



Relationship between General Health and Musculoskeletal Discomfort along with Psychosomatic Complaints in Nurses

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Abstract

Background: Workplace problems can lead to psychosomatic complaints. We aimed to assess the relationship between general health and occurrence of musculoskeletal disorders along with psychosomatic complaints.

Methods: This was a cross-sectional study. This research was conducted about the nurses who worked at the hospitals located in the northwest of Tebran, Iran (Valiasr, Farhikhtegan, and Khatam), and participated in this study from Aug 2019 to Feb 2020. The data were collected by the demographic and clinical information questionnaire. Goldberg's general health questionnaire and psychosomatic complaint scale were completed by nurses.

Results: In total, 158 nurses participated in this study. There was a significant relationship between the score of the general health questionnaire (GHQ) and psychosomatic complaints in three categories (low, moderate, and high) ($P \leq 0.0001$). There was a significant relationship between the mean score of GHQ and musculoskeletal discomfort in the neck, shoulder, forearm, hand and wrist, upper/lower back, knee, and ankle ($P \leq 0.0001$).

Conclusion: Continuity of psychosomatic complaints may be a risk factor for mental health in nurses and may affect the quality of care. Hence, health policymakers and hospital managers should consider it in service training for nurses.

Keywords: Psychosomatic; Health; Nurses

Introduction

Nursing is one of the jobs that require significant physical activities; therefore, nurses may experience physical disorders and pain (1). The possibility of damage and pain among nurses is very high due to the sudden twisting and bending of the

lumbar spine when moving patients is very high (2). However, musculoskeletal discomfort may also be associated with individual factors, different physical activities in the workplace, and psychosocial factors (3, 4). In Norway, lack of support for



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managers and lack of calm atmosphere in the workplace was the most effective factors for back pain (5).

Musculoskeletal disorders may cause a wide range of chronic complications, including general health disorders and psychological distress (6). On the other hand, undiagnosed psychological disorders are the major cause of yield loss and absenteeism from work. These factors may cause a physical complaint without a physical problem (6, 7).

There is a complete list of symptoms such as pain, shortness of breath, palpitations, numbness, and gastrointestinal problems that have no particular affinity for a particular medical specialty and come from mental problems (8). Hence, there is an inter-relationship between physical and mental health; therefore, workplace problems can lead to psychosomatic complaints (9). Even when physical activity was reduced, there was a musculoskeletal complaint or the pain was greater than before (10). Therefore, it is hypothesized that the cause of musculoskeletal complaints is unknown and related to mental health status (11).

Physical complaints should be evaluated as confounding factors in the study of occupational risk factors for musculoskeletal disorders (12).

Few studies (13-15) have assessed the general health, musculoskeletal pain, and psychosomatic complaints among nurses in Iran. Considering the importance of this issue, we aimed to assess the relationship between general health and the occurrence of musculoskeletal disorders as well as psychosomatic complaints.

Methods

This was a cross-sectional study.

Participants

The nurses who worked at the hospitals located in the northwest of Tehran, Iran participated in this study. Clustered sampling method was used in the study. In this way, we compiled a list of all the hospitals in the northwest of Tehran and, then, randomly selected three hospitals (Valiasr, Farhi-

khtegan, and Khatam) from among them and distributed the questionnaires among the nurses until the desired sample size was obtained. Inclusion criteria were having more than 18 yr of age; having work experience of at least one year; and having no history of surgery in the joints. Exclusion criteria were being pregnant and having accident in the past year.

Data collection

This research was conducted from Aug 2019 to Feb 2020 and the data were collected using three questionnaires. The demographic and clinical information questionnaire included questions about age, sex, marital status, resident section, location of residence, economic status, hours of work in a month, overtime hours worked per month, and work experience. Furthermore, the nurses were asked questions about feeling pain or discomfort in the past 12 months in each joint along with a pain score ranging from 1 to 10 (the visual pain ruler).

