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# SELF-REPORTED FUNCTIONING AND BOTHERSOMENESS IN ADULTS WITH POSTURAL LOW BACK PAIN

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## ABSTRACT

### BACKGROUND & OBJECTIVE:

*Limited empirical evidence exists regarding adults' perceptions of functioning and bothersomeness associated with postural low back pain. Poor posture has been implicated in the genesis of both acute and chronic low back pain, as well as other musculoskeletal disorders, within the adult population. The sequelae of postural low back pain can significantly impair activities of daily living, emotional well-being, upper and lower extremity function, and community participation. In this study, functioning and bothersomeness were assessed as key outcome measures to quantify the impact of symptoms on daily activities and the degree of discomfort experienced by individuals. These parameters were evaluated using the Short Musculoskeletal Functional Assessment (SMFA), a self-reported questionnaire. The primary objective of this investigation was to ascertain the self-reported levels of functioning and bothersomeness among adults experiencing postural backache in the Rawalpindi and Islamabad regions.*

### METHODOLOGY:

*This study included 327 adult participants ranging in age from 18 to 44 years. The primary self-reported outcome measure utilized was the Short Musculoskeletal Functional Assessment (SMFA), which comprises two subcategories: the Functional Index and the Bothersomeness Index. A descriptive cross-sectional study design was chosen. Data were collected through both hard-copy questionnaires and web-based surveys disseminated online. Statistical analysis of the collected data was performed using SPSS version 21.*

### RESULTS:

*The Short Musculoskeletal Functional Assessment (SMFA) is scored on a scale from 0 to 100, where a score of 0 signifies no dysfunction or bothersomeness, and a score of 100 or more indicates severe dysfunction and*

*significant bothersomeness. Statistical analysis revealed that 223 (68.2%) participants reported a "good" health status despite experiencing postural backache.*

**CONCLUSION:**

*The study's findings indicate that the overall health status concerning function, as assessed by the Short Musculoskeletal Functional Assessment (SMFA), is largely "good." This suggests that the majority of the adult population in this study exhibited a functional index score within the healthy range, and their bothersomeness index score was low, indicating minimal distress from their symptoms. However, further research is warranted to explore self-reported functioning and bothersomeness across diverse populations affected by musculoskeletal conditions.*

**Keywords:** *low back pain, activities of daily living, quality of life, short musculoskeletal functional assessment, smfa*

## INTRODUCTION

Low back pain (LBP) is a highly prevalent musculoskeletal condition, affecting up to 84% of adults at some point in their lives (1). It typically manifests in the area between the 12th rib and the region above the buttocks, sometimes radiating to the legs (2). The pain can be acute, often self-limiting, but disruptive if recurrent or chronic, persisting for three months or more and frequently leading to disability (2). Etiologically, LBP is divided into specific (attributable to trauma, spinal stenosis, fractures, spondylosis, etc.) and non-specific types, with the latter often mechanical or postural in origin, accounting for 90% of cases (2). Numerous risk factors contribute to LBP, including age, gender, sedentary lifestyle, anxiety, and poor sleep (2). Notably, poor posture has been identified as a leading cause of LBP in young adults, with studies linking musculoskeletal disorders (MSDs) to both poor posture and forceful or awkward movements (3).

There is no universally accepted definition of postural LBP, but it is widely acknowledged as a major contributor to mechanical back pain. Mechanical pain arises from inappropriate stress on the muscles and soft tissues of the back, frequently caused by poor posture, unsuitable seating, and improper bending or lifting (3). Extended maintenance of faulty postures can disrupt musculoskeletal biomechanics, resulting in persistent discomfort commonly referred to as "backache." (3)

Postural LBP is increasingly recognized as a source of functional limitation in young adults (4). Common contributing factors include improper sitting and standing habits, incorrect object handling, unsuitable clothing, cultural and anthropometric influences, and poor lifting techniques (4). Occupational factors, such as prolonged sedentary work, high job demands, and poorly designed workstations, are also significant (4).

LBP can severely impact quality of life, affecting personal, social, psychological, and recreational activities (5). Economically, it imposes a substantial burden, particularly in low-resource settings like Pakistan, where it accounts for approximately 40% of work-related sick days and is the second leading cause of workplace absenteeism after the common cold. Epidemiological evidence suggests that the prevalence of LBP among teenagers and young adults is comparable to that in older adults, although the impact on quality of life may be less pronounced in younger populations (6).

