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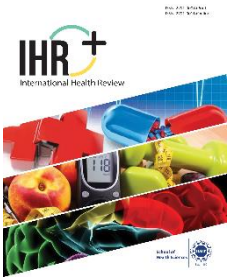

Title: **Prevalence of Non-specific Lower Back Pain among Nurses Working in Medical Wards and Emergency Units**

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Prevalence of Non-specific Lower Back Pain among Nurses Working in Medical Wards and Emergency Units

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ABSTRACT

The current study aimed to find out the prevalence of nonspecific lower back pain among the nurses of medical wards and emergency units. For this purpose, a cross-sectional study was conducted in various public and private hospitals in Okara, Pakistan. A sample size of 150 female nurses was considered for the study. Moreover, convenient sampling technique and questionnaires were used along with the Oswestry Disability Index to evaluate the lower back pain and the Numeric Pain Rating Scale was used to gauge its severity. Data analysis was performed using SPSS version 22 software.Among 150 female nurses, 44.7% were between 20-30 years old, 36.0% were aged 31-40, and 19.3% were aged 41-50. Out of these 150 female nurses, 61 worked in the medical ward and 89 were working in the emergency department. Statistical analysis with a p-value < 0.05 indicated a significant difference in the occurrence of lower back pain between these two groups. The medical ward had a lower prevalence of 42.3% as compared to the emergency department that had 63.1%, respectively. Conclusively, it was observed that a significant work-related health concern is the incidence of non-specific lower backaches among nurses working in hospital wards and emergency rooms. As compared to nurses in medical wards, emergency room nurses appeared to experience more intensified lower back discomfort due to prolonged working hours.

***Keywords*:** emergency unit, LBP prevalence, medical wards, nonspecific lower back pain, nurses

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Highlights

- This study highlighted the significant prevalence of non-specific lower backache among nurses working in medical wards and emergency units of the selected hospitals.
- The frequency of non-specific lower backache among nurses employed in medical wards and emergency units is a major work-related health concern.

1. INTRODUCTION

Globally, lower backache is a major issue in terms of public health [1–4]. Healthcare workers are the group most frequently affected, and it has become a significant issue in European nations among workers. Healthcare workers, such as nurses, nursing assistants, medical personnel, dentistry professionals, occupational therapists, and physical therapists are not devoid from LBP [5–8]. LBP has substantial socioeconomic ramifications that reduce the standard of living and have a detrimental effect on society [9, 10]. The number of disability-adjusted life years (DALY) because of LBP, soared by 54% between 1990 and 2015 globally, with the Middle East, Africa, and Asia accounting for a large portion of the increase [11, 12].

Nurses from different countries identified lower backache as the most prevalent ailment [13], globally 50-80% of people at least once in their lifespan experienced it, and is also the third leading reason for doctor's call after upper respiratory diseases and headaches [14]. Lower back pain is more prevalent in professions, such as nursing, laboring, and driving because of recurrent postural variations, carrying heavy weights, and bending [15–17].

To find out the occurrence of lower backache and how it can be associated with depressive symptoms, a cross-sectional survey was undertaken among Syrian nurses. In the past year, over 58% of nurses experienced LBP, and 46 out of 156 nurses showed signs of depression. Thirty-three out of those forty-six nurses were found to have LBP [18]. In Manado, a cross-sectional study was piloted among nurses in the emergency unit of seven hospitals. A total of 162 nurses participated and 92% of nurses reported suffering from a musculoskeletal disorder related to their employment in the previous 12 months, with 77% saying they had suffered from occupational low backache [19].

In Nigeria, a study investigating the primary causes of LBP was conducted. A total of 260 nurses who took part in the study had an average age of 26.5 and 159 of them were male. The findings indicated that prolonged standing while working shifts, improper posture, duty hours, heavy lifting, and body mechanics were the important factors associated with LBP [20]. The present study aims to determine the prevalence of nonspecific LBP among nurses of medical wards and emergency units.

