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Original Article

Occurrence of Postural Low Back Pain in Association with Physical Inactivity among Bank Officers of Faisalabad

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ABSTRACT

The quality of life for several bank officials around the world is impacted by postural low back discomfort. Prescription drugs and over-the-counter analgesics are the two main forms of treatment. **Objectives:** To assess the prevalence of postural low back pain and its association with inactivity among Faisalabad bank employees. **Methods:** A purposive sample was drawn from the community of bankers for this cross-sectional survey, which also included a consent form**.** The data were gathered using the JOABPEQ, or Japanese Orthopaedic Association Back Pain Evaluation Questionnaire. We computed the sample size for our study and employed a purposive sampling technique. The study had 164 participants in total (Faisalabad bank officers). For analysis, chi-square was used. The coded data were entered using the statistical package for service solution (SPSS V-16). **Results:** The findings revealed that there was a 75% incidence of postural low back pain and frequency was 74.5 among Faisalabad bank personnel. Findings showed that $p < 0.05$ for postural low back pain and physical inactivity which means there is an association exists between variables. **Conclusions:** The majority of bank officers do not adjust their posture, and there is no substantial relationship between gender and posture change. The majority of bank officers experience low lumber pain, although there is no discernible link between gender and low lumber pain, as it affects both men and women equally. Majority of the bank officers do not leave their chair and walk during their working hours so, there is significant association between the lower lumber pain and inactivity.

INTRODUCTION

Postural low back pain is characterized as ache, spasm, or rigidness above the costal border and below the inferior gluteus folds, with or without referred leg pain. The most common reason for activity restrictions and job absences worldwide is postural low back discomfort, which also has a significant financial impact. Subacute pain lasts 6 to 3 months, Chronic low back pain lasts more than 7 to 12 weeks, whereas postural low back pain lasts shorter than 12 weeks [1]. Postural lower back discomfort is frequently caused by muscle tension as a result of strenuous activities and heavy lifting. However, it is sometimes caused by a tiny jelly-filled disc that serves to protect the area between the vertebrae. One of these discs can protrude or break, putting pressure on a nerve. When the sciatic nerve is irritated, pain radiates from the buttocks down one leg. Pulling, bending, leaning, or anything else that bends the spine will almost certainly cause lower back pain. Sitting in a chair or at a desk all day, on the other hand, has its own set of hazards, especially if your chair is uncomfortable or if you stoop. Acute low back pain (LBP) is highly prevalent [2]. The most frequent cause of work-related disability is postural low back discomfort, according to the national

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institute of neurological disorder and stroke (NINDS).Evidence suggests pain on standing for a while, with lifting, bending forward a little, on trunk flexion or extension, doing a sit up, when driving long distances, getting out of a chair, and pain on repetitive bending, running, coughing or sneezing were all generally considered as moderate indicators of LBP [3]. Atrophy (muscle loss)and changes in muscle composition ensue as a result of this. Muscle atrophy, which is characterized by a general decrease in the cross-sectional area of muscle fibres as well as a decrease in the total number of muscles fibres, results in a loss of muscle strength. According to studies, low back discomfort brought on by inactivity is associated with para-spinal muscle atrophy and an increase in fat content. Low back pain (LBP) is a major reason of disability in the world. Many workers are prone to it because of the physical inactivity and emotional factors associated with their professions [4]. Back pain can result from desk jobs or inactive work, especially if your posture is bad or spend the entire day in a chair with poor back support. Anyone, regardless of age, can have low back pain. The prevalence rates vary between studies and by occupation. Around 7.5% of the 577 million individuals in the world are expected to experience low back discomfort in 2017. Since 1990, low back pain has been the main cause of years of incapacity. Low back discomfort is a widespread global issue. In 10 October 2015, LBP was a common problem among staff in the health facility and there was also an association between physical inactivity and LBP [5]. The most common symptoms of postural lower back pain include discomfort, stiffness, and decrease in range of motion in the area. One of the body's defense systems is muscle spasm, which can be noticed in the lower back. In October 2009 a study showed that MSK issues and LBP were among those disorders which lower the work efficiency with 76.5% prevalence [6]. Postural low back pain is associated with the following signs and symptoms: Numbness, Spasm or stinging, Intervertebral disc injury, nerve root compression, stiffness, and tightness(sciatica). When the incorrect posture is continued and prolonged, LBP eventually worsens. Prescription drugs and over-the-counter analgesics are the two main types of treatment for low back pain i.e. OTC pain relievers: NSAID's (Ibuprofen or naproxen sodium), Muscle relaxants, Topical pain relievers (Liniment, Balm, Ointments, Speck) Narcotics: Opioids (oxycodone or hydrocodone not recommended for long-term pain), Anti-depressants (Duloxetine, Amitriptyline).Psychological stress raises the likelihood of LBP in healthcare workers. Studies showed that exercises are best way to get relief from low back pain [7]. Exercises can help you improve your posture while also increasing your flexibility and strengthening your back and abdominal muscles [8]. These exercises should be done on a regular basis to prevent pain from reoccurring. The physical therapist also educates you how to modify your movements during a back-pain episode in order to minimize pain flare-ups while remaining active. A study also evaluated that prolong standing is also associated with LBP [9]. When you stop being active for a lengthy period of time, your back muscles weaken and you lose fitness, which might worsen your back pain. Long periods of inactivity cause the back to stiffen and become de-conditioned. Awkward posture, incorrect manual handling, heavy lifting, arduous labor, repetitive activities, and psychological stress have all been linked to the development of MSD and lower lumber pain [10]. Back pain episodes are shorter and less frequent when you exercise regularly. You might not want to get out of bed if your back is hurting. However, if the issue is muscle strain, experts advise that you return to your normal activities as soon as possible. More than a day or two of bed rest, according to studies, might aggravate the discomfort and impair muscle tone and flexibility [11].

