

## Rehabilitation Communications

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### Research Article

# Frequency of the Low Back Pain in Security Guards of Bus Rapid Transit System Peshawar

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### Abstract

Occupations that needs standing for longer interval are often associated with an increased risk of low back pain. A security guard's duty is one of the jobs that may be associated with a high association of low back pain. An observational study was carried out to determine the frequency of low back pain in security guards of bus rapid transit (BRT) service in Peshawar. The duration of the research study was six months, and the data was collected using Oswestry low back pain disability questionnaire. The sample size calculated for the research study was 292. A convenience sampling technique was used in this study. The results showed a very high frequency and severity of low back pain amongst security guards of BRT service Peshawar. It was also observed that most of the security guards had to stand for prolonged durations as part of their job requirements.

**Keywords:** Low back pain, bus rapid transit, prolonged standing, security guards

### Introduction

Low back pain (LBP) is a health disorder related to musculoskeletal and psychosocial problems affecting individuals of all ages and is one of the most common disabilities of human deformity. LBP can be acute, subacute, and chronic in nature (Kashif et al. 2017). Occupations that need standing for longer intervals are often associated with an increased risk of low back pain.

Prolonged standing is also related to prolonged loading on passive tissues and back muscle fatigue. LBP is a common complaint among security employees. A security guard's duty is one of the jobs that may be observed with a high association of pains, including LBP. Observational and biomechanical studies have shown that prolonged standing and excessive walking can significantly compress the intervertebral discs and vertebral endplates (Tan et al. 2016). Worldwide, 632 million people suffer from LBP. Up to 80% of

people will experience LBP at any point throughout their lives (Bhure, Lalwani, and Bhagia 2021).

LBP is a prevalent, costly, and challenging disorder to manage. Physicians must select from many evaluation and treatment options (Dagenais, Tricco, and Haldeman 2010). Physiotherapists play an important role in the treatment of LBP (Gracey, McDonough, and Baxter 2002). Treatment of LBP contains pharmacological and non-pharmacological approaches. Non-pharmacologic management includes acupuncture, spinal manipulation, and psychotherapy (Vitoula et al. 2018).

Although studies have been conducted regarding LBP in Pakistan, there are no such studies on the bus rapid transit (BRT) service in Peshawar. BRT is a newly established service providing services to a large number of passengers for traveling. According to its spokesman and reports from the

**Table: 1 Level of disability due to neck pain in male and female participants**

	<b>Minimal Disability (0-20%)</b>	<b>Moderate Disability (21% - 40%)</b>	<b>Severe Disability (41% - 60%)</b>	<b>Total</b>
<b>Male</b>	27	157	04	188
<b>Female</b>	15	88	01	104
<b>Total</b>	42	245	05	292

Express Tribune newspaper, a staggering 250,000 passengers use BRT on a daily basis. Security guards at the newly made BRT Peshawar work hard to provide security to the passengers. They keep standing for long hours, which might affect their health, especially causing LBP. This study was designed to fill the gap in finding the frequency of LBP among the security guards of BRT services Peshawar.

### **Materials & Methods**

The study design was observational, and the data was collected from security guards of BRT services in Peshawar. The sample size from the population was 292. The duration of the research study was six months. Non-probability convenient sampling was used for data collection. Data was collected after ethical approval from the institutional research review committee. A consent form has been signed by every individual participant.

The inclusion criteria for the study included; being employees of BRT services working as security guards aged between 19-55 years. Both males and females were included in this study. Those who had any trauma, history of any surgery for back/spine in the last 6 months or spinal deviation, active systemic disease, known psychological condition, congenital deformity, low back surgery during the previous year, history of cerebrovascular accident (CVA) or transient ischemic attack (TIA) during the previous one year, evidence of any bleeding or infection to the back particularly in the lower back region, history

of C-section in last 3 months and pregnant females were excluded from the study. Data was collected by Oswestry low back pain disability questionnaire. Data was analyzed on SPSS 19. A descriptive analysis of data was carried out initially. Counts and percentages were employed to describe the frequency distributions.

### **Results**

A total of 292 participants were observed, among which 188 (64.4%) were male, and 104 (35.6%) were female. A total of 27 males and 15 females were facing minimal disability due to low back pain. One hundred fifty-seven males and 889 females had a moderate disability due to low back pain. 04 males and 01 female had a severe disability due to low back pain (Table 1).

There were 42(14.38%) participants observed with minimal disability of LBP, out of which 11(3.76%) kept standing for more than 2 hours and 31 (10.61%) were standing for more than 8 hours. There were 245(83.90%) participants observed with moderate disability, of which 22(7.53%) were standing for more than 2 hours while 223(76.36%) participants were standing for more than 8 hours. There were 05(1.71%) participants observed with severe disability, of which 01(0.34%) participant stood for more than 2 hours and 04(1.37%) stood for more than 8 hours during their duty (Table 2).

### **Discussion**

The current study was performed to find the frequency of low back pain disability levels that

**Table: 2 Level of disability due to Low Back Pain in Security Guards of BRT services**

Duration	Minimal Disability (0-20%)	Moderate Disability (21% - 40%)	Severe Disability (41% - 60%)	Total
More than 2 hours Standing	11	22	01	34
More than 8 hours Standing	31	223	04	258
<b>Total</b>	42	245	05	292

may be caused by prolonged standing. Our results showed that there was a high frequency of LBP among the security guards of the BRT service in Peshawar. In a previous study, the global prevalence of LBP was found to be higher in women than in men (Fatoye, Gebrye, and Odeyemi 2019). Women are also affected by many chronic pain disorders and painful illnesses. However, musculoskeletal pain was found more in men (Leveille et al. 2001, Fatoye, Gebrye, and Odeyemi 2019). In the current study, the gender distribution was non-significant because both males and females were equally affected, and their standing duration was the same. Similar results were also obtained previously (Christe et al. 2021). However, some exceptions were also noted (Dagenais, Tricco, and Haldeman 2010).

We observed and analyzed 292 patients, of which 188(64.4%) were males, and 104(35.6%) were female. In order to get an objective response, the Oswestry disability index scale was used, which included 10 sections. Each question could be responded to with a score ranging from (0-6).

In a previous study, 13.10% of the participants were found in the mild disability category (Ng and Mohiuddin 2020). Our study also showed a comparable number in the mild disability category 42 (14.4%)

In another study, most of the subjects suffered from severe (48.5%), and moderate (28%) levels of disability (Mirzamohammadi et al. 2021), but the reason behind the high rate of severe disability was that those subjects were also suffering from lumber spinal disorders (Mirzamohammadi et al.

2021). In our study, 246 (84.2%) participants were observed with moderate disabilities, and 4 (1.4%) participants were observed with severe disabilities. The low frequency of severe disability in our study may be due to the fact that we excluded participants with vertebral column disorders.

### Conclusions

The results of this present study demonstrate that LBP is highly prevalent amongst security guards of BRT service Peshawar. A majority of these security guards experience prolonged standing as part of their job, which might be a contributing factor.

### Conflict of interest

The authors declare that they have no conflicts of interest to disclose.

### Funding

There was no specific funding available for this project.

### Study Approval

The Abasyn University Peshawar, Pakistan, review board approved this study.

### Consent Forms

Each participant signed a consent form. These forms are available with the authors.

### Authors Contributions

MSS conceptualized the study and wrote the

initial manuscript; AAK, SK, and MI helped with the literature search analysis and writing the first draft; SK, MI, and MSS did the data collection and review of the studies; and MSS supervised the whole project and wrote the final manuscript.

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