PREVALENCE AND RISK FACTORS OF LOW BACK PAIN AMONG NURSES IN SUDAYR REGION

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Abstract

Objective: To study the prevalence and risks of work-related low back pain (LBP) among nurses in Suydar region, Riyadh, Saudi Arabia, and its effect on their regular activities.

Subjects and Methods: A self-administered questionnaire (Nordic Musculoskeletal Questionnaire) was distributed to 300 nurses at Suydar region. The questionnaire included demographic data, history and characteristics of LBP before and after working as a nurse, the effect of LBP on regular activities and current LBP. A visual analogue pain scale was used to score the intensity of the pain. Results: Two hundred forty eight (82.66%) of the 300 registered nurses completed the questionnaire; mean age and standard deviation of the respondents were 26.9, 8.45 years. The prevalence of work-related LBP was 53.2%. Moderate pain intensity and were 31.8%. There were positive correlation between pain duration and place of work. The average duration of pain was a week or more (45.6%). Limitation of activities of (n=113) 55.1%. Sick leaves (n=135) 53.9%. Visual analogue scale for measuring the intensity of pain was 38.4% (n=96) of nursing staff scored 5 or more on the scale with average 4.16 of total.

Conclusion: Work related prevalence rates of LBP among nurses at Suydar regions is high and affect their daily activities, necessitating changes in work settings and observing there body ergometer with recommendation of back school education.

Keywords: Prevalence, back pain, nurses, Sudayr

Introduction

LOW back pain (LBP) is an important public health problem in all industrialized nations. It is associated with major cost, in terms of health resource usage and worker disability and absentee-ism (Frank JW, 1996). Most epidemiological data concerning (LBP) are related to developed and industrialized countries and there is little information about LBP in the general or working population in developing countries. This lack of research leaves a profound gap in what is known about LBP in a large part of the world, where the bulk of the world's working population resides (Jekel J,. *1996)*

Low back pain remains a common and costly problem among the nursing profession. Many studies report higher prevalence of back pain and occupational back injuries for nurses compared with other occupational groups (Lagerström M, 1998 & Maul H 2003). Swedish statistics show a six fold excess risk of over-exertion back injuries among assistant nurses compared with other employed women in Belgium (Szpalski M, 1995). These injuries can lead to sick-leaves and persistent medical problems or job changes (Hignett. S, 1996). Most injuries occur during patient transfer. Work-related injuries among nursing personnel are costly problems in terms of both workers' pain and suffering as well as medical expenses and loss of working days for organizations (Maul H, 2003). Nursing personnel experience a higher rate of workplace hazards exposure than other health care workers because nurses perform more bedside procedures than other health workers (Maul H, 2003). Occupational hazards include; physical, mechanical, biological and psychological hazards. Biological hazards are mainly infectious hazards such as bacteria, viruses, fungi and parasites which cause diseases such as HIV/AIDS, Tuberculosis, Hepatitis and other blood borne infections (Ofili AN, Sogbesan S., 2002)). Physical hazards commonly found in health facilities include radiation, exposure to slippery floors, exposure to body fluids and assault by confused patients. Mechanical hazard include back pain / injury because of manual lifting of patients in particular. This is the main and a common hazard in Hospitals and Health Centers whereby lifting, turning, moving and adjusting beds by hand are routine activity of daily work. The aim of this study was to assess the prevalence, characteristics, point prevalence and associated risk factors for Low Back Pain among nurses in four major hospitals at Suydar region, Riyadh, Saudi Arabia.

Subjects and Methods

The current study is a cross sectional study, a self-administered questionnaire was used for data collection. The questionnaire was piloted initially among 10 registered nurses and no major modifications were

needed. Data were be collected from nurses in their place of work after an approval from the general Manger of each hospital The questionnaire consists of three sections : the first section is demographic data, age, height , weight, gender, marital status, number of family, smoking, presence of hypertension, diabetes. The second section will is history of LBP, e.g. onset of pain or injury, duration of LBP, episodes, Finally the third section is work setting and effect of LBP on daily activities, limitations due to LBP, as well as the presence of current LBP and rating the intensity LBP on a scale of 0 (no pain) to 10 (maximum pain) that represented a numerical system of 10 cm on a visual analogue scale. The questionnaire was distributed to 250 nurses in different departments in four major hospitals at Suydar region, Riyadh, Saudi Arabia. Personal and professional characteristics were used to compare the experience of work-related and non-work-related LBP according to gender.