2. METHOD

It was a cross-sectional study conducted in Okara's several public and private hospitals from May to September 2022. This study had 150 female nurses [21] in total, and it used easy sampling to identify potential participants. Based on inclusion and exclusion criteria, the participants were selected. The inclusion criteria included being between the ages of 20 and 50, having non-specific low back pain, working for more than a year, and being a nurse in an emergency room or medical ward. The following conditions were excluded: prior spinal injury, pathological back pain brought on by infection, back pain brought on by cancer and congenital issues, osteoporotic spine fracture, spinal stenosis, radiological signs of inflammatory diseases affecting the backbone, disc prolapse, prior medical history, low back pain before starting a job, and systemic disease. To gauge the degree of the pain and the standard Oswestry Disability Index's capacity to measure low back pain, data were gathered. Age, gender, employment history, and a history of low back pain are just a few of the demographic details collected from participants.

The purpose of this study was to determine the prevalence of non-specific lower backache among nurses who worked in the emergency room and medical ward. After getting a letter of approval from the medical superintendent of the hospital, questionnaires were distributed to collect data from willing participants from selected hospitals.

2.1. Ethical Consideration

All the ethics and morals taken in this research hold the approval of the head of the department. During data collection, consent was approved by each participant after explaining the goals of the study. No participants were forced to join a study and it was also assured that all the information that was provided by participants was confidential.

2.2. Data Analysis

The data were entered and examined using SPSS version 22 (Statistical Package for the Social Sciences). Frequency tables were used to represent applicable variables. All values were calculated by applying descriptive statistics. The mean and standard deviation are given for the numerical statistics, such as age. The incidence of nonspecific lower back pain in the medical and emergency wards was compared using the independent t-test and the Chi-square test.

3. RESULTS

Among 150 nurses, 67 (44.7%) subjects were in group 1 aged between 20-30 yrs. Additionally, 54(36.0%) were in group 2 aged between 31-40 yrs. Furthermore, 29 (19.3%) were in group 3 aged between 41-50 yrs. Out of the total, 90 were married and 60 were unmarried. Out of 150, 61 nurses were from the medical ward and 89 subjects were from the emergency department. Demographic data including age, marital status, and hospital wards, is mentioned in Table 1. The results of this research revealed that 68 nurses were suffering from mild pain, and 62 and 20 experienced moderate and severe pain respectively as mentioned in Table 2. P value according to the different actions is presented in Table 3. In Table 4, pain severity among nurses of medical and emergency units is mentioned.

Table 1. Demographic Data

Variables	Groups	Frequency(%)
Age	20-30	67(44.7)
	31-40	54(36)
	41-50	29(19.3)
Marital Status	Married	90(60)
	Unmarried	60(40)
Hospital Wards	Medical	61(40.7)
	Emergency	89(59.3)

Table 2. Pain Severity on NPRS among Nurses

Pain	Frequency(%)
Mild	68(45.3)
Moderate	62(41.3)
Severe	20(13.4)

Note. NPRS (Numerical Pain Rating Scale)

Table 3. p-value According to Actions

Variables	Likelihood value	Linear-by-linear association	*p*-value
Pain Intensity	10.253	8.517	0.004
Lifting	10.381	8.326	0.004
Walking	9.870	8.568	0.003
Sitting	10.859	8.549	0.003
Standing	12.360	10.105	0.001

Note. *$p < 0.05$ there is statistical; significant difference

Table 4. Low Backache among Nurses in the emergency Unit and Medical Wards

	Wards	*N*	*p*-value	standard deviation	% of pain
Pain Severity	Medical	61	0.03	0.622	42.3%
	Emergency	89	0.02	0.772	63.1%