Independence in daily living, encompassing activities such as eating, sleeping, hygiene, work, and recreation, is highly valued. The degree to which pain interferes with these activities, often referred to as "bothersomeness," is a useful indicator of disease severity and its impact on activities of daily living (ADLs) and instrumental activities of daily living (IADLs) (7). This can be measured using simple tools, such as a single-item question with a five-point Likert scale, which has demonstrated validity in LBP populations (7). Additional instruments, like the Short Musculoskeletal Function Assessment (SMFA) (8), are also used to gauge the impact of conditions like postural LBP on daily functioning.

To date, there is a lack of research specifically addressing bothersomeness and functional limitation in young adults (aged 18–35) with postural LBP. This study aims to fill that gap by evaluating self-reported functioning and perceived pain severity in this population.

## METHODOLOGY

This study used a descriptive cross-sectional design to assess self-reported functionality and bothersomeness among adults with postural low back pain. Data were collected over six months, from September 2021 to February 2022. The research was conducted at multiple sites, including the Foundation University Institute of Rehabilitation Sciences (FUIRS) and affiliated hospitals. Ethical approval was obtained from the Institutional Review Committee (IRC), and informed consent was secured from all participants prior to data collection. Both face-to-face interactions and online surveys were used to reach participants, ensuring a broad and accessible recruitment process.

A non-probability convenient sampling technique was adopted, selecting individuals who were readily available and willing to participate. The minimum sample size was calculated using RaoSoft, Inc., with a 5% margin of error, 95% confidence level, and 50% response distribution, resulting in a recommended sample of at least 327 participants. Inclusion criteria included adults aged 18–44 years of both genders who had experienced nonspecific or mechanical postural low back pain and were able to provide informed consent. Exclusion criteria included individuals with specific causes of low back pain (such as spinal stenosis, disc herniation, cancer, or fractures), congenital spinal deformities, or those who had never experienced postural low back pain.

For data collection, the Short Musculoskeletal Functional Assessment (SMFA) questionnaire was used. This 46-item, self-reported instrument evaluates the impact of musculoskeletal conditions on daily functioning and quality of life. It consists of two sections: 34 questions assessing functional status and 12 questions measuring the degree of bothersomeness caused by symptoms. Each item uses a 5-point Likert scale, with higher scores indicating greater dysfunction or bother. Data were analyzed using SPSS v.21, and results were presented in the form of graphs, charts, and tables. Ethical considerations included maintaining participant confidentiality, informing respondents about the study outcomes, and providing the option to withdraw from the research within one week of participation, at which point their data would be excluded from analysis.

## RESULTS

### Demographics

The study included a cohort of 327 young adults (N=327) recruited from Rawalpindi and Islamabad. Participants comprised both sexes, with an age range of 18 to 35 years and a mean age of 23.81±4.13 years. Of the total participants, n=190 (58.1%) were female and n=137 (41.9%) were male. Regarding marital status, 257 participants (78.6%) were unmarried, while 67 participants (20.5%) were married. Data on educational and occupational status revealed that students constituted the largest group, accounting for 238 participants (72.8%). Other occupational categories, including teachers, retired army officers, and businessmen, comprised 56 participants (17.1%) (Figure 1).

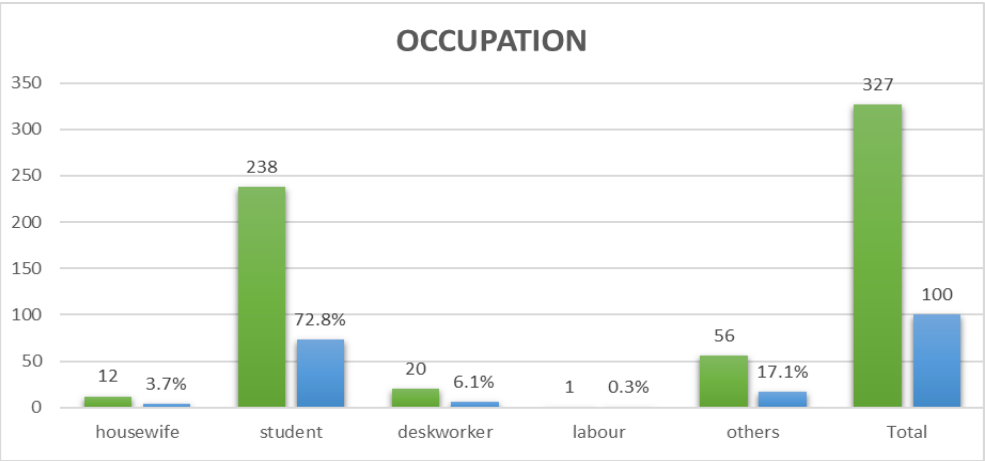
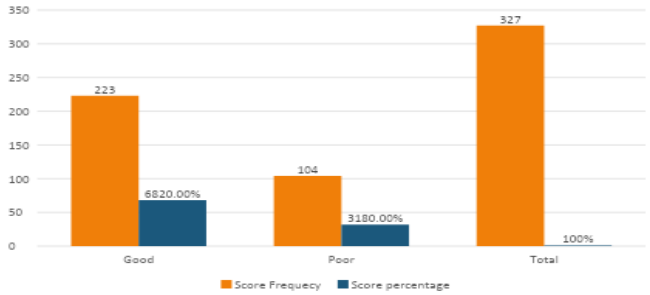