METHODS

A cross-sectional study was carried out in Faisalabad bank officials to explore the occurrence of Postural Low Back Pain and also its relationship to physical inactivity domains. The targeted group was Faisalabad bank officers. Study period for investigation was three months since it required a reasonable amount of time to observe the frequency of postural low back pain and its associations with various aspects of physical inactivity in Faisalabad bank officers. Purposive sampling technique was used among bank officers of Faisalabad, in conformity with their inclination to take part in the study. Our sample size was 164, with a margin of error of 5% and a confidence level of 95%. Physically fit Bank officers, age group (25yr-60yr), working 8-10 hours a day, were considered as inclusion criteria. Whereas Heart/diabetic patients, any back pathology, fractures or surgical history (Systemic illness or Pregnancy) were excluded considering it as an exclusion criterion. After reviewing many studies, the researchers devised and advanced a JOABPE, well-organized questionnaire. JOABPEQ, the Japanese Orthopaedic Association Back Pain Evaluation Questionnaire, is a multifaceted outcome evaluation for people. With Postural low back pain, which encompasses dysfunction and limitations induced by the disease. This questionnaire included all of the variables required to complete our investigation. Knowledge about Low back discomfort from poor posture and its connection to inactivity domains are as follows: Back discomfort affects people of all ages. This could be linked to a lack of physical exercise, and the evidence on the link between physical activity in many

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domains and back pain is mixed. Both extremes of physical activity, either too much or too little, are linked to a significant risk of LBP [12]. Sitting still can make your back tight and sore. Incorrect sitting posture is also a factor of LBP [13]. Regular exercise therapy leads to fewer and shorter bouts of back discomfort [14]. Aerobic activity (walking) along with light physical activity has been found to minimize the occurrence of postural low back pain for a long time [15]. For analysis, chi-square was used because variables were more than two, sample size was relatively large, the statistical package for service solution (SPSS version 16.0) was used to enter the coded data.

RESULTS

Cross-tabular estimation shows out of 164 bank officers (who participated in study), majority i.e. 107 bank officers reported that they are physically active and it improves their postural low back pain, 33 bank officers reported that they physically active but the low back discomfort they experience is unaffected, 23 bank officers reported that they are physically inactive and it worsens their low back pain, while only 1 bank officer reported that he is physically inactive and it has no effect on their low back pain. There was a high incidence of low back pain i.e.75% in bank officers of Faisalabad. One part of the questionnaire was about to demographic data age and gender. Out of 164 banker's majority of the bankers i.e. 92 (56.1%) were males while 72 (43.9%) were females (Table 1).

Table 1: Frequency and percentage of demographic data: Gender

Gender	Frequency (%)
Male	92(56.1)
Female	72(43.9)
Total	164(100)

Table 2 represent age demographics of participants.

Table 2: Frequency and percentage of demographic data: Age

Age	Frequency (%)
25-35	74(45.1)
36-45	71(43.3)
46-60	19(11.6)
Total	164(100)

Frequency of lower back pain of participants represented in table 3.

Table 3: Frequency of Low Back Pain

Low Back Pain	Frequency (%)
Yes	123(75)
No	41(25)
Total	164(100)

Out of 164 banker's majority i.e. 107 (65.0%) reported that being physically active helps in improving low back pain. The degree of freedoms in the given chi-square test is 3 and Pearson Chi-Square value is shown in the figure. The Chi-Square results show that the p-value is equal to 0.048. In this case, the 95% confidence interval consideration tells us that $p < 0.05$. Which shows that there is an association between physical inactivity and Low Back pain (Table 4).

