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Low Back Pain among Nurses in a Tertiary Hospital, South India

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Abstract

A cross-sectional survey was carried out to assess the prevalence of Low Back Pain (LBP) among nurses, their risk status and association between LBP and selected demographic and clinical variables. The sample was female nurses between the age group of 20 and 60 years who could speak and write English, and willing to participate. A demographic proforma and a standardized screening tool for LBP were used for data collection. Approval for Institutional Review Board and written consent from participants was obtained. The completed forms (1284) were analysed, 53.4 % of the nurses had LBP and 17.1 % among them were at high risk status. There was a significant association ($p<0.001$) between LBP and age, body mass index, experience, and place of work. As LBP is common among nurses and nurses comprise majority of the health care professionals adequate precautions should be taken by the nurses to prevent low back pain. Periodic screening of nurses for low back pain and referring the high risk nurses for immediate medical assistance may prevent complications related to low back pain and improve the functional ability of the nurses. Regular education on good body postures, physical fitness and appropriate body mechanics may help in prevention of low back pain among nurses.

Keywords: Low back pain; Nurses; Risk status; Prevalence

Introduction

Low back pain (LBP) is prevalent in many industrialized societies. There is a high prevalence of LBP among staff members working in hospitals [1]. Of all the health care workers, a higher prevalence of LBP is reported among nurses [2,3]. A study among nurses in Sudayr region revealed that 53.2 % of the nurses had worked related LBP and a positive correlation was seen between place of work and pain duration [4]. The nature of work influences the prevalence of LBP among nurses. Nurses working in areas requiring strenuous physical activity are more prone for LBP. Improper postural mechanics also has a direct effect on the prevalence of LBP. Patient lifting and postural requirements during the work poses a high risk to nurses in a hospital environment [5]. Especially in the developing countries absence or lack of lifting aids forces the nurses to strain during shifting of patients. It is reported that poor knowledge of back care ergonomics and unavailability of lifting equipment are major predisposing factors to LBP among nurses [6]. Overweight and obesity also seem to worsen the condition among adults [7]. Nurses are the major work force of any health care. Their wellbeing will reflect on the standard and quality of patient care. LBP is a common occupational hazard which can affect the performance of nurses in the clinical area.

Christian Medical College is a tertiary hospital with multispecialty units. Nurses comprise of maximum proportion (40 %) of health care workers. LBP is a constant complaint of nurses working in the institution. On an average, in a week around 15–20 nurses report to the staff health clinic with low back pain who require leave. Hence this study was aimed to throw light into the magnitude of the problem and to identify the nurses at high risk for physical ailment related to LBP in order to provide appropriate services to prevent major complications. Also, this study was aimed to identify factors which may have association with low back pain in order to recommend ways to prevent LBP and to plan for future research in the prevention of LBP.

The objectives of the study were to:

- Assess the prevalence of LBP among nurses working in Christian Medical College, Vellore.
- Assess the risk status of the nurses with LBP.
- Assess the association of LBP with specific demographic and clinical variables.

Method

A cross-sectional survey was carried out among the nurses working in Christian Medical College, Vellore. Total enumerative sample technique was used to select the sample. Female nurses between the age group of 20 and 60 years who could speak and write English were included in the study. Nurses on long leave, unwilling to participate in the study and with experience less than 3 months were excluded.

The instrument used was a self-administered questionnaire which included demographic data and a survey instrument. The demographic data comprised of age, designation, years of experience, place of work, body mass idex (BMI) categorized as healthy (18.5 to <25), overweight (25 to <30), obese (30 to <35), and very obese (≥ 35) and presence of low back pain. Keele STarT Back Screening Tool, a standardized and validated instrument[9] adopted from the Keel's University was used for screening low back pain among nurses. It contained 9 statements related to back pain and its impact on the activities of daily living within 2 weeks.

The study was ethically approved by the Institution Review Board. Permission was obtained from the Nursing Superintendent of the Institution and informed written consent was obtained from each participant. The consent form contained the details of the study and emphasized voluntary participation. Anonymity and confidentiality of information was maintained.