Data Analysis

Data were processed using the Statistical Package for Social Sciences (SPSS) computer software. Differences were considered significant p value was < 0.05. The Pearson chi-square test was used to assess the extent of association between two categorical variables. In case of skewed non-normal variables like rating score, the median, 2.5th and 97.5th percentiles were used as measures of location and variation. The Mann-Whitney U nonparametric test was used to assess the significance of the difference between two quantitative variables.

Results

A total number of 300 questionnaires were distributed to nurses working in 3 different hospitals in Sudayr region, overall response rate of (n=248) 82.6% were responded Table (1); Average age of study group was 27.9 High percentage of them (n=160) 64 % were at the age group of 20 to 29 years old. Most of respondent were females (n=243) 98%. About 62.9% of nursing staff had work experience 1 - 5 years (n=156). The highest percentage of them were General practice / Home care department (n=220) 88.7%. Of study group 61,3% had low back pain with severity between mild to moderate pain with (n=152). The average duration of pain was one week or more. The highest limited activities was Pulling, pushing and patient handling in (n=113) 45.5%. The cost of low back pain in nursing staff was sick leave (n=135) 53.9%. visual analogue scale measuring the intensity of pain confirmed that , 38.4% (n=96) of nursing staff scored 5 on the scale, and 57.6% had pain scale 5 or more.

Table 1: Demographic data and prevalence

	Frequency (n)	Percent%

Age	20-29 Year	159	64.0
	30-39 Year	25	10.0
	40-49 Year	64	26.0
	Total	248	100.0
Gender	MALE	5	2.0
	FEMALE	243	98.0
Specialty	Cardiology / Geriatrics	18	7.3
	orthopedic	10	4.0
	General practice / Home care	220	88.7
Total_Work_Period	<1 Year	4	1.62
	1-5 years	156	62.94
	6-10 years	21	8.46
	11-15 years	63	25.41
	>15 years	4	1.62
LBP_Severity	None	98	39.5
	Mild	88	35.4
	Moderate	64	25.8
Average_Duration_of_Pain	< 1 week	97	38.8
	1 week	114	45.6
	2-4 weeks	9	3.6
	> 4 weeks	30	12.0
Activity_limitations	None	67	27.0
	Lifting carrying	8	3.2
	Pulling, pushing, patient handling	113	45.5
	Prolonged sitting	23	9.3
	Prolonged standing	37	14.9
Cost_of_LBP	No	15	6.0
	Sick leave	135	54.4
	Reduced nonwork activities	9	3.6
	Reduced number of working hours	14	5.6
	Change of work setting	39	15.7
	Others specify	36	14.5
Pain_Score	0	8	3.3
	1	17	7.2
	2	41	16.8
	3	12	4.8
	4	27	10.8
	5	96	38.4

