Original Article

Association of Musculoskeletal Disorders and Job Satisfaction Among Nurses Working in Hospitals of Lahore

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ARTICLE INFO

ABSTRACT

Musculoskeletal disorders are the most common work-related problems reported till today worldwide. This might be because nurses are engaged in activities that require continuous physical efforts and interaction with patients. Job satisfaction can be defined as how the employees feel about job and its attributes. Job satisfaction is one of the most important and common variables in work environment. **Objective:** To evaluate the association between musculoskeletal disorders and job satisfaction among nurses working in the hospitals of Lahore. **Methods:** This analytical cross-sectional study was conducted in Lahore. 194 subjects were enrolled. Nordic Musculoskeletal Questionnaire was used to assess musculoskeletal disorders. The Nursing Workplace Satisfaction Questionnaire was used to assess job satisfaction. The Data were analyzed using SPSS v20. Mean ± SD was calculated for numeric variables while chi square test was used find the association between musculoskeletal disorders and job satisfaction. Cut off value was used to make categories of satisfaction. **Results:** Chi- square test of independence showed no association among neck (0.475), shoulder (0.698), elbow (0.066), wrist/hand (0.857), upper back (0.076) and Low back pain (0.358), Knee pain (0.61), ankle/foot pain (0.329) and job satisfaction as p-value of each was > 0.05 but there was found to be slight positive association among hip/thigh pain and job satisfaction as P-value was 0.43 which is statistically significant. **Conclusions:** There was no association between musculoskeletal disorders and job satisfaction because there were some other factors that determined the job satisfaction. These factors may include low salary, work environment etc.

INTRODUCTION

The disruption in normal function of nerves, muscles, tendons and ligaments are taken under an umbrella term "The Musculoskeletal disorders (MSDs)" [1]. The musculoskeletal disorders that may increase due to prolonged standing at work places and interfere with the worker's capability to do prolonged work are as termed ad work-related musculoskeletal disorder (WMSD)[2]. These disorders are mostly seen common in the hospital staff members like in nurses that comprises about thirty-three percent of total staff. They are at greater risk and constitutes about sixty percent of work-related disorders [3, 4]. Studies showed that 23% of the European workers complain of muscles aches and 25% of back pain. WMSDs are also the main reason of leave absence in western European countries and in USA. Among the hospital nurses the musculoskeletal disorders are also the common cause of leave absence [1]. In many countries, the work-related injuries are commonly caused by musculoskeletal

disorders. The factors that contribute in musculoskeletal disorders are bad working posture, forceful movements, frequent twisting and lifting heavy weights [5]. Apart from these factors, a number of environmental , physical and psychosocial factors are also one of the major cause of work-related musculoskeletal injuries [6]. According to an Iranian study work-related musculoskeletal disorder is the second most common disease after the cardiovascular diseases. According to the World Health Organization the low back pain is the 2nd leading cause in restraining the people from working in USA. However, in European Countries the main cause of early retirement is also the LBP [7]. Moreover work-related musculoskeletal disorders are subdivided in to different groups, as those of upper extremity which include neck, shoulder, arm wrist and hand. And also, those of trunk and lower extremities. These MSK disorders in the region of head. Neck and low back are common among those healthcare professionals whose work include standing for hours, forward bending, lifting heavy patients, transferring and relocating patients [8, 9]. Job satisfaction can be describing as the way employees feel about the job and the different aspects of their jobs. The one of the most important variables in work is the job satisfaction. Many of the studies have reported that the job satisfaction can be affected by a number of the factors that include enough staff, pleasing working conditions, favorable circumstances for professional development, administration, possible rewards, awareness and relationship with other workers. Many studies have done that showed different ways how the healthcare workers feel about their job [10, 11]. Only a few number of studies have been done on job satisfaction in developing countries in health care professions. Many studies done in Africa have demonstrated that round about a half of the nurses and doctors have satisfaction about their job. In other developing countries such as Malaysia, China and India this job satisfaction proportion little higher. Factors that are involved in high level of job satisfaction include supportive work fellows, supportive work environment and decent rewards [12, 13]. Job satisfaction has been described as an emotional attitude for a job that comes from good and bad job experience. For nurses' job satisfaction is versatile and complicated. Lesser job satisfaction has been associated with high staff turnover, low confidence or self-esteem, less patient outcomes and high financial expenses [14]. Previous researches done on nurses have focused on musculoskeletal disorders and job satisfaction separately. There is no data available on the association of the musculoskeletal disorders and job satisfaction among nurses. The following study will be helpful in distinguishing the musculoskeletal disorders among nurses and will help them to prevent these job related musculoskeletal injuries

and provide a better quality of life at workplace.