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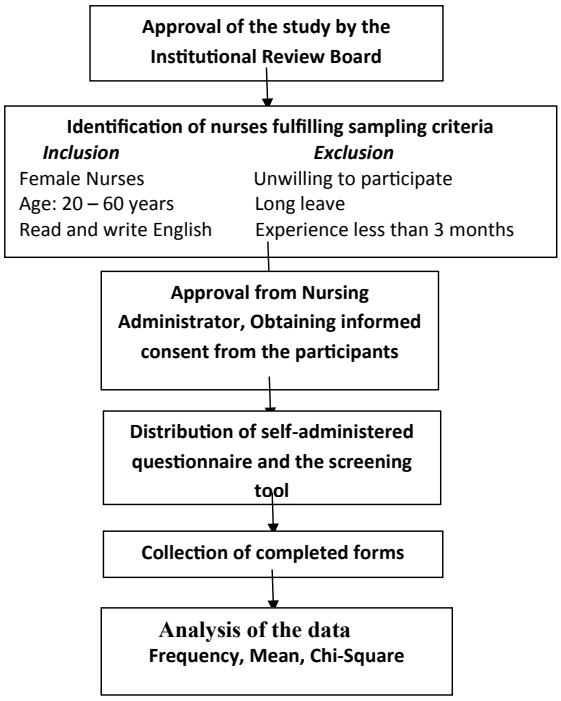

Figure 1: Methodology of the study.

The self-administered questionnaire and the screening tool were given to all the nurses fulfilling the sampling criteria. Nurses were asked to provide the demographic details requested on the questionnaire and also a point prevalence of low back pain was assessed by the acceptance or rejection of presence of LBP described as discomfort in the back that may or may not extend to the legs, hips, and buttocks. The Keele STarT Back Screening Tool was used to identify the risk status of the nurses related to LBP. It contained statements related to nature of pain, radiation of pain, the effect of pain on activities of daily living and the perception on mental wellbeing. The total score was 10. Score less than 3 were interpreted as low risk. Score more than 4 had sub scores. Sub scores 3 or less were categorized as medium risk and 4 or more as high risk. The methodology is illustrated in Figure 1.

The data was analyzed using Statistical Package Social Software 17. Descriptive statistics were used to identify the prevalence and risk status. Chi square was used to find the association between LBP and specific socio-demographic variables.

Results and Discussion

Of the 1800 questionnaires distributed, 1343 forms were returned. Among the 1343 forms, there were 1284 completely filled forms which were analysed and the results are presented in this article.

Majority of the nurses were in the age group of 20–35 years (70%), staff nurses (82.6%), had experience less than 10 years (53.9%), and were overweight or obese (39.8%) (Table 1). Among the study subjects 53.4% had low back pain which was expressed as discomfort in the lumbosacral region of the back that did or did not radiate to the legs, hips, and buttocks (Figure 2). This finding is similar to the prevalence of LBP reported among nurses in Sudayr region (53.2%) [3]. A cross sectional study among 265 Thai hospital nurses over a period of one year revealed that 61.5 % of the nurses had LBP [8]. Since the prevalence is almost the same in different parts of the world it indicates that nurses are prone for LBP and that measures had to be taken to prevent LBP.

The risk status of the those with LBP assessed using Keel's University screening tool for low back ache revealed that majority of the nurses were under low risk status (52.3%) and 17.1% were at high risk status (Figure 3). Literature states that people with LBP are at high risk (25%) for disability [9]. Chronic low back pain may lead to functional disability and in turn affect the standard and quality of patient care. Frequent absenteeism may result from the constantly existing problem. Periodic screening of nurses and prompt intervention should be done

S.no	Variables	n	%
1	*Age*		
	20–35years	900	70.1
	>35–50 years	340	26.5
	>50-60 years	44	3.1
2	*Designation*		
	Multipurpose Health Worker	110	8.6
	Hospital Auxilliary	63	4.9
	Staff nurse	1061	82.6
	Charge Nurse	50	3.9
3	*Years of experience*		
	<1 year	154	12.0
	<5 years	377	29.4
	5-10 years	314	24.5
	10-20 years	326	25.4
	>20 years	113	8.8
4	*Place of work*		
	General Surgical	141	11.0
	General Medical	213	16.6
	Semi Private	105	08.2
	Paediatric	156	12.1
	Maternity	127	09.9
	Private block	152	11.8
	Speciality	169	13.2
	Outpatient Department	52	04.0
	Accident and Emergency	23	01.8
	Operating room	146	11.4
5	*Body Mass index*		
	Underweight	128	10
	Healthy and Low Risk	645	50.2
	Overweight	411	32
	Obese	82	6.4
	Very Obese	18	1.4

Table 1: Association between Nurses demographic and clinical variables of the nurse (n=1284).

