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Investigating the Relationship Between Skeletal-Muscular Pains and Quality of Life among Nursing and Midwifery Students

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ABSTRACT

Aims: Quality of Life (QOL)is a basic and pervasive term for the quality of the various domains in human life. The purpose of this study was to investigate the effect of skeletal-muscular pains on the quality of life in nursing and midwifery students.

Method and Instruments: This cross-sectional study was done in 120 nursing and midwifery students of Tehran University of Medical sciences (TUMS) aged between 18-22 years old. The students were selected by simple random sampling. They standard Nordic pain questionnaire and WHO-quality of life scales were applied to collect data. Mean / standard Deviation (SD) and T test were used to analyze data through SPSS-25 software.

Findings: The findings of tis study showed that midwifery students were better than nursing students in social health and environmental health, but in other quality of life dimensions, both students were almost similar (P>0.05). Moreover, the rate of musculoskeletal pain in nursing and midwifery students was almost the same. There was no significant difference between students` quality of life dimensions based on having or not having musculoskeletal pain (P>0.05).

Conclusion: To conclude, it seems that Skeletal-muscular pains do not have a significant effect on students' quality of life due to their youth.

Keywords: Musculoskeletal Pain, Quality of Life, Nursing and Midwifery students.

Introduction

Quality of Life (QOL) is a multidimensional concept that defines a standard level for emotional, physical, material and social well-being. It is an expected standard level that includes the expectations of an individual or society for a good life [1]. These expectations are guided by the values, goals and socio-cultural context in which an individual live. QOL is a subjective concept that depends on our minds [2]. Quality of life has always been considered as a final consequence in clinical trials, interventions and health care [3]. Quality of life is the perception that a person has of her situation according to the cultural and value systems, goals, expectations and textual criteria in which she lives [4]. Quality of life includes various dimensions such as physical health, pain, mental health, social performance and sexual performance [5]. QOL has been proposed by researchers and psychologists to focus on the origins of mental health, as well as the movement beyond diseases and disorders, and its aim is to discover and promote factors that allow individuals and societies to grow and flourish [6]. Many studies have examined the quality of life of students with different goals. For example, in a study among nursing and midwifery students in Islamic Azad university, researchers found that among the four dimensions of QOL, the highest score was related to physical health and the lowest score was related to environmental health [7]. In another study, results showed that there was no significant relationship between pain severity and mental

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constraint in assessing the dimensions of quality of life of female students with Chronic Low Back Pain (CLBP) [8].

The increasing spread of technology and knowledge in human life has increased the speed of work and increased production and productivity. But these changes have been associated with complications such as inactivity, fatigue, stress, and increased musculoskeletal disorders [9]. Skeletal-muscular disorders refer to damage of muscles, tendons, ligaments, cartilage, joints and nerves that consequently coauses as symptoms appear as pain, discomfort, and numbness in the body organs [10]. Skeletal-muscular disorders in young people occur mostly in the lower back, neck, upper body organs, and in some cases in the lower body organs, causing significant pain and discomfort with disability and hospitalization [11].

According previous study students` skeletal-muscular disorders is mainly as foot pain that in nursing students was higher than midwifery students [12]. A study showed that prevalence of skeletal-muscular disorders is higher among students using portable computer . Furthermore, this study found that upper arm, right neck, right hip and lower extremities have most pain [13]. Nursing and midwifery students are prone to long-term skeletal-muscular disorders due to poor posture, bending, frequent carrying of equipment, and frequent rotation while performing work [14]. Some studies have examined the effect of ergonomic interventions on the condition of a specific area of the body. For example, one study found that factors associated with skeletal-muscular disorders in adolescents and how they sat in the classroom had a significant effect on neck and shoulder pain [15].

