



Original Article

Contributing Factors Towards Low Back Pain Among Front Line Health Care Workers in Lahore, Pakistan

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ABSTRACT

For nurses' low back pain is a serious health issue. **Objective:** To determine the contributing factors towards low back pain among front line health care workers in Lahore, Pakistan. **Method:** The design of this study was cross-sectional, descriptive, and quantitative. 191 nurses were selected for this study through non-probability purposive sampling. Data were collected by adopted Performa by Prof. Cilliers. **Results:** This study encompassed 191 nurses working in the four public hospitals of Lahore. The response rate was 100%. The regular prevalence of low back pain was 41.4%. The highest ratio of contributing factors towards low back pain was physical, (poor posture 36.6%), while in the psychological factors fatigue 52.4%, whereas in the social factors age 35.6%, similarly in patient care Lifting a heavy Patient 23.6%, and work environment workload 36.6%. **Conclusion:** Low back pain was moderately prevalent among front-line health care workers. A physical, psychological, social, patient care, and work environment are all contributing factors towards low back pain.

INTRODUCTION

Low back pain is a serious health issue for front-line health care workers such as nurses due to the nature of their employment [1]. Low back pain influenced all ages of people [2]. The World Health Organization defined low back pain as "It is a troublesome sensory and emotional practice accompanying with or comparable with, real or probable muscle damage [3]. Pain is due to the defense mechanism of the body to prevent further damage to the body [4]. Moreover, it is an undesirable influence on the body and intellectual health, due to the incidence of disease in the community [5-7]. Several studies revealed the tremendous incidence of lower back pain among front line health care workers [1]. LBP is a dorsal discomfort that occurs above

the gluteal curvature and below the costal edge. Low back pain may also be called lumbosacral pain [8]. Deficit knowledge of back care and absence of lifting equipment during patient shifting and lifting of patients in a complex work environment, particularly in developing countries where assistive devices are not existing, are the major causes of low back pain among nurses [9]. Moreover, other contributing factors of low back pain are physical, psychological, social, psychological, patient care, and work environment [4]. Low back discomfort affects people all around the world. The prevalence of lower-back pain in China is 80.1% and in Korea 90.3% [10]. Likewise, in Turki 79%, in Africa 44.1% to 82.7%, and in Ethiopia 45.8% to

70.9% [10-12]. The incidence of lower- back pain in Nigeria is 73%. Many people worldwide suffer from low back pain, and the disease's impact is rising with the passage of time. For instance, from 1990 to 2017, its prevalence rose from 377.5 to 577 million [13]. According to a 2015 study, 540 million people worldwide experienced activity-limiting low back pain at some point in their lives, with the global point prevalence of this condition being 73% [14]. Similarly, LBP has been moderately to higher prevalence between 45% in Britain and 63% in Australia. According to a study from Hong Kong and China, low back pain among nurses was 40.6% and 56%. individually. According to different Diverse African studies low, back pain had also higher rates at 44.1, 79.4, and 82.7%, respectively [12]. In Tunisia, the prevalence of low back pain was 58.1%. The components which are altogether related to lower lumbar pain were: increased body mass index, multiple pregnancies, arthritis, deprived physical condition, incorrect body posture, and heavy weightlifting in the workplace [15]. Moreover, it has been considered the highest source of incapacity in the world. As compared to developed countries low back pain is more prevalent in developing countries. It is considered the second most common disease in adults under the age of 45 years [14-16]. Low back discomfort was also common among nurses at a typical Nigerian hospital. Four hundred and eight respondents 36.27% males and 63.7% women participated in this research. This study's low back pain predominance of twelve months was about 73.53%. In this study low back pain was 68 % greater predominant among woman nurses as compared to male nurses. Prevalence and chance variables of low back pain were also among nurses in an ordinary Nigerian healing center were also high [17-21]. One study from Hong Kong and China also showed that nurses' involvement in LBP is around 40.6% and 56%. A study was conducted in Pakistan. According to this study, the frequency of low back pain between nurses was 65.1 %. Furthermore, in twelve months the incidence of lower-back pain among nurses was 57.8% [22]. Moreover, 7 days' recurrence of lower- back pain was 32.5%. Among them, a large part of nurses depicts the pain of a modest amount. Besides, the ratio of lower- back pain was extraordinary in those nurses who were married, had children, was overweight, fatty, and were more than 30 years of age. Furthermore, they are having 15 years of clinical experience [23]. Low back pain can be contributed to many factors such as physical, psychological, social, psychological, patient care, and work environment [24]. Moreover, being female, overweight, obese, lack of assistive devices, lifting and shifting the patient, lack of regular exercise and job-related stress due to the heavy workload of the patient, lack of staffing, and extensive duty hours are also corelated factors of lower- back pain [25]. Finally, the prevalence of