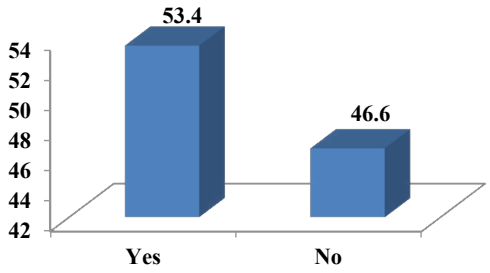

Figure 2: Prevalence of low back pain among staff nurses.

Figure 3: Risk status of the nurses based on the manifestation.

Demographic variables	Low back pain				Chi square value	p value
	Yes		No			
	n	%	n	%		
Age						
20–35years	431	62.8	469	78.4		
>35–50 years	223	32.5	117	19.6	37.889	0.000***
>50-60 years	32	4.7	12	2.0		
Designation						
Multipurpose Health Worker	64	9.3	46	7.7		
Hospital Auxiliary	39	5.7	24	4.0		
Staff nurse	553	80.6	508	84.9	4.415	0.220
Charge Nurse	30	4.4	20	3.3		
Years of experience						
<1 year	75	10.9	79	13.2		
<5 years	166	24.2	211	35.3		
5-10 years	163	23.8	151	25.3	37.065	0.000***
10-20 years	204	29.8	122	20.4		
>20years	78	11.4	35	5.9		
General Medical	73	10.6	68	11.3		
Semi Private	94	13.7	119	19.9		
Paediatric	63	9.2	42	7.0		
Maternity	81	11.8	75	12.5		
Private block	54	7.9	73	12.2		
Speciality	86	12.5	66	11.0		
Outpatient Department	100	14.6	69	11.5	33.936	0.000***
Casualty	36	5.2	16	2.7		
Operating Room	7	1.0	16	2.7		
	92	13.4	54	9.0		
Body Mass Index						
Underweight	49	7.1	79	13.2		
Healthy	334	48.7	311	52.0		
Overweight	243	35.4	168	28.0	20.481	0.000***
Obese	51	7.4	31	5.2		
Very Obese	9	1.3	9	1.5		

***p=0.000

Table 2: Association between LBP and specific demographic and clinical variables of the nurse (n=1284).

to avoid worsening of the condition and its effect on the work routines. Prevention of LBP should be focused through regular education on body postures, maintenance of physical fitness, and proper body mechanics.

There was significant association (p=0.000) between LBP and age, experience, place of work, and BMI (Table 2). Similar finding is reported by Viester et al and according to Hinmikaiye and Bamishaiye (2012) LBP is reported among nurses with increasing age [6,10]. The influence of age and experience on LBP indicates that age related physical problems may significantly affect LBP. It is the responsibility of the health care setting to ensure regular physical assessment of workers and provision of appropriate care to ensure good physical health of the individual. As place of work significantly influence the presence of LBP, the nurses may be rotated in their work place to provide balanced level of physical. The significant association between LBP and BMI reveal the need for nurses with ideal body weight. Provisions like gym should be made within the institution to ensure healthy weight. Incentives can be provided for nurses maintaining good health and not availing frequent leave due to medical ailments especially LBP.

The data was collected as self-report and there can be bias in the information provided owing to the fear of deployment among the unconfirmed staff nurses.

Conclusion

Low back pain is common among nurses and they are at risk for complications related to LBP. Periodic screening of nurses for LBP may help to identify nurses at risk and prevent major physical injury. Regular in service education on body postures, maintenance of physical fitness, and body mechanics may create awareness among nurses to take precautions. Back schools will be a solution to the existing problem of LBP among the health care providers and must be promoted among health care settings to enhance a healthy group of professionals. Also, good life style practices and food habits are essential to maintain ideal weight which will help in preventing LBP.

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