The second questionnaire was Goldberg's general health questionnaire, which is one of the best-known mental disorder screening tools available in 12-, 28-, 30-, and 60-question forms. In this study, the 28-question form was used, which included four subscales, each containing 7 questions. Questions 1-7 were related to the scale of physical symptoms and the general health status. Questions 8-14 were related to anxiety; questions 15 to 21 were about the scale of social dysfunction, and questions 22-28 were related to depression. The scoring method was the Likert method, in which the options were scored from 0 to 3. The maximum score for this method in the questionnaire was 84. The higher the score, the higher the mental health index would be (16, 17).

The psychosomatic complaint scale was developed and validated in Japan by Takata and Sakata in 2004. It consisted of 2 questions and a single-factor structure used to measure psychosomatic complaints. The score for the "Never", "Rarely", "Sometimes", and "Frequently" options were 0, 1, 2, and 3, respectively. The minimum possible score was 0 and the maximum score was 90. A

score between 0 and 30 indicated that psychosomatic complaints were low. A score between 30 and 45 indicated that psychosomatic complaints were moderate. A score of more than 45 indicated that psychosomatic complaints were high (18).

Data analysis

Analysis of variance (ANOVA) was used for evaluating the variation among the groups. Moreover, *t*-test was used for comparing the means of the two groups, the mean score of general health, and having a musculoskeletal disorder or not in various joints. Pearson's correlation coefficient was employed to measure the strength of the linear association between the two means of the variables.

Ethical consideration

Permission was obtained from Institutional Review Board (IRB) of the three selected hospitals in the northwest of Tehran and, then, the questionnaires were distributed and filled out by the nurses. Confidentiality of the nurses' information and informed consent were considered in this study.

Results

Overall, 158 nurses with the mean age of 36.73 yr participated in this study. All the participants had a Bachelor's degree in nursing. The baseline characteristics of the eligible nurses are summarized in Table 1.

Table 1: Baseline characteristics of nurses

<i>Variable</i>	<i>N (%)</i>	<i>Mean(SD)</i>	<i>(Min- Max)</i>
Age(yr)		36.73(7.55)	22-53
20-30	44(27.8)		
31-40	65(41.1)		
41-50	47(29.7)		
51≤	2(1.3)		
Sex			
Women	64(40.5)		
Men	94 (59.5)		
Marital status			
Single	55(34.8)		
Married	95(60.1)		
Divorced	7(4.5)		
Widow	1(0.6)		
Resident section			
ICU	24(15.2)		
CCU	33(20.9)		
Operating room	21(13.3)		
Internal section	29(18.4)		
Surgery section	17(10.8)		
Clinic	18(11.4)		
Other	16(10.1)		
Location of living			
North of Tehran	29(18.4)		
South of Tehran	44(27.8)		
East of Tehran	40(25.3)		
West of Tehran	45(28.5)		
Economic status			
Good	105(66.4)		
Moderate	53(33.5)		
Hours of work in a month		179.24(9.91)	130-232
Hours of extra work in a month			
No	74(46.8)		
Yes	84 (53.2)	69.76(58.63)	20-192
Work experience (year)		12.07(7.61)	27-Jan
Total	158(100)		

Most of the participants were married men who were working in CCU. Most of them were living in the west of Tehran and had a good financial status. About 38.6% of them had pain in their back. About 57% of the nurses had moderate psychosomatic complaints and their physical health score was moderate.

The scores of psychosomatic complaints in nurses are presented in Table 2 and the mean score of the general health questionnaire (GHQ) in each dimension is presented in Table 3.

Table 2: Ranking score psychosomatic complaints among nurses

<i>Psychoso- matic com- plain</i>	<i>N (%)</i>
Low	24 (15.2)
Moderate	90 (57)
High	44 (27.8)
Total	158 (100)

Table 3: Mean score of GHQ in each dimension

<i>Dimension of general health</i>	<i>Mean (SD)</i>
Physical symptoms and general health status	12.51(4.52)
Anxiety	10.87(4.77)
Social dysfunction	14.34(2.70)
Depression	8.55(3.13)
Total	46.29(13.04)

Moreover, the statistical test showed a relationship between the score of GHQ and psychosomatic complaints in three categories (low, moderate, and high) ($P \leq 0.0001$).