In recent years, interest in assessing and improving the quality of life of people with chronic diseases has increased dramatically. Moreover, improving the daily functioning and quality of life of people with chronic diseases has become a goal. There is an interrelationship between disease and quality of life, and physical disorders and physical symptoms have a direct effect on all aspects of quality of life [16]. This has been shown by various studies. On the other hand, quality of life is an important indicator of tolerance to skeletal-muscular disorders. For example, the previous study has shown that the prevalence of skeletal-muscular disorders in nurses is relatively high and in most nurses the average quality of life was observed [17]. In another study, Matarello (2008) showed in hospital nurses, musculoskeletal disorders effected on their quality of life [18]. In Iran and abroad, studies in this field have often been conducted on various non-student samples and researchers have not found a link between these disorders in two groups of nursing and midwifery students and their impact on quality of life. Therefore, according to these reasons, the purpose of this study was to investigate the relationship between skeletal- muscular pain and quality of life among nursing and midwifery students.

Method and Instruments

The method of this research was as cross-sectional study by which 120 nursing and midwifery students of Tehran University of Medical Sciences (TUMS) in age range between 18 and 22 years Were studied. The statistical population of this study was selected through simple randomly selection according to Morgan's table.

In this study tow instruments were used. The first one was World Health Organization - Quality of Life (WHO - QOL) scale (brief form). This questionnaire was developed by the World Health Organization (WHO) in 1999. In this scale there are 26 questions for the quality of life and two general questions.

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This questionnaire deals with four dimensions of people's quality of life which are as following: 1- physical health, 2- mental health, 3- environment health and 4- Social health. For each dimension, a score from 1 to 5 is considered. Therefore, the scores of physical health dimension are between 7 and 35, the score of mental health dimension is between 6 and 30, social relationship dimension is between 2 and 10, and finally the living environment dimension is scored between 8 and 40. This questionnaire has been translated into Persian by Nasiri and others. Nasiri (2006) used the simultaneous validity method to determine the validity of this questionnaire. The relationship between the total score of the test and the score of the subjects in the subscales of the present questionnaire was measured by the total score and the subscales of the general health questionnaire through the correlation coefficient [19].

The 2end questionnaire was Standard Nordic pain questionnaire**.** This questionnaire was used to measure the prevalence of pain. Musculoskeletal disorders related to shoulder, arm and hand among nursing and midwifery students were assessed by using standard Nordic questionnaire. This questionnaire was developed in 1987 by L. Rockin Rook and his colleagues at the institute of occupational health in the Nordic countries (Scandinavian countries). In Iran, its validity and reliability have been obtained by Azeri and Davoodian. This questionnaire has 46 items. Includes 9 demographic questions from question 1 to question 9 such as age, height, weight, degree, level of education, cigarette and tobacco use, dominant students (right or left), marital status, personel status (personal home use), a history of an accident or heart disease, doing heavy activity. The other 9 questions from question 10 to question 18 are about the amount of pain, burning and discomfort in different parts of the body that indicates pain in different areas of the body such as the left and right parts of the body over the past week or 12 months. There are 8 individual questions about skeletal disorders (from questions 19 to 26) and 12 questions about physical needs questions from 27 to 38 and 8 questions about occupational psychological needs (questions from 39 to 46). This questionnaire has content validity and its reliability with Cronbach's alpha coefficient is 0.70. Therefore, it has good validity and reliability.

Data analysis: Data were analyzed by using SPSS 25. To test the hypotheses, in addition to descriptive statistics such as mean and standard deviation, T test was used. Data were analyzed by SPSS-25 software. After informing the participants of the purpose of the study and obtaining their cooperation, they signed an ethical consent form.

Findings

In this study 120 nursing and midwifery students were studied. Sixty seven students (55.8%) were studying in nursing major and 52 students (44.2%) were studying in midwifery major. Of all students 82 students (68.3%) were female and 38 students (31.7%) were male (Table 1).

Moreover, the mean and standard deviation of nursing and midwifery students' quality of life subscales were compared with each other. In order to compare the mean of students` quality of life, the Levene variance equality test and the independent T-test were used. The results showed that in quality of life dimensions (social health and environmental health), the difference was statistically significant ($P < 0.01$). In other words, the rate of social health and environmental health of midwifery students is better than that of nursing students, and in other dimensions the quality of life is almost similar (Tables 2 & 3).

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Based on the findings, 47 (71.6%) nursing students and 37 (69.8%) midwifery students had at least one musculoskeletal pain in the past 12 months. The results of the Chi-square test showed that the difference in skeletal-muscular pain of nursing and midwifery students was not statistically significant (P <0.05). In other words, the rate of musculoskeletal pain in nursing and midwifery students was almost similar (Table 4).