**Figure 1: Occupation of participants**

**SMFA total score:**

The largest percentage of adults (n=223, 68%) fall into the good health group. Additionally, 104 persons, or 31% of the entire population, fall under the category of being in bad health (Figure 2).

**Figure 2: SMFA Score**




**FUNCTIONAL INDEX AND BOTHERSOMENESS INDEX:**

The following table shows the mean and SD of the functional and bothersomeness index, which were the two categories in SMFA. Figure 1.6 represents categories of the SMFA questionnaire.

**Table 1: Functional and bothersomeness Index**

| FUNCTIONAL AND BOTHERSOMENESS SCORE | | |
|---|---|---|
| | N | Mean ± std deviation |
| BOTHERSOMENESS_INDEX | 327 | 25.7 ± 10.22 |
| FUNCTIONAL_INDEX | 327 | 65.0 ± 19.57 |
| TOTAL | 327 | 90.8 ± 27.22 |

## DISCUSSION

The majority of existing studies focus primarily on postural low back pain (LBP), yet there is limited evidence addressing the impact of postural LBP on functioning and bothersomeness in adults. It is now widely recognized that poor posture is a significant contributor to backache, particularly among young adults. The current study aimed to fill this gap by evaluating how poor posture affects the quality of life in adults, specifically examining both functional limitations and the degree of bothersomeness. These factors directly influence personal, social, and academic aspects of life.

The findings align with those of a study by Talib Hussain et al. (2017), which involved 96 shopkeepers selected through non-probability convenience sampling. Using the modified Nordic Musculoskeletal Questionnaire (NMQ) and a visual analog scale to assess pain intensity, they found a 56.25% prevalence of low back pain over three months. The study identified longer working hours and poor posture as key risk factors, recommending ergonomic interventions to prevent LBP and other musculoskeletal issues (9). Similarly, Eduardo Gallas Leivas et al. (2021) evaluated 529 adult workers across 22 personal, occupational, clinical, and psychosocial variables related to LBP using the NMQ. Their results indicated that poor posture significantly increased the likelihood of experiencing postural LBP in the previous 12 months, with personal and clinical factors playing important roles (10). Conversely, a Swedish study conducted in 2007 on the responsiveness of the Short Musculoskeletal Function Assessment (SMFA) questionnaire presented contrasting results. The study population (ages 18–60, approximately 60% female) found the SMFA easy to complete, but the majority scored within the dysfunction index, indicating poorer health status

than the current study population, which was predominantly healthy (11).

Most of these studies, including current research, employed a cross-sectional design and focused on the impact of backache regardless of the specific risk factors. The study, however, specifically targeted young adults, primarily students, and found that the majority reported good health, with favorable functional and bothersomeness indices. This supports the perspective that while poor posture is a recognized risk factor for LBP, its impact on functioning and quality of life can vary depending on the population studied.

The current study demonstrated that the functional status of most participants was 'good,' and the bothersomeness index, as measured by the self-reported SMFA questionnaire, was low. Given that the study population consisted mainly of students, these findings highlight the importance of awareness regarding how postural LBP can affect daily activities. Young adults need to recognize the significance of maintaining good posture to preserve their functional abilities and quality of life.

## CONCLUSION

In conclusion, the study adds to the growing body of evidence indicating that postural LBP influences both functioning and bothersomeness, which in turn affect various life domains. Further research focusing on postural LBP and its impact on functional status, particularly among young adults, is recommended. The insights gained from such studies can inform university health programs and community awareness initiatives in Rawalpindi and Islamabad, promoting better posture habits and reducing the burden of LBP on daily living activities.

## LIMITATIONS OF THE STUDY

There are several limitations that should be acknowledged when interpreting the findings. Primarily, time constraints influenced the depth and breadth of data acquisition. Furthermore, the prevailing COVID-19 pandemic introduced considerable challenges, notably a reduced participant response rate, which may have impacted the ultimate sample size and its representativeness. Consequently, the generalizability of the study's findings may be restricted, as the cohort was drawn from a specific population. Lastly, the inherent nature of a cross-sectional study design allowed for the assessment of participant perceptions at a singular temporal point, thereby precluding the inference of causal relationships or the observation of longitudinal changes

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