Table 4: Cross-tabular results of the analysis of association between LBP and physical inactivity domain

What effects do physical activity and inactivity have on your low back pain?							
Variable		People who are physically active(it alleviates low back discomfort)	Physically active people (It has no effect on low back pain)	Physically inactive people (It has no effect on low back pain)	Physically inactive people (It worsens my pain)	Total	p-value
Low back pain	Yes	85	20	0	18	123	0.04
	No	22	13	1	5	41	
Total		107	33	1	23	164	

Three independent variables which were considered to check their association with low back pain were walk (during working hours), morning walk and physical inactivity. Findings of cross-tabulation of first part in which association between Gender and change in posture was checked. The p-value was equivalent to 0.678, according to the Chi-Square values, which suggests that there is no connection between gender and changes in posture. Association between gender and low back pain showed that low back discomfort affects both men and women, regardless of their gender. In second part we checked association between postural low back and three different variables. First of all, we targeted two the variables. The p-value was equivalent to 0.036, which showed that the variables have a substantial association. We then focused on postural lower back pain and a morning walk to see whether there was a link. Cross-tabulation results revealed that the p-value is 0.048, according to Chi-Square findings. Which showed that there is a substantial link between low back discomfort and morning walks. The majority of bank officers (who participated in the study) reported that they are physically active and it improves their postural low back pain.

DISCUSSION

The main objectives of our study were to learn more about the problem of low back pain and to obtain a better knowledge about how this problem affects bank officer's lives, with the aim that the findings would have societal implications. According to data analysis the percentage of bank officers who were in the age group of 25-35 years was high 49.1%. the percentage of bank officers' wither respect to their gender, frequency distribution, showed that there were more males (56.1%) who reported with postural low back pain, out of 164 bank officers while 43.9% were females. Prevalence of postural low back pain was high i.e.75% in bank officers of Faisalabad. When we compared our study with the other international surveys and studies, a number of previous researches looking at postural lower back pain prevalence and its connection to inactivity

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among bank officers found that physically inactive bank officers have a higher risk of postural low back pain with a high prevalence. Their back pain is exacerbated by their sedentary lifestyle. According to our data analysis the percentage of bank officers' wither respect to their gender, frequency distribution, showed that there were more males (56.1%) who reported with postural low back pain. In comparison with our study A study was conducted from April to September 2017 in Lahore; a study was done to find out how common postural low back pain was among bank officers. Lower back discomfort was reported by 52.4% of bank officers (n=86/164), with males (n=46; 53.5%) having a higher prevalence than females (n=40; 46.5%) [16]. If we compare our study the frequency of Low back pain was found to be 75% (125 out of 164 bankers). Males had a higher prevalence rate than females same as we also evaluated that males have higher prevalence with 56.1 %. The prevalence of low back pain was also high (75%). A similar study bank-based cross-sectional survey was done in Gondar city from October 20 to November 10, 2020. The purpose of this study was to determine the prevalence of lower back pain among bank officers, as well as the factors that contribute to it, 55.4% of bank officers reported having lower back pain [17]. A cross-sectional descriptive survey was conducted to investigate the prevalence and features of LBP, as well as the risk factors related with it, among chosen bank attendants. Global low back pain prevalence was also high [18]. Our Study found that males had more Frequency of low back pain (56.1%) Meanwhile according to a study From March to December 2017, a cross-sectional study was done among 100 bankers from the state bank of Pakistan, Faisalabad, and the national bank of Pakistan, Faisalabad. Females had a higher mean CMDQ (43.0 33.6) than males (16.9 20.8), and there was a significant relationship between gender and total discomfort (p=0.001). The current study's findings revealed that MSK pain is widespread among bank personnel [19]. Our result also showed the association of physical inactivity with low back pain. Our statistical analysis showed that the Chi-Square results show that the p-value is equal to 0.048. In this case, the 95% confidence interval consideration tells us that $p < 0.05$. Which shows that there is an association between physical inactivity and Low Back pain. In comparison In Kigali, Rwanda, a descriptive cross-sectional study was conducted to determine the prevalence and characteristics associated with back pain among bank employees. The connection between back discomfort and independent variables was determined using a Chi-square test ($p < 0.05$) and an odds ratio with a 95% confidence interval. The incidence of back discomfort among bank employees was discovered to be 45.8%. Back pain was common among bank employees, according to this study, and factors such as sitting with the spine bent, twisting the back, and not taking a break during working hours were all individually linked to back pain [20]. In fact, no previous research on the specified domain had been undertaken in the Faisalabad area. Second, the demographic we selected (Bank officers of Faisalabad) was distinctive in that no previous research on Faisalabad bank officers had been undertaken. As a result, we investigated the frequency of postural low back pain and its associations with various aspects of physical inactivity in Faisalabad bank employees.

CONCLUSIONS

There is a significant association between the postural low back pain and walk (during working hours). Physically inactive domains are highly connected to postural low back pain, indicating that the two variables are linked. Present research project included the bank officers of Faisalabad with the age group 25 years to 60 years. Good workplace ergonomics reduces physical strain on employees. Developed countries have screening system by which bank officers are screened about any type of health issue. In Pakistan we should introduce such system to enhance quality of life among employees and reduce their health-related issues. Workplace intervals help employees stay focused and engaged in their jobs, helping them to complete tasks more precisely and with fewer errors. Similarly, People who have sedentary lifestyle and limit their activity are more likely to develop muscle weakness.

Authors Contribution

Conceptualization: HZ
Methodology: DA
Formal analysis: AK, RS
Writing-review and editing: FA, AK, AA

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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