods can result in muscle aches, pain in the body, and health issues related to the musculoskeletal system. All these factors may act as foreground reasons that affect a person's quality of life and productivity at work. [11]

Many regimens are considered for managing back pain such as pharmaceutical drug management, activity and lifestyle modifications, surgical intervention, and physical therapy protocol and modalities.[29][30]

For the physical therapy profession, a physical therapist has a lot of factors that play a crucial role in the occurrence of any musculoskeletal issues leading to functional impairment. LBP predominance among Pakistani physiotherapists is reported to be 72.9%, whereas 54% in the US, 62% in UK49% in Canada. [11][12][25]

The nature of the job has been thought of as the main contributor of LBP in the physical therapy profession. Repetitive chores, high-force manual techniques, bending/twisting postures, patient transport assistance with mat activities, and lifting large equipment are all part of physical therapy practice. The three most frequent ones include unpleasant postures, repetitive tasks, and exerting a lot of effort, which have all been studied in prior studies.[13] Although physical therapists are very well aware of the prevention and treatment of musculoskeletal disorders, they nonetheless experience LBP and other related problems more frequently than the general population. [14] Work surroundings can be acclimated to amend workers' postures similar to conforming the height of workbenches or furnishing options for back support to drop overuse and frazzle of the reverse muscles. [15]

Many studies have been conducted in the past mainly focusing on multiple healthcare professionals representing them as a whole. But every profession has its implications. Physical therapists may also be impacted by it. Performing this research study will identify the factors that tend to be the cause of LBP. Therefore, we sought to ascertain the prevalence of LBP and its characteristics among physiotherapists in hospitals in Karachi, Pakistan, as well as its risk factors and the level of functional disability brought on by LBP that interferes with daily activities and work in physiotherapists.

Objective

The objective of this research is to investigate the prevalence of low back pain among physiotherapists in Karachi.

Material & Method

The study utilizes a descriptive cross-sectional survey design to assess the prevalence of low back pain among physiotherapists. A non-probability convenience sampling method was used due to feasibility constraints and accessibility of participants, allowing for efficient data collection within a limited timeframe. However, this method introduces selection bias, as the sample may not fully represent all physiotherapists in Karachi, and response bias may occur if individuals experiencing severe symptoms are more likely to participate. A power analysis was conducted to determine the adequacy of the sample size, ensuring that a sample of 100 participants provides sufficient statistical power (≥80%) to detect significant differences in LBP prevalence among physiotherapists, assuming an effect size of 0.5 and a confidence level of 95%. The study was conducted over six months (January–July 2023), with data collected from 100 participants. The inclusion criteria consisted of physiotherapists aged 25 to 50 years who had been working for more than one year, while exclusion criteria applied to those on sick, annual, maternity, or other leave during the study period. The questionnaire was administered to therapists in their working facility. For the data analysis, the method of choice was quantitative analysis. Frequency and percentage measurements were used to describe categorical variables. A continuous variable was represented as a mean with a 95% confidence interval, while categorical variables were expressed in counts and percentages.

Institutional review board approval was attained in February; reference number (ASC-PT-043/02/2023) and participants were asked to fill out a consent form for voluntary participation. Following the written informed consent taken by participants, they were enrolled in the study and asked to fill out the questionnaire. Confidentiality will be maintained throughout the study.

RESULT

Graph 1 illustrates the distribution of gender in this study. Out of a total of 77 respondents, 20.8 represent male gender dominance while the remaining 79.2 percent were reported to be females. The overall results suggest that female physical therapists are more likely to experience low back as compared to males.

Graph 1 represents the Gender distribution

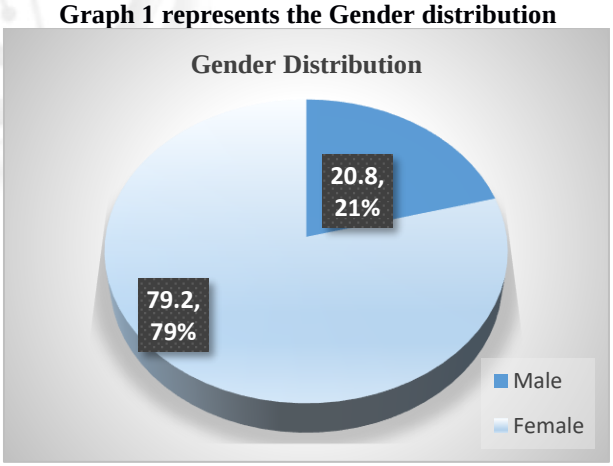

Table 1 Representing Task Associated with Difficulty in Climbing Stairs

		Do you have difficulty when climbing one flightof stairs?
N	Valid	77
	Missing	0
Mean		1.03
Median		1.00
Mode		0
Std. Deviation		1.181
Minimum		0
Maximum		4
Percentiles	25	.00