	6	27	10.8
	7	10	4.0
	10	10	4.0

Fig 1: Shows the prevalence and severity of LBP

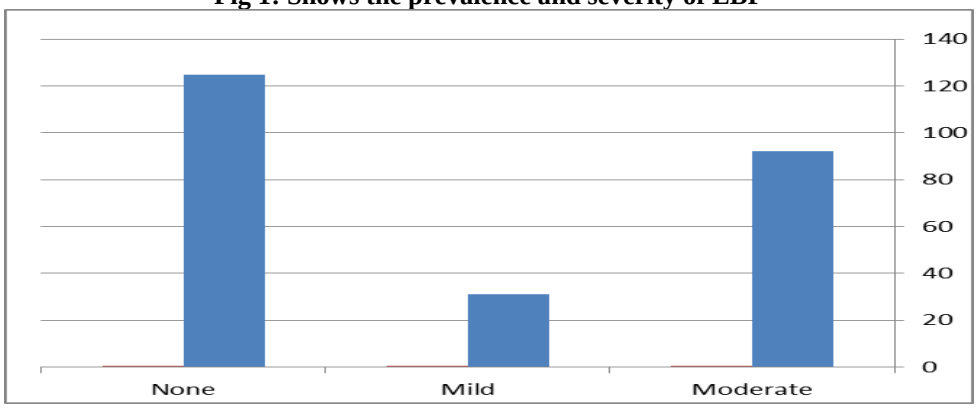

Fig 2: Shows the Risks Factors of LBP Among nurses in Sudayer Area

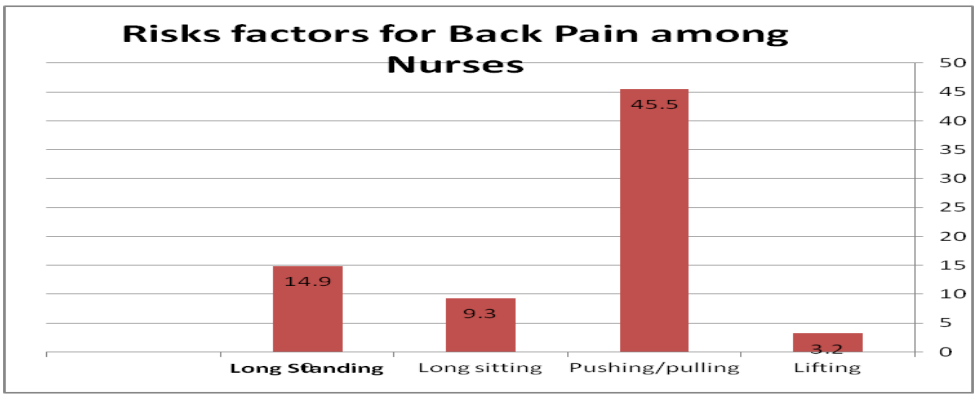

Table 2: Correlation between, age, workload, LBP severity & activity limitation

	LBP_Severiaty	Average_ Duration_of_Pain	Activity_ limitations	**Cost_of_LBP**	**Pain_Score**
Age_Group	.073	.397**	.310	.310	.261**
Total_Work_Period	.337**	.388	-.137	-.137	-.179
LBP_Severiaty	1	.339*	.332**	.332**	.400
Average_Duration_ of_ Pain	.339**	1*	.532	.532	.576*
Activity_limitations	.363**	.461	.589**	.589**	.594*
Cost_of_LBP	.532**	.589**	.483**	.483**	.567
Pain_Score	.576**	.594*	1**	1**	.526**

The result showed a positive relationship between the LBP severity and total working period by 0.337. The result showed a positive relationship between the activities limitation in pushing and patient handling and total working period 0.427. The result also showed a positive relationship between the LBP severity and activities limitation 0.363. The result showed a positive relationship between LBP severity and the cost of low back pain 0.532. The result showed a positive correlation between the average of duration of pain and the cost of low back pain by0.589. The result showed a positive correlation between the activities limitation and the cost of low back pain by 0.532.

The result showed a positive correlation between the pain score and the activities limitation by0.567. The result showed a positive relationship between the pain score and the cost of low back pain by0.526

Discussion

Low back pain has been studied in different places in the world. However, there is no study on LBPs among nurses in Saudi Arabia. This Study has shown that low back pain is particularly common in nurses who are in direct contact with patients care in wards. Low back pain prevalence among the study group was 61. % who complained of moderate and mild LBP for a period of a week or more. The results are in agreement with other studies [9, 10]. Reports from other populations have shown that nurses, nursing aides, and orderlies have the highest rates of LBP in the medical industry (Videman T, 1984). Even though, previous studies in many places in the world showed that prevalence was 29- 44.1 %,(Chiou WK,2003 & Yip YB, 2001). This high prevalence of LBP among nurses in Sudayr region may reflects the unawareness of body mechanics and lack of back muscles fitness

The high prevalence of LBP disorders among nurses In sudayr region may be related to factors like physical work demands In hospitals having shortage of qualified nurses, as well as to work organizational factors, of which scheduling is an important component (Hignett S, 1996 & Punnett L, Wegman DH, 2004). It is noticed that majority of study group are female (95%),as a result of shortage of male nurses in this working inwards, that may enforce them to do more physical work and may explain the high prevalence of LBP. Lamina and Hanif found in their study in 2009 that LBP was more prevalent among female nurses (67.5%) than the male nurses (32.5%).

LBP is the most common musculoskeletal disorder in adult and about 60-80% of all individuals will experience the condition at some stage in their lifetime. But it is noticed in this study that majority of the sample (62.94%) were with 1-5 years' experience and with age less than 30 years. In other studies showed that with experience, nurses learn how to protect their backs,

and by the time they become fit and make right decision about their abilities (Lamina Sikiru and Hanif Shmaila 2009). The results of this study enlighten the importance of teaching back care and expose nurses to the importance of good body mechanics.

Conclusion

The results indicate that an association exists between work stress, manual lifting and LBP prevalence. The main route for prevention of LBP among nurses is likely to lie in improved ergonomics and psychological health in their work place. Good posture and correct transferring techniques in ward situations should be reinforced with hands-on practice performed on nurses' common types of clients.

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