METHODS

This analytical cross-sectional study was conducted after the approval from the ethical review board. Data were collected through convenient sampling technique from 194 female nurses working in the different hospitals of Lahore namely Government Teaching Hospital Shahdara Lahore, Jinnah Hospital Lahore, Iqra Medical Complex Lahore, Chaudhary Rehmat Ali Memorial Trust Hospital Lahore, Ittefaq Hospital Lahore. The sample size was calculated by using Epitool sample size calculator at 95% confidence interval. Nurses working at least 6 hours a day and having at least 1-year working experience were included in the study while those having musculoskeletal issue secondary to any systemic diseases or any other cause were excluded. All the demographic data and other major details of the nurses was collected. The data from all nurses was collected after taking informed consent. The procedure was explained to the participants. Standardized Nordic Musculoskeletal Questionnaire was used to assess musculoskeletal disorders while Nursing Workplace Satisfaction Questionnaire was used to assess job satisfaction among nurses. The lowest possible score was 17 and 85 was the highest possible score. The lowest the score denotes the highest level of job satisfaction among nurses. The Data were analyzed using SPSS version 20.0. Mean ± SD was calculated for numeric variables while chi square test was used find the association between musculoskeletal disorders and job satisfaction. Cut off value was used to make categories of satisfaction.

RESULTS

The mean age of the nurses was 25.92 with standard deviation of ±5.90. The maximum age of the nurses was up to 56 years while minimum age was found to be 20 years. Out of 194 participants, 137 (70.6%) had experience less than 5 years. Least number of nurses [n=15 (7.7%)] had experience of more than 10 years. About 93 (47.9%) nurses worked for 6-8 hours per day. 56 (28.9%) nurses worked more than 8 hours per day while only 45 (23.3%) of the nurses worked for more than 10 hours per day (Table 1).

Variables		Frequency (%)
Years of experience	1-5	137 (70.6%)
	6-10	42 (21.6%)
	>10	15 (7.7%)
Duty hours per day	6-8	93 (47.9%)
	8-10	56 (28.9%)
	>10	45 (23.2%)

Table 1: Frequency of total years of experience and duty hours per day

The major area of pain as reported by 130 (67%) nurses was low back in the last 1 year as well as in last 7 days the

frequency of which was 45 (23.3%) which was followed by the shoulder region (40.7% & 21.6%) and neck region (38.1% & 21.1%) for both the time duration i.e., last 12 months and in past 7 days (Table 2).

Region	Frequencies of pain/ trouble in Last 01 year		Frequencies of pain/ trouble in Last 07 Days	
	Yes n (%)	No n (%)	Yes n (%)	No n (%)
Neck	74 (38.1)	120 (61.9)	41 (21.1)	153 (78.9)
Shoulder	79 (40.)	115 (59.3)	42 (21.6)	152 (78.4)
Upper back	73 (37.6)	121 (62.4)	35 (18.0)	159 (82.0)
Elbow	64 (33)	130 (37)	33 (17.0)	161 (83.0)
Wrist/Hand	66 (34)	128 (66)	27 (13.9)	167 (86.1)
Lower back	130 (67.0)	34 (33.0)	45 (23.2)	149 (76.8)
Hip/Thighs	38 (19.6)	156 (80.4)	21 (10.8)	173 (89.2)
Knees	50 (25.8)	144 (74.2)	13 (6.7)	181 (93.3)
Ankle/feet	67 (34.5)	127 (65.5)	25 (12.9)	169 (87.1)

Table 2: Region wise frequencies of pain/trouble/ache in Last 12 Months Versus in last 7days

The means Job satisfaction score on Nursing Workplace Satisfaction Questionnaire was 36.15 (SD=8.25), the minimum score obtained was 17 while maximum score was 57 (Table 3).

Job satisfaction score	Mean ± SD	Minimum	Maximum
	36.15±8.25	17.00	57.00

Table 3: Total Mean Score of Job Satisfaction

Chi- square test of independence showed no association among neck (0.475), shoulder (0.698), elbow (0.066), wrist/hand (0.857), upper back (0.076) and Low back pain (0.358), Knee pain (0.61), ankle/foot pain (0.329) and job satisfaction as p-value of each was > 0.05 but there was found to be slight positive association among hip/thigh pain and job satisfaction as p-value was 0.43 which is statistically significant. The following results showed that job satisfaction was majorly related to some factors other than musculoskeletal disorders (Table 4).

Region		Job satisfaction		Total	p-value
		Satisfied	Dissatisfied		
Neck pain	No	93	27	120	.475
	yes	54	20	74	
Shoulder pain	No	86	29	115	.698
	yes	61	18	79	
Elbow pain	No	97	24	121	.066
	yes	50	23	73	
Wrist/hand pain	No	98	32	130	.857
	yes	49	15	64	
Upper back pain	No	102	26	128	.076
	yes	45	21	66	
Lower back pain	No	70	26	96	.358
	yes	77	21	98	
Hip/thigh pain	No	123	33	156	.043
	yes	24	14	38	
Knee pain	No	114	30	144	.061
	yes	33	17	50	
Ankle/foot pain	No	99	28	127	.329
	yes	48	19	67	

Table 4: Association of neck, shoulder, elbow, wrist/hand, upper back, Low back pain hip/thigh, knee and ankle/foot pain and job satisfaction

