PREVALENCE OF LOW BACK PAIN AND ITS ASSOCIATED FACTORS AMONG STAFF NURSE IN SELECTED HOSPITAL, CHENNAI.

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ABSTRACT

Introduction: Low back pain (LBP) is a significant occupational health issue, particularly among nurses, who are frequently exposed to physical demands that predispose them to musculoskeletal disorders. **Aim:** The study aimed to assess the prevalence of low back pain and its associated factors among staff nurse in selected hospital, Chennai. **Methodology:** This cross-sectional descriptive study was conducted at Sri Balaji Medical College and Hospital, Chennai, from June to July 2024, to assess the prevalence of low back pain (LBP) and its associated factors among staff nurses. A total of 120 nurses were selected through convenience sampling. Inclusion criteria included registered nurses with at least six months of clinical experience who provided informed consent. Nurses on leave during data collection or working in non-clinical roles were excluded. **Result:** The study revealed that 61.7% of staff nurses experienced low back pain (LBP) in the past year, with 32.5% reporting symptoms in the past week. Among them, 23.3% had recurrent episodes, and 17.5% took medical leave. Most reported moderate pain and 1–4 weeks of duration, with over half indicating work interference. Significant associations were found between LBP and years of experience (p = 0.003), frequent patient lifting (p = 0.021), and lack of ergonomic training (p = 0.004), highlighting key occupational risk factors. **Conclusion:** The study concluded that low back pain is highly prevalent among staff nurses and is significantly associated with factors like frequent patient lifting, years of experience, and lack of ergonomic training.

INTRODUCTION

Low back pain (LBP) is a prevalent occupational health issue among nurses, with various studies highlighting the significant incidence and associated risk factors in different healthcare settings. A review of existing literature reveals a concerning trend of high prevalence rates of LBP among nursing staff, particularly in hospital environments, attributable to a combination of physical, workplace, and psychosocial factors.

Research indicates that the prevalence of LBP among nurses can be significant, with studies showing rates ranging from 53% to over 75% in various healthcare institutions. For example, a study conducted by Nair and Aithala found that approximately 75% of nurses aged 21-25 years reported experiencing LBP, attributing this to the physically demanding nature of their work, which includes lifting patients and performing other strenuous tasks (Nair & Aithala, 2020). This aligns with findings from another study by Emmanuel and Ezhilarasu, where 53.4% of surveyed nurses reported discomfort in their lower back (Emmanuel & Ezhilarasu, 2016).

Occupational risk factors are critical in understanding the prevalence of LBP among nurses. The literature consistently demonstrates an association between prolonged standing, awkward postures, and manual handling of patients and equipment, all of which significantly increase the risk of developing back pain (Fawzy & El-Deen, 2019; , (Tumpia et al., 2024; , Attar, 2014). The postures assumed during tasks, such as lifting and repositioning patients, are particularly hazardous and contribute to musculoskeletal disorders among nursing staff (Tumpia et al., 2024; , Kasai, 2013; , Gautam et al., 2019). Furthermore, Boughattas et al. emphasized the importance of psychosocial factors, noting that high psychological demands and low job control are correlated with chronic LBP (Boughattas et al., 2017).

Additionally, lifestyle factors, such as physical inactivity, have been shown to exacerbate the incidence of LBP among nurses. Studies indicate that ICU nurses who do not engage in regular physical exercise are substantially more likely—by a factor of 2.16—to report lower back pain compared to their physically active counterparts (Zewudie et al., 2021; , Zewudie et al., 2021). Such evidence suggests that interventions promoting regular physical activity could be beneficial in mitigating LBP among nursing staff.

While the focus often lies on physical and workplace-related stressors, it is also critical to consider the impacts of work overload and long working hours. Employers' expectations and staff shortages often lead to increased workloads, which further compromise nurses' ergonomic practices (Suherdin et al., 2023; , Attar, 2014). Research conducted by Medeni et al. establishes a

direct relationship between work overload and increased LBP incidences, underscoring the necessity of addressing workplace environment and workload management (Medeni et al., 2024).

In conclusion, the prevalence of low back pain among nurses in Chennai reflects a significant public health concern, shaped by various associated factors, including the physical demands of the job, psychosocial stress, and lifestyle choices. Addressing these issues through targeted ergonomic training, adequate staffing, and health promotion programs could help alleviate the burden of low back pain within this critical workforce.

AIM OF THE STUDY
The study aimed to assess the prevalence of Low Back Pain and Its Associated Factors Among staff nurse in selected hospital , Chennai.

