

ORIGINAL ARTICLE

The Prevalence of Low Back Pain among Nurses in Yazd, Southeast Iran

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ABSTRACT

Musculoskeletal disorders (WMSDs) are of serious concern to many organizations, including health care centres. Low back pain (LBP) with no clinical cause is common in nurses. This study aimed to assess the prevalence rate of LBP in nurses. This descriptive, cross-sectional study was carried out on a population of 351 nurses from educational hospitals of Yazd University of Medical Sciences; Yazd, Iran aged 20-45 years. Information on these potential risk factors for LBP was sought using a translated Nordic questionnaire. Two hundred sixty respondents (74.3%) reported experiencing pain at least in one of their nine body regions during last year. The highest prevalence of LBP was seen among nurses in orthopaedic surgery (80.6%), operation room (79.2%), neurology (75.3%) and general surgery (73.7%), emergency medicine (69.9%), paediatrics (59.2%), obstetrics and gynecology (54.3%), internal medicine (52.7.5%), intensive care unit (51%), ENT (50.4%), and infectious disease (48%) sections, respectively. These findings suggest that hospitals should focus and attempt to improve the ergonomics of nursing activities. In addition, effective methods of implementing changes in work systems are needed.

Keywords: *Low back pain, Prevalence, Nurses, Hospital, Musculoskeletal disorders, Iran*

INTRODUCTION

Work-related musculoskeletal disorders (WMSDs) are of serious concern to many organizations, including industry and health care workers in which account for over two-thirds of all occupational disorders. It is understood that low back pain with no clinical cause is common in nurses, but the aetiology of this pain is mainly unclear [1].

A focus on back pain among nurses is consistent with expectation of prevalence of symptoms among health care workers. It is reported that the 80% of individuals, at least once, experienced low back pain (LBP) in their lifetime [2]. The epidemiological studies provide evidence that the prevalence of LBP and

disability has increased and account for approximately 29-70% in nurses and other health care workers [3-16]. A study showed a 91% prevalence of work related low back pain among physiotherapist [17].

Low back pain is considered as the most common cause of limitation of activity in people less than 45 years old, however, with unknown cause in the majority of cases. It is also reported that nursing is the third leading occupation in the prevalence of LBP and injury [4]. Estimates of MSDs and in particular LBP prevalence in nurses vary widely among studies depending on the study participants, methodological differences and different term of LBP definition.

Since the first World Health Assembly in 1948 which occupational health term used in place of the older term industrial health, there has been increasing interest in occupational health issues relating to the musculoskeletal disorders. In Iran, recently, attention

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Table 1. Demographic items and some characteristics of nurses with prevalence for LBP (n=351)

Variable		No. (%)	Prevalence of LBP (%)
Gender	Men	48 (13.7)	76.6
	Women	303 (86.3)	71.9
Age (yr)	25-29	137 (39)	2.7
	30-39	154 (44)	16.1
	40-49	49 (14)	80.8
	>50	1 (3)	0.4

has been also focused on health care workers regarding to occupational health programme.

To determine the prevalence of LBP of nurses in educational hospital of Yazd Province, this survey was carried out.

MATERIALS AND METHODS

We conducted a descriptive cross sectional study in which 351 nurses were randomly selected from educational hospital of Yazd University of Medical Sciences, Yazd, Iran. Criteria for eligibility were that the nurses should be registered and worked at least one year in this hospital and were in full time employment.

Musculoskeletal symptoms were investigated using the valid and reliable translated Nordic questionnaire, used to record WRMDs in working populations [18]. Demographic data including information about age, sex, work history, ward section, place of work, duration of work and kind of work were also gathered. Data were collected using a self-completion questionnaire. Respondents were asked whether they had ever experienced pain which lasted for three day or longer at least in one of their nine body regions during last year. Nurses with a history of diseases affecting musculoskeletal system and those with MSDs due to trauma were excluded from the study.

The data were analysed using SPSS software applying *t*-student for quantitative variables. We considered differences significant at $p < 0.05$.