D I S C U S S I O N

The current study perhaps was the first study conducted in Lahore, Pakistan regarding the association of musculoskeletal association and job satisfaction among nurses working in hospitals of Lahore. This study confirmed that there is slight association of hip/thigh pain and job satisfaction among nurses. So, alternate hypothesis was proved. Punch, in 2020 conducted a study about the prevalence of work-related musculoskeletal disorders among nurses in Guyana. The results of the study showed that the Low back (72%) was most commonly reported region by nurses preceded by neck pain (49.1%) and shoulder pain (37.7%) in both the time duration as last 1 year and 7 days [15]. The results are consistent with the current study where most common region of pain was also low back but the second most common region reported was shoulder pain followed by neck pain. Relationship between work-related musculoskeletal disorder and workload with job satisfaction among nurses working in emergency department was analyzed by Bazazan et al., in 2019. They found a positive association among work load, job satisfaction level and work-related musculoskeletal disorders. As per results of this study 73% of the nurses reported knee pain in last 12 months, while 70% nurses reported upper back pain and 66% reported lower back pain. 38.4% nurses had low job satisfaction level while 51.9% showed moderated satisfaction level of job. There was significant association of job satisfaction with pain symptoms of wrists/hands, upper back, hip/thigh, knees and ankle/feet having P-value of 0.001, 0.002, 0.03, 0.001 and 0.004 respectively [16]. In 2019 a cross-sectional stud was conducted by Alnaami et al., on the prevalence of low back pain among health care professionals in Saudi Arabia. In which the highest prevalence was found among dentists (88.9) preceded by paramedics (74.5), physicians (73.2) and nurses (72.9). The major risk factors as reported were belonging to medical health care professional, increased BMI and repetitive bending and twisting movements. Hence the study concluded that low back pain is prevalent in health care professionals including nurses [17]. While the in the current study the most reported region of pain was also Lower back.   The evidence of MSD among nurses was supported by another study conducted by Arsalani et al., The participants reported musculoskeletal disorders in different regions of body. This study concluded the high prevalence of musculoskeletal disorders. Neck, shoulder and lower back were the most common regions for

disorders as reported by this study [18]. Asghar et al., in 2016 carried out a study on musculoskeletal disorders among nurses in Lahore and concluded that nurses had high level of MSD's due to nature of profession. This study found that the most reported region was the low back pain (49.7%) that was due to heavy patient lifting, bending and twisting. Pain in upper back, neck and shoulder region were also frequently reported. This study also concluded significant association with job demands [19]. The results of the current study were in consistent with the study conducted in India in 2013 on the musculoskeletal disorders among nurses the results showed that the major area of reported pain was lower back pain (48.2%) preceded by shoulder (34.6%), neck (33.1%) and knee pain (29%) [3]. while the results of current study also showed that low back pain was most frequent complains of nurses (67%) while the second most common pain region was shoulder (40.7%) followed by pain in neck region (38.1%). Shah et al., in 2018 conducted a study to assess the determinants of job satisfaction among nurses. For this purpose, they collected data from three South Asian countries namely Pakistan, India and Sri Lanka. They concluded that there was a significant association among job satisfaction and employer authorization and the remuneration hey receive for their work [13]. Correlativity between WMSD and working environment, QOL and social support was analyzed by Yan et al., in 2018. The prevalence of WMSD among nurses was 79.52% and the most common reported area of pain was similar to as that of current study i.e. low back (64.83%) followed by region of neck (61.83%) and shoulders (52.36%). As reported by the nurses WMSDs also affected their quality of life, social support and increased absenteeism from work [20]. Nguyen et al., (2016), studied the factors which were associated with the job satisfaction among the health workers in North Vietnam, he concluded that the health care workers were less satisfied with their job. The main causes of their dissatisfaction were low salary, relationship with supervisor and work environment [12]. Curtis and Glacken, conducted a study on job satisfaction among public health care nurses. The result of this study showed the job satisfaction at low levels among nurses. The study also reported that the nurses having low satisfaction level also have low levels of self-esteem and high level of depression and anxiety [21]. Khamlub et al., in 2013, conducted a study on job satisfaction in Vientiane Capital and found that health care workers were satisfied with their job except for salary. The result showed that the job satisfaction was correlate with relations with the staff members and structure of organization [10]. In contrast to the above mentioned studies there are no findings that relate to the present study. Present study is also different from other studies in a way that we determine the association of the musculoskeletal disorders and job satisfaction among nurses and such comparative study is not carried up till now. The slightly existing association is clinically important in a way to reduce the MSDs among nurses and to improve their quality of life.

CONCLUSIONS

There is no significant association between musculoskeletal disorders and job satisfaction among nurses. Only slight positive association was found among hip/thigh pain and Job satisfaction. Job satisfaction level of individual cannot be assessed by musculoskeletal disorders however there are some other factors that affect the job satisfaction level which include low salary, management behavior, work environment and some other factors.

Conflicts of Interest

The authors declare no conflict of interest.

Source of Funding

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