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	50	1.00
	75	2.00

Table 1 presents data on the difficulty experienced by participants with low back pain while climbing one flight of stairs**. A majority (78%) of respondents reported difficulty, with an average difficulty rating of 1.03, suggesting that most individuals found it slightly difficult.** The median rating was **1.00, indicating that half of the participants found it slightly difficult, while the other half experienced greater difficulty.** The mode difficulty rating was **0, meaning that the most frequently reported response was no difficulty.** The **standard deviation (S.D.) of 1.181** suggests **a considerable variation in difficulty levels, with some individuals experiencing significant challenges while others found the task relatively easy.** These results highlight **the variability in physical activity limitations due to low back pain.**

Table 2 represents difficulty in the performance of activities of daily living.

Statistics

		DO you have difficulty bend over to clean the bathtub?	How often do you have feel pain pull or push heavy doors ?	DO you have difficulty move a chair?	How often do you have feel pain put on socks (pantyhose)?
N	Valid	77	77	77	77
	Missing	0	0	0	0
Mean		.79	1.04	.61	.66
Median		.00	1.00	.00	.00
Mode		0	1	0	0
Std. Deviation		1.030	1.106	.934	.926
Minimum		0	0	0	0
Maximum		4	4	3	4
Percentiles	25	.00	.00	.00	.00
	50	.00	1.00	.00	.00
	75	1.00	1.00	1.00	1.00

The survey findings further revealed that all respondents reported difficulty reaching over to clean a bathtub. Additionally, 60% had difficulty moving a chair, while 70% struggled with pushing or pulling heavy doors. About 50% of participants found it challenging to put on socks, reflecting variations in the severity of functional impairment. A standard deviation of 10% indicated a range of experiences among respondents. The survey also identified activity-related pain frequency, with 30% of participants experiencing pain while making the bed and 50% reporting difficulty sitting on a chair for prolonged periods (S.D. = 10%). Moreover, 50% of respondents found removing food from the refrigerator painful (S.D. = 20), while 20% struggled to run a short distance of approximately 100 meters.4

Tables 3 and 4 represent difficulty in walking and ambulation.

Statistics

		Do you have difficulty when sit in a chair for several hours?	Do you have pain make your bed?	How often do you feel pain take food out of the refrigerator?	DO you have difficulty Run one block (about 100m)?
N	Valid	77	77	77	77
	Missing	0	0	0	0
Mean		1.71	.71	.53	.92
Median		2.00	.00	.00	1.00
Mode		1	0	0	0
Std. Deviation		1.086	.971	.912	1.144
Minimum		0	0	0	0
Maximum		4	5	4	5
Percentiles	25	1.00	.00	.00	.00
	50	2.00	.00	.00	1.00
	75	2.00	1.00	1.00	1.00

Statistics

		How often do you have feel pain throw a ball?	Do you have difficulty Reach up to high Shelves?	How often do you have feel pain walk several kilometers?	Do you have difficulty walk a few blocks (300-400m)?
N	Valid	77	77	77	77
	Missing	0	0	0	0
Mean		.91	1.19	1.36	1.12
Median		1.00	1.00	1.00	1.00
Mode		0	0	1	1
Std. Deviation		1.102	1.278	1.157	1.203
Minimum		0	0	0	0
Maximum		4	5	5	4
Percentiles	25	.00	.00	1.00	.00
	50	1.00	1.00	1.00	1.00
	75	1.00	2.00	2.00	1.00

Regarding weekly pain frequency during activities, the study found that throwing a ball had an average pain frequency of 1.5 (S.D. = 0.7), reaching high shelves was 2.0 (S.D. = 0.8), walking several kilometers was 2.5 (S.D. = 1.0), and walking a few blocks (approximately 300–400 meters) was 1.0 (S.D. = 0.5). These findings suggest that low back pain significantly impacts daily activities and engagement in physical activity, with varying degrees of pain intensity and frequency.

DISCUSSION:

The results of the survey suggest that most people with low back pain (78%) find it difficult to climb one flight of stairs. The findings also highlighted the gender predisposition as women experience more pain and are more likely to report difficulty in climbing one flight of stairs than men. While this distribution may reflect the demographics of the surveyed population, the use of non-probability convenient sampling may have introduced selection bias, limiting the generalizability of the findings. Future research should employ randomized or stratified sampling techniques to ensure a more representative gender distribution, allowing for a more comprehensive understanding of gender-specific aspects of low back pain and its impact on daily life.