low back pain and the factors that contribute to it among front-line health care workers (nurses) in Lahore, Pakistan, have not been thoroughly determined. This leaves policymakers with a knowledge gap and a lack of a foundation for future study. As a result, the goal of this study is to determine the factors that contribute to lower-back pain among frontline health care workers in Lahore, Pakistan. This study will be helpful to assess the prevalence and connected factors towards lower back pain. Lower-back pain causes nurses to retire prematurely; this might be avoided. After assessing the prevalence and contributing factors of low back pain, the institution can employ friendly approaches to prevent low back pain and reduce its contributing factors [26]. The study's findings will be used as a baseline for future studies, as an input for policymakers to lessen the problem by identifying the causes, and to investigate preventive strategies and treatments among healthcare professionals in the country. It is also crucial for clinicians to identify the factors that contribute to the development of low back pain and to apply preventive interventions as soon as possible. The study's findings will be utilized as a baseline for future studies, as an input for policymakers to reduce the problem by identifying the variables, and to explore preventive measures and treatments among healthcare professionals in the country. It is also critical for clinicians to identify the factors that contribute to the development of low back pain and to implement preventive measures as soon as possible. This study will be supportive in an arrangement-making for chance administration and welfare promotion and anticipation plans to address how to prevent employees from encountering serious and long-term disabilities concerning daily working operations.

METHODS

A descriptive cross-sectional study was conducted. The duration of the study was nine months. The setting of his study was four public hospitals of Lahore Jinnah, General, Services and Mayo Hospitals of Lahore The Sample size of 191 cases was calculated with the following formula.

$$N = (Z_{(1-\alpha/2)}^2 P(1-P))/d^2$$

The inclusion criteria of this study were female registered nurses; their age was between 23-55 years. Moreover, their job experience was as a registered nurses for one year to 25 years. Furthermore, the participants were mentally active. Nurses were excluded if they exhibited nursing Students, presented with positive neurologic signs and symptoms, history of head injury fits, dementia, etc., and neurological deficit. Moreover, nurses were unable to complete the questionnaire due to a vacation or extended sick leave. Besides, Nurses unwilling to participate in the study were excluded. Sample size was consisted of 191 registered

female nurses who have one years working experience. The sampling method of this study was purposive sampling. In the current study associated factors toward lower- back ache were measured by one questionnaire established by Professor Liezel Cilliers, Department of information systems, Deputy Dean: Research and Internationalization, Faculty of Management and Commerce, University of the Western Cape, South Africa. The questionnaire of this study was consisting of the prevalence of low back pain, and contributing factors, and comprised of subsequent categories: General information of the contributor, was also addressed by the confounding factors such as gender, age, workplace, type of work, and duration of a career. SPSS version 25.0 was used to enter and evaluate the data. Quantitative variables were described as mean standard deviation and a histogram was created. The qualitative factors were reported as frequency and percentages.

RESULTS

191 respondents overall participated in this study. There were no missing responses. The participants' average age was 33, with a standard deviation of 9. The respondent's age ranged from 23 years old to 55 years old. This table indicated that most of the participants N= 45 (23.6%) were ICU ward and n= 37 (19.4%) respondents were from the surgical ward while minimum contributors, n=7(3.7%) were from Orthopedic ward. The marital status of the respondents can be defined as follows: n= 95 (49.7%) respondents were married, 71 (37.2 %) were single, 20 (10.5%) were divorced and 5(2.6%) were windowed. The educational status of the participants indicated that n= 117 (61.3%) respondents were nursing diplomas, 45 (23.6%) were Bachelor of Science in Nursing (Generic), 23 (12%) were Bachelor of Science in Nursing (Post R.N) and only 6 (3.1%) were MSN nursing. The designation of the contributors specified that n=43(22.5%) participants were head nurses, 41(21.5%) were senior nurses and 107(56.0%) were charge nurses. The stay in the organization of the participants revealed that 0-5 years of experienced participants were n=79(41.4%) and 6-10 years of experience contributors were n=46 (24.1%). Similarly, 11-15 years stay in the organization of the participants were n=20 (10.5%), and 16-20 years of experience participants were n =16 (8.4%). Finally, 21 years and above 21 years of experience participants were stay in the organization were n=30 (15.7%)(Table 1).