Note. *$p < 0.05$ there is statistical; significant difference

4. DISCUSSION

The current research focused on identifying the prevalence of non-specific lower backache among nurses employed in emergency units and medical wards. According to the findings, a significant percentage of nurses in both settings claimed to experience lower back pain. However, there were some clear distinctions between the two groups. In the context of sample size, there were more nurses in the emergency unit (N=89) than in the medical ward (N=61). According to this, the outcomes from the emergency room may be more indicative of the significant nurse population working there. Azizpour and colleagues [22] conducted a survey involving healthcare professionals to investigate the prevalence of LBP among them, assess the role of poor workplace posture in causing LBP, and explore potential connections between LBP, occupational posture, and other variables. The participants comprised 27 physiotherapists, 34 nurses, 30 dentists, and 16 nutritionists. The study's findings underscored the significance of adjusting one's working posture and concluded that improper head-neck and trunk postures represent uncontrolled reasons causative to the onset of LBP.

A local hospital conducted a cross-sectional survey to examine the prevalence of lower backache among nurses and identify contributing factors. The research revealed that 59%of nurses currently experience LBP. Among the findings, the highest prevalence rates were observed in registered nurses aged 30-39 (54%), those classified as overweight (58%), and those working in obstetrics and gynecology (49%). Additionally, participants on six-month rotations had a significantly higher LBP prevalence of 76% as compared to those on annual rotations (16%). In conclusion, the study conducted by Dlungwane et al. [23] demonstrated a substantial association between occupational characteristics and LBP among nurses at the hospital. Contrasting with this, in this study nurses working in emergency units suffered more from lower backache as compared to nurses working in medical wards.

Edwards et al. [24] surveyed three learning hospitals in Kerman, Iran, encompassing all departments responsible for patient handling and transfer, including nurses, assistants, nurse co-assistants, and paramedical staff. Among the 243 surveyed nurses, 31.4% were under 30 years old, and approximately 15% had less than 10 years of employment. Most of the participants were female (87.7%). The survey findings revealed that nearly 60% of the participants reported lower back pain (LBP). Based on the results, 12-months prevalence rate of LBP was estimated at 69.5%, respectively. The study's outcomes indicated that nurses who suffered from LBP tend to be older, male, possess higher levels of work-related education, work longer hours, and have a higher BMI. In this study the nurses suffering from lower backache were females and mostly working in the emergency department.

In Manado, ECU surveyed medical staff at 7 different hospitals, utilizing forms to evaluate psychosocial factors, physical job demands, and self-reported lower back discomfort. A total of 162 nurses from ECU joined the study, representing an 81% response rate. The research revealed that 92% of the nurses reported experiencing occupational disorders in the previous year, with 77% reporting work-related lower back pain (WR-LBP). The study's findings indicated significant correlations between age, psychosocial effort, and uncomfortable positions with WR-LBP, as detailed in the research by Doda et al. [19].

It is significant to highlight that both settings continued to have extremely high levels of lower backache prevalence, suggesting the need

for interventions and preventative measures. To lessen the frequency and severity of lower back pain among nurses, strategies like ergonomic assessments, workplace adaptations, instruction in safe lifting practices, and encouraging regular exercise and physical activity may be helpful. The cross-sectional design merely offers a momentary snapshot of the incidence of lower back discomfort. To grasp the issue more thoroughly, longitudinal studies and additional research into the risk factors and potential solutions would be helpful.

4.1 Conclusion

The current study highlighted the significant prevalence of non-specific lower backache among the nurses working in medical wards and emergency units of selected hospitals. Comparatively, the data implied that nurses working in rooms were more prone to lower back discomfort than the ones working in medical wards. The findings underlined the need to focus interventions and preventive strategies to reduce the incidence and effects of lower backache in various healthcare settings. The frequency of non-specific lower backache among nurses employed in medical wards and emergency units is a major health concern in terms of the working environment. Nurses in the emergency units seem to have a higher occurrence rate than those in medical wards. The frequency and effects of lower backache among nurses can be decreased by implementing focused treatments and preventive measures, such as ergonomic adjustments, training programmes, and encouraging physical fitness.

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