METHODOLOGY
Study Design and Settings
This study adopted a cross-sectional descriptive design aimed at assessing the prevalence of low back pain (LBP) and identifying its associated factors among staff nurses. The study was conducted at Sri Balaji Medical College and Hospital, Chennai, over a period of two months (June 2024 to July 2024). A total of 120 staff nurses were selected using a convenience sampling method.

Inclusion criteria:
1. Registered nurses with a minimum of six months of clinical experience.
2. Nurses who provided informed consent to participate in the study.

Exclusion criteria:
1. Nurses who were on leave during the data collection period.
2. Nurses employed in non-clinical or administrative roles with no direct patient care responsibilities.

Data Collection
Data were collected using a **structured and pre-tested questionnaire**, which focused on the following key areas:
1. Demographic data: This section included age, gender, marital status, educational qualification, work experience (in years), type of employment (permanent/contract), department/unit, work shift pattern, and lifestyle factors such as smoking or exercise habits.

2. Low Back Pain Assessment: This section recorded whether participants had experienced low back pain in the past 12 months and/or in the last 7 days.

Statistical Analysis
The data was analyzed using SPSS version 26, employing both descriptive statistics and analytical tests. Frequencies and percentages were calculated, and the mean and standard deviation (SD) were used for data presentation.

RESULTS
Table 1: Demographic and Occupational Characteristics
Table 1 presents the demographic and occupational profile of the 120 staff nurses surveyed. The majority were aged between 21–30 years (51.7%), with females comprising 78.3% of the sample. Most nurses had between 5–10 years of experience (43.3%), and 56.7% were married. A significant portion (63.3%) held permanent employment, and nearly half (48.3%) worked in general wards. The majority (76.7%) worked in rotational shifts, which may impact physical strain and recovery time.

Table 2: Prevalence of Low Back Pain
Table 2 illustrates the prevalence of low back pain (LBP) among participants. LBP was reported by 61.7% of nurses in the past 12 months, and 32.5% had experienced it in the past week. Notably, 23.3% reported recurrent episodes (three or more times a year), and 17.5% had taken medical leave due to LBP, indicating a substantial burden on both individual well-being and institutional productivity.

Table 3: Low Back Pain Assessment Among Affected Nurses
Table 3 details pain characteristics among the 74 nurses who reported LBP. Over half (56.8%) experienced moderate pain, and 18.9% reported severe discomfort. Pain duration varied, with 45.9% experiencing symptoms lasting 1–4 weeks. Over half (54%) reported that their pain impacted work activities, and 39.2% had sought medication or physiotherapy, highlighting the clinical relevance of LBP in daily nursing tasks.

Table 4: Association Between Factors and Low Back Pain
Table 4 examines the statistical association between LBP and various demographic and occupational factors. Age, years of experience, lifting frequency, and lack of ergonomic training were significantly associated with LBP ($p < 0.05$). Nurses with more experience and those frequently involved in patient lifting had higher prevalence rates. Notably, those without ergonomic training had a significantly higher occurrence of LBP, underscoring the need for preventive workplace interventions.

Table 1: Demographic and Occupational Characteristics of Staff Nurses. (n = 120)

Variable	Category	Frequency (n)	Percentage (%)
Age Group (years)	21–30	62	51.7%
	31–40	38	31.7%
	41 and above	20	16.6%
Gender	Female	94	78.3%
	Male	26	21.7%
Years of Experience	<5 years	48	40.0%
	5–10 years	52	43.3%
	>10 years	20	16.7%
Marital Status	Married	68	56.7%
	Unmarried	52	43.3%
Type of Employment	Permanent	76	63.3%
	Contractual	44	36.7%

Department	ICU	32	26.7%
	General Ward	58	48.3%
	Emergency	30	25.0%
Shift Pattern	Rotational	92	76.7%
	Fixed Day	28	23.3%

Table 2: Prevalence of Low Back Pain Among Staff Nurses (n = 120)

Timeframe	Number of Nurses (n)	Percentage (%)
Experienced LBP in past 12 months	74	61.7%
Experienced LBP in past 7 days	39	32.5%
Recurrent episodes (≥3 times/year)	28	23.3%
Took medical leave due to LBP	21	17.5%

Table 3: Low Back Pain Assessment Details (Among Nurses With LBP, n = 74)