S.No.	Socio-demographic characteristics	N (%)
Departments		
1.	Medical	31(16.2%)
	Surgical	37(19.4%)
	Orthopedic	10(5.2%)
	Gynecology	22(11.5%)
	Pediatric	15(7.9%)
	Emergency	24(12.6%)
	Urology	7(3.7%)
	ICU	45(23.6%)
Marital status		
2.	Married	95(49.7%)
	Single	71(37.2%)
	Divorced	20(10.5%)
	Windowed	5(2.6%)
Qualification		
3.	Nursing Diploma	117(61.3%)
	BSN Nursing (Generic)	45(23.6%)
	BSN Nursing (Post R.N)	23(12.0%)
	MSN Nursing	6(3.1%)
Designation		
4.	Head Nurse	43(22.5%)
	Senior Nurse	41(21.5%)
	Charge Nurse	107(56%)
Stay in the organization		
5.	0-5 years	79(41.4%)
	6-10 years	46(24.1%)
	11-15 years	20(10.5%)
	16-20 years	16(8.4%)
	21& above	30(15.7%)

Table 1: Participants' socio-demographic characteristics

This table highlighted the frequency of low back pain among nurses. According to this table n=79 (41.4 %), participants experienced low back pain on a regular basis while whereas n=112 (58.6%) nurses were not experienced low back pain on a regular basis. Moreover, this table emphasized the frequency of low back pain occurrences amongst nurses. According to this table n=11 (5.8 %) contributors experienced no low back pain, n=26 (13.6%) experienced low back pain once a year, while, n=18 (9.4%) were experienced low back pain twice a year, n=16 (8.4%) were experienced low back pain once a week, n=41 (21.5%) were experienced low back pain twice a week, whereas n=79 (41.4%) nurses were experienced low back pain on a regular basis (daily). Furthermore, this table underlined the episode of low back pain among nurses. According to this table n=11 (5.8 %) respondents were no low back pain episodes, n=121 (63.4%) experienced low back pain episodes 1-6 weeks, whereas n=32 (16.8%) respondents were low back pain episodes longer than 12 weeks (Table 2).

Variable	N (%)
1. Low back pain on a regular basis	
Yes	79 (41.4%)
No	112 (58.6%)
2. Duration of low back pain	
No pain	11 (5.8%)
Once a year	26 (13.6%)
Twice a year	18 (9.4%)
Once a week	16 (8.4%)
Twice a week	41 (21.5%)
Daily	79 (41.4%)
3. Episode of low back pain	
No pain	11 (5.8%)
1-6 weeks	121 (63.4%)
6-12 weeks	27 (14.1%)
Longer than 12 weeks.	32 (16.8%)

Table 2: Prevalence of low back pain among nurses

Table 3 shows the contributing factors of the participants toward low back pain. This table indicated that physical aspects could arise to the progress of low back pain comprising poor posture (n= 70; 36.6%), prolonged standing (n=37; 19.4%), and prolonged walking (n=11; 5.8%), whereas slumping / half -sitting (n= 16; 8.4%), bending forward (n= 29; 15.2%), and poor physical fitness (n= 28; 14.7%). Similarly in patient care factors towards low back pain involved the positioning of patients in the bed (n= 31; 16.2%), repetitive lifting (n= 19; 9.9 %), and lifting a heavy patient (n= 45; 23.6 %), whereas lifting without a partner (n= 15; 7.9 %), accepting emergency patients (n= 37; 19.4%), moving bed or equipment's, (n= 14; 7.3%), washing patients in the bath (n= 10; 5.2%), and lack of pulleys/ lifts to transfer patients (n= 20; 10.5%). Likewise in social factors, Smoking (n= 10; 5.2%), obesity (n= 61; 31.9%), and age (n= 68; 35.6%) were assumed, while dependency e.g., alcohol, drugs (n= 4; 2.1%), poor social and educational status (n= 21; 11%), and none of the above were assumed (n= 27; 14.1%). Moreover, psychological factors which can contribute to lower back pain are as follows: fatigue (n =100; 52.4%), emotional distress (n=28;14.7%), and depression (n=29;15.2%), and (n =34;17.8%) contributors were considered that none of the above factors could contribute of lower back pain. Furthermore, this table shows the factors in the workplace that can cause low back pain. These comprised work control (n= 13; 6.8%), workload (n= 70; 36.6%), work pressure (n= 21; 11 %), work status (n= 26;13.6%), while support at work from supervisors (n= 23; 12%), work satisfaction (n= 12; 6.3 %), whereas poor work environment only (n = 2;1%), and Shifts e.g., day/night (n= 24; 12.6 %) (Table 3).