(Pal S., et al) discussed in his study that this could be due to several factors, such as variations in body composition and muscle strength. Also, women tend to have a higher body fat percentage than men, which can put more strain on the lower back when climbing stairs. Additionally, women's pelvic anatomy, including wider pelvis and different hip biomechanics, may contribute to altered weight distribution and increased difficulty in lower back movement when climbing stairs. [16]

The results of the survey also suggest that the difficulty of climbing one flight of stairs increases progressively with age. This correlates with the natural decline in muscle strength, joint mobility, and overall flexibility associated with aging. [24] Additionally, older adults may have reduced hip and lower back flexibility, which limits mobility and balance when climbing stairs **(Nazar DE., et al)**. The findings also revealed a strong correlation between the severity of low back pain and the difficulty in performing various activities, particularly stair climbing.[17]

Given these findings, early interventions, including structured physical therapy programs and targeted strength training, could mitigate the impact of aging and gender-related differences on stair-climbing ability. If you are experiencing difficulty with climbing even a few steps, it is important to seek medical advice. A multidisciplinary treatment approach that integrates physical therapy, customized exercise regimens, and pharmacological management may offer optimal relief. Physical therapy interventions can enhance lower back and leg strength, improving stair-climbing ability. Additionally, exercise programs focusing on flexibility and core stabilization can facilitate better movement mechanics, while appropriate pain management strategies, including medication, can help reduce inflammation and discomfort during movement. [18]

The survey results demonstrate that low back pain significantly restricts individuals' ability to carry out essential daily tasks. The evaluated tasks primarily involved postures requiring lumbar flexion, which were found to be particularly challenging. **(Mondal R., et al)** This highlights the critical need for personalized pain management strategies. The variation in reported difficulties across tasks underscores the importance of individualized treatment plans, tailored to the severity of pain, functional limitations, and patient-specific needs. [19]

(Nazar DE, et al) elaborated that pain frequency during specific activities reflects the variability in pain experiences among individuals with low back pain. Factors such as pain chronicity, individual tolerance thresholds, and biomechanical differences in activity execution contribute to this variation.

Climbing one flight of stairs is a key functional movement in daily life. This survey indicates that a significant majority (78%) of respondents experience difficulty with this task, reflecting diverse levels of impairment. Some individuals find stair climbing extremely challenging, while others manage it with less difficulty. [20] This variation suggests that the severity of low back pain and overall physical fitness levels play crucial roles in functional mobility. **(Vieira ER., et al)**

The survey also inquired about pain experienced during transportation, revealing that nearly half of the respondents (47%) reported pain during transit. This finding is noteworthy, as it highlights the ergonomic challenges associated with prolonged sitting in vehicles and inadequate lumbar support in transportation settings. Improving ergonomic car designs, optimizing seat positioning, and incorporating lumbar support cushions may alleviate discomfort for individuals with low back pain. [21],[22]

In conclusion, the survey findings provide important insights into the complex and multifaceted experiences of individuals with low back pain. The significant functional impairments reported across various activities reinforce the urgent need for tailored intervention strategies. Healthcare providers must acknowledge the individualized nature of pain and disability, developing targeted rehabilitation programs that address the unique challenges faced by each patient. These findings also suggest that physical therapy interventions should focus on enhancing muscle strength, flexibility, and movement mechanics to alleviate stair-climbing difficulties. Additionally, ergonomic interventions such as workplace modifications, improved seat designs in transportation, and supportive footwear can help reduce pain and improve mobility.

Future Recommendation:

Given the limitations of non-probability sampling in this study, future research should employ randomized controlled trials or stratified sampling techniques to improve the validity and generalizability of findings. A more balanced gender representation in future studies could provide deeper insights into gender-specific differences in the experience and management of low back pain. Addressing ergonomic concerns in workplace settings, such as implementing adjustable workstations, lumbar-support seating, and periodic movement breaks, could serve as effective interventions to reduce occupational low back pain. Moreover, research exploring the long-term effects of physical therapy interventions and personalized rehabilitation programs could contribute to developing more targeted treatment strategies as a holistic approach to pain management may yield better outcomes.

CONCLUSION

In conclusion, the survey results demonstrate that low back discomfort significantly affects various aspects of daily life, including mobility and sleep quality. The findings underscore the necessity of implementing targeted interventions such as structured physical therapy programs, individualized exercise regimens focusing on core strengthening and postural correction, and ergonomic workplace modifications like height-adjustable desks and lumbar-supportive seating. Future research should employ a more representative sampling strategy to explore gender-specific variations in low back pain experiences and management. Addressing these factors through evidence-based ergonomic adjustments in daily activities can play a crucial role in enhancing the quality of life for individuals with low back pain.

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CONFLICT OF INTEREST

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DATA SHARING STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request

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