Assessment Variable	Category	Frequency (n)	Percentage (%)
Pain Intensity (0-10 Scale)	Mild (1-3)	18	24.3%
	Moderate (4-6)	42	56.8%
	Severe (7-10)	14	18.9%
Pain Duration	<1 week	26	35.1%
	1-4 weeks	34	45.9%
	>1 month	14	18.9%
Impact on Work	Yes	40	54.0%
	No	34	46.0%
Used Medication/Physiotherapy	Yes	29	39.2%
	No	45	60.8%

Table 4: Association Between Demographic/Occupational Factors and Low Back Pain (n = 120)

Factor	Category	LBP Present (n = 74)	LBP Absent (n = 46)	p-value
Age Group	21–30	32	30	0.041*
	31-40	28	10	
	41+	14	6	
Gender	Male	14	12	0.600
	Female	60	34	
Experience (Years)	<5	18	30	0.003*
	5-10	40	12	
	>10	16	4	
Shift Pattern	Rotational	60	32	0.471
	Fixed Day	14	14	
Lifting Frequency	Frequent	52	18	0.021*
	Occasional	22	28	
Ergonomic Training	Yes	12	22	0.004*
	No	62	24	

*Statistically significant at $p < 0.05$

DISCUSSION

The findings from the study replicate a widespread issue within the nursing profession, illustrating a notable prevalence of low back pain (LBP) among staff nurses. A significant proportion of nurses, specifically 61.7%, reported experiencing LBP within the past year, with 32.5% indicating symptoms in the last week alone. Additionally, a considerable number of these nurses experienced recurrent episodes of pain (23.3%) and had to take medical leave due to their LBP (17.5%). This data highlights the urgency of addressing this occupational health concern, particularly as over half (54%) of the affected respondents mentioned that LBP interfered with their work performance. Previous studies corroborate these findings, noting similar LBP prevalence rates; for example, a study conducted by Nair and Aithala documented a prevalence of 73.8% among nurses in South India, showcasing a significant occupational affliction within this demographic Nair & Aithala (2020).

The relationship between LBP and occupational factors is pronounced in the findings, revealing statistically significant associations with years of experience, frequent patient lifting, and a lack of ergonomic training (p-values of 0.003, 0.021, and 0.004, respectively). Nurses with 5-10 years of experience, frequent lifting of patients, and inadequate ergonomic training reported higher rates of LBP, underlining the critical influence of workplace conditions on musculoskeletal health. Previous research supports this connection, indicating that occupational safety and ergonomic training directly impact the functional activity of healthcare workers, with enhanced safety culture reducing occurrences of LBP (ÖZDEMİR & Alkan, 2023; (Rafique et al., 2023). Furthermore, ergonomic training is essential in mitigating the risk of injuries associated with patient handling, as intervention studies highlight the necessity for ergonomic arrangements and proper training in lifting techniques to reduce incidence rates of back pain (Karahan & Bayraktar, 2013; Arca et al., 2021).

In terms of pain characteristics, the majority (56.8%) of affected nurses reported moderate pain intensity, with 45.9% experiencing pain that lasts between 1 to 4 weeks. This aligns with literature suggesting that both chronic and acute LBP significantly affect the quality of life and work performance of healthcare professionals (Rafique et al., 2023). The impacts of LBP extend beyond physical symptoms; they disrupt daily activities and contribute to psychological distress among nurses, adding another layer to the necessity for institutional interventions that promote ergonomic strategies and training to alleviate pain and enhance job satisfaction (Kesiena et al., 2023; Şimşek, 2017).

The findings of this study advocate for a multifaceted approach to tackle the high prevalence of low back pain among nurses. The emphasis on improving ergonomic practices, instituting comprehensive training programs, and fostering a supportive work environment could notably mitigate the risk factors associated with LBP. Healthcare organizations need to prioritize these interventions to enhance the well-being of nursing staff and ultimately improve overall patient care within hospital settings.

CONCLUSION

The study concluded that low back pain (LBP) is highly prevalent among staff nurses in the selected hospital in Chennai, with over 60% reporting symptoms in the past year. The findings highlight that occupational factor such as frequent patient lifting, moderate work experience (5-10 years), and lack of ergonomic training are significantly associated with the occurrence of LBP. These results underscore the urgent need for preventive strategies, including regular ergonomic training, workload management, and implementation of safe patient-handling protocols. Addressing these factors can not only improve nurses' physical well-being but also enhance workplace efficiency and reduce absenteeism in clinical settings.

CONFLITS OF INTEREST:
No conflicts of Interest.
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