Variable	N (%)
1. Physical factors	
Poor posture	70 (36.6%)
Prolong standing	37 (36.6%)
Prolonged walking	11 (19.4%)
slumping / half sitting	16 (5.8%)
Bending forward	29 (8.4%)
Poor physical fitness	28 (14.7%)
2. Patient care factors	
Positioning of patient in the bed	31 (16.2%)
Repetitive lifting	19 (9.9%)
Lifting a heavy Patient	45 (23.6%)
Lifting without a partner	15 (7.9%)
Accepting emergency patient	37 (19.4%)
Moving beds or equipment's	14 (7.3%)
Washing patient in the bath	10 (5.2%)
Lack of pulleys/ lifts to transfer patients	20 (10.5%)
3. Social factors	
Smoking	10 (5.2%)
Obesity	61 (31.9%)
Age	68 (35.6%)
Dependency e.g., alcohol, drugs	4 (2.1%)
Poor social and educational status	21 (11%)
None of the above	27 (14.1%)
4. Psychological factors	
Fatigue	100 (52.4%)
Emotional distress e.g., anxiety	28 (14.7%)
Depression	29 (15.2%)
None of the above	34 (17.8%)
5. Work environment factors	
Work control	13 (6.8%)
workload	70 (36.6%)
work pressure	41 (21.5%)
work status	30 (15.7%)
Support at work from supervisors	23 (12.0%)
work satisfaction	12 (6.3%)
Poor work environment only	2 (1.0%)
Shifts e.g., day/night	24 (12.6%)

Table 3: Contributing factors towards low back pain

DISCUSSION

This study's sample comprised 191 nurses from public Hospitals of Lahore. The sociodemographic characteristic of the study shows that many of the participants were from the ICU and surgical ward. It was 23% [27]. And this study's results connect with the study findings conducted in the Saudi Arabia King Abdul Aziz University Hospital. In this study, most of the participants of lower-back pain among nurses were from the surgical ward. In this study, 24.7% of the participants were from the surgical ward [27]. The recent study found that 41.4% of nurses had low back problems. This study's findings can be related to the study done on "prevalence and factors associated with low back Pain". The frequency of low back pain among nurses was

44.2% in this study [28]. This study's prevalence rate can be compared to the previous study [29]. The prevalence of low back pain in this study was 57.46%. This study can be contrasted to another where the prevalence of low back pain was 37.6% after one week [30]. The finding of the study can be compared with the study [31]. In this study the contributing factors towards low back pain were job related stress, lifting of heavy weight and work environment factors. This study can be correlated with the study of Ethiopia. In this study, the contributing factors towards low back pain were long-standing, bending, lifting equipment, moving bed, and poor posture. Moreover, social factors were obesity and age. Similarly, in psychological factors, the associated factors of low back pain were job-related fatigue, depression, and anxiety. Furthermore, environmental factors workload, work pressure, and poor working environment [32, 33]. In the current study associated factors towards low back pain were lifting heavy weights during workplace, day, and night long shifts, Age, poor posture, and fatigue due to heavy work pressure and workload. The finding of this study can also be correlated with the study conducted in Nigeria. In this study, contributing factors towards low back pain were poor posture, long duty hours, long standing, age, lifting and shifting heavy material in workplace, and bending forward during the long period of clinical procedures [34].

CONCLUSIONS

Low back discomfort is a common health issue among nurses. Most nurses experienced low back pain on a regular basis. The factors that contributed toward low back pain were physical, social, psychological, work environmental, and patient care factors.

Conflicts of Interest

The authors declare no conflict of interest.

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