RESULTS

The study participants were generally female (86.3%) aged 30.44 ± 5.26 years (mean \pm SD). The average length of employment with current job title was 18.77 ± 6.79 years. Two hundred sixty respondents (74.3%) reported experiencing pain or discomfort at some time in the last year. The annual prevalence of LBP was 74.3% in which the highest prevalence was seen in age group of 40-49 years (80.8%) and work history of 15-25 years (82.3%). Middle age nurses reported more LBP symptoms than younger ones did ($p = .004$). The annual prevalence of LBP in men (76.6%) was higher than in women (71.9%) but no significance was observed (Table 1). The most serious work-related problem for participants was their neck (81.2%), followed by lower and upper back (63.8) and shoulder (54.1%).

The comparison of annual prevalence of LBP among nurses in different wards indicated that the prevalence of LBP in orthopaedic surgery (80.6%), operation room (79.2%), neurology (75.3%) and general surgery (73.7%), was consistently higher than other wards, followed by emergency medicine (69.9%), paediatrics (59.2%), obstetrics and gynecology (54.3%), internal medicine (52/7.5%), intensive care unit (51%), ENT (50.4%), and infectious disease (48%) sections, respectively.

Among those with reported LBP, 61.83% had experienced 1-14 days of LBP, and 37.17% had experienced at least 14 days of LBP in the previous 12 months. The reported LBP in cases with weight of more than 65 kg and BMI more than 25 kg/m^2 was higher with comparison of others. Our data also showed that self-reported LBP in nurses with housework and/or second job was higher than others who did only this work. Among those with LBP, 34% had no treatment at all, while 66% of cases with LBP had sought medical or other health professional advice. We found that 75.5% of nurses with LBP suffer from pain 2 hours after work and 23.5% during sleep. However, about 53.9% of nurses expressed that their back pain will be improved at rest.

DISCUSSION

The purpose of this study was to determine the annual prevalence of low back pain in 351 nurses working in educational hospital. A problem with these studies is that investigators used different definitions of back pain, different population sizes, setting, methods, and various confounding factors measured in each study and therefore limiting the opportunities for direct comparison. Because of this, the prevalence rate of LBP varied from 43.1% to 69.7% in previous studies [5, 7, 8, 16, 17, 19]. The prevalence rate of LBP in this study was 76.3% which is rather close to previous studies in different countries. Our results are in agreement with the results of Smith et al [16], and Maul et al [20], who reported 73-76% of LBP. However, our results showed higher prevalence of LBP than Yin bing (40.6%) [21], Shoko et al (54.7%) [7] and Engels et al (41%) [12, 22] which reported in previous investigations carried out in different countries.

The high rate of LBP may be related to several factors including young population, the lack of experience, and the lack of knowledge about handling

and lifting. Another important explanation for high LBP in this study might be that the majority of nurses do extra work in private hospitals or second job or leisure activities. Less attention to health care and life style in individuals are other possible explanation for this finding [1, 3, 5, 6, 15, 21, 23, 24].

The reason of higher rates of LBP in nurses in orthopaedic, paediatric, operation room, neurology and internal wards than those in other specialties is unclear, and might be that patients in those wards are dependent and need more help from nurses [19]. In addition, in orthopaedic, patients are unable to move and handling of them, therefore, cause more pressure on nurses and are more prone to LBP than others. Since the surgery duration is long, the cumulative effect of extra work can be accounted for high prevalence of LBP and, therefore it emphasis that they suffer a higher risk of LBP. Although hospitals in Yazd allow the patient's family to stay in the ward to take care of the patient themselves, but the possibility of family members to do this caring in other wards is high and it may be considered as one possible explanation for this discrepancy. The handling of physical loads by nurses seems to put them at risk for the occurrence of musculoskeletal disorders. Our study had some limitations. We had two separate groups of interviewer for male and female nurses which may have affected the results, although we first trained them and rechecked some of questionnaire to reduce this bias. Apart from physical stress, various aspects of work pressure may be associated with the occurrence of musculoskeletal complaints. Therefore, future research should focus on the ergonomic conditions of the ward, mental stress and job satisfaction. In addition, effective interventions are needed in work systems. These findings suggest that hospitals should focus and attempt to improve the ergonomics of nursing activities.

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