Furthermore, evaluation of the association between the mean score of general health and the mean score of pain in each joint are presented in Table 4. In this table, the number of participants who responded negatively to having skeletal disorders in different parts of the body is greater than the number of participants who responded posi-

tively. This means that the participants who reported fewer problems had a higher score of general health. Statistical tests were significant in all the areas of the body, except the thigh.

Table 4: Relationship between mean score of general health and musculoskeletal discomfort

<i>Mean score of General health</i>	<i>Mean (SD)</i>	<i>Statistical Test</i>
Musculoskeletal discomfort	46.29(13.04)	
Neck		$P \leq 0.0001^*$
Yes	48 (30.4)	$P \leq 0.0001^*$
No	110(69.6)	
Score of Pain	1.75(2.96)	
Shoulder		$P \leq 0.0001^*$
Yes	46 (29.1)	$P \leq 0.0001^*$
No	112 (69.9)	
Score of Pain	1.59 (2.83)	
Forearm		$P \leq 0.0001^*$
Yes	21 (13.3)	$P \leq 0.0001^*$
No	137(86.7)	
Score of Pain	0.92 (2.23)	
Hands and wrists		$P = 0.002^*$
Yes	24 (15.2)	$P \leq 0.0001^*$
No	134 (84.8)	
Score of Pain	0.15(0.36)	
Back (upper)		$P \leq 0.001^*$
Yes	61 (38.6)	$P = 0.002^*$
No	97 (61.4)	
Score of Pain	2.17 (3.05)	
Waist (lower)		$P = 0.001^*$
Yes	47(29.7)	$P \leq 0.0001^*$
No	111(70.3)	
Score of Pain	1.54 (2.50)	
Thigh		$P = 0.126$
Yes	18 (11.4)	$P \leq 0.0001^*$
No	140 (88.6)	
Score of Pain	0.77 (2.28)	
Knee		$P = 0.001^*$
Yes	40 (25.3)	$P = 0.002^*$
No	118(74.7)	
Score of Pain	1.51 (2.91)	
Ankle		$P = 0.001^*$
Yes	21 (13.90)	$P = 0.032^*$
No	136 (86.10)	
Score of Pain	0.34 (1.74)	
Total	158(100)	

*There was significant relationship statistically

Discussion

More than half of the nurses complained of moderate psychosomatic symptoms. General health status in nurses was moderate and had a relationship with psychosomatic symptoms. In addition, general health had a relationship with musculoskeletal discomfort and the score of pain reported by the nurses.

In this study, the nurses complained of moderate psychosomatic symptoms. Nursing students experienced moderate psychosomatic symptoms (19). This finding was similar to that of the present study, except that the study population was comprised of students. In addition, stressful working conditions had a relationship with psychosomatic symptoms in nurses (20). A stressful environment may be an unconsidered risk factor in the present study.

General health status in nurses was moderate and had a relationship with psychosomatic symptoms. The score of psychosomatic symptoms was associated with the general health score (18). This finding was similar to the results of the present study. However, the population examined in another was comprised of adolescents (18).

The general health score in the nurses had a significant relationship with musculoskeletal discomfort and the score of pain reported by nurses. In the present study, most of the nurses complained of back pain and the score of the pain had a relationship with the mean score of general health. The perceived moderate general health in dentists was a significant factor for chronic musculoskeletal complaints (21). However, the study population was different from that of the present study. A study indicated that nurses had a high risk of developing musculoskeletal complaints in the neck, shoulders, and lower back and it had a relationship with the general health score (22). These results were similar to the results of the present study.

Limitation

One of the limitations of this study was the cross-sectional design. It was not possible to follow the nurses for assessing musculoskeletal pain during work and the hospital chiefs were not allowed.

Conclusion

Continuity of psychosomatic complaints may be a risk factor for mental health in nurses and may affect the quality of care. Ergonomic interventions may have an impact on the prevention of musculoskeletal complaints. Health policymakers and hospital managers should consider environmental stressors and personal characteristics in service training for nurses.

Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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Conflict of interests

The authors declare that they have no conflicts of interests.

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