Moreover, comparison of mean quality of life dimensions showed that there was no significant difference between students in terms of quality of life dimensions based on having or not having musculoskeletal pain (P <0.05). In another word, skeletal-muscular pains have no effect on students' quality of life (Table 5).

Discussion

The purpose of this study was to investigate the effect of skeletal- muscular pain on the quality of life of nursing and midwifery students. Accordingly, the findings show that in quality of life dimensions, social health and environmental health are significant. In other words, the rate of social health and environmental health of midwifery students is better than nursing students, but they are similar in other quality of life dimensions. This finding is consistent with the study of Nasiry Zarrin Ghobaei et al [17] that the average of quality of life was observed in most nurses. Furthermore, this finding is consistent with the study of Matarello [18] who found skeletal- muscular disorders affect the quality of life of hospital caregivers. Therefore, the evidence is sufficient for this assumption. Nursing students are one of the most important members of the health care team and are subsequently subjected to various stressful situations as mental, environmental and social stress, which can be attributed to the compression of homework, in-study and work plans during the day. Undergraduate nursing students are required to monitor several assignments at the same time, which can lead to a lack of attention to safety during study and work due to repetition in consecutive days, resulting in some reduction in quality of life or even their reluctance to do everyday things like exercise.

Another finding of this study indicated that there was no difference in the skeletal-muscular pain of nursing and midwifery students. In other words, the rate of skeletal-muscular pain in nursing and midwifery students was almost the same. This result is consistent with the study of Shukri et al. [13] that reported the prevalence of musculoskeletal disorders caused by repetitive movements is seen in various organs of students' bodies . Moreover, this finding is in the line of Kabledu study [14] who found that both nursing and midwifery students were almost at risk for skeletal-muscular disorders in the long term due to poor physical condition. Therefore, the

Table 1) Frequency distribution and percentage of students with musculoskeletal pain by field of study and gender

		Field of study		Total
		Midwifery N (%)	Nursing N (%)	N (%)
Field of study		67(55.8)	53(44.2)	120(100)
Gender	Female	29(43.3)	53(100)	82(68.3)
	Male	38(56.7)	0(0)	38(31.7)

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Table 2) Mean and standard deviation of students' quality of life by field of study

	Field of study					
	Nursing		Midwifery		Total	
	Mean	SD*	Mean	SD	Mean	SD
Physical health	20.46	4.19	21.49	4.23	20.92	4.22
Mental health	20.12	3.40	19.26	3.75	19.74	3.57
Social health	9.64	2.99	11.15	2.47	10.31	2.86
Environmental health	26.19	6.40	28.34	5.26	27.14	6.00
Total	7.19	1.74	7.38	1.93	7.28	1.82

*** Standard Diviation**

Table 3) Comparing students' quality of life dimensions by field of study

Dimensions of quality of life	Levene's Test		t-test for Equality of Means						
	F	Sig.	t	df	Sig.	Mean Difference	Std. Error Difference	95% Confidence Lower	95% Confidence Upper
Physical health	.077	.782	-1.329	118	.187	-1.028	.774	-2.560	.504
Mental health	.455	.501	1.309	118	.193	.855	.654	-.439	2.149
Social health	2.032	.157	-2.962	118	.004**	-1.509	.509	-2.518	-.500
Environmental health	.535	.466	-1.980	118	.041*	-2.146	1.089	-4.302	.011
Total	.003	.954	-.545	118	.587	-.183	.336	-.849	.483

Sig < 0/05 (*) & Sig <0/01(**)

Table 4) Frequency distribution and percentage of students with musculoskeletal pain by field of study

Having Musculoskeletal Pain	Field of study		Total N (%)	x^2. Value	Df	P. Value
	Nursing N (%)	Midwifery N (%)				
NO	19 (29.2)	16 (30.2)	35 (29.2)	0.048	1	0.827
Yes	48 (71.6)	37 (69.8)	85 (70.8)			

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Table 5) Comparison of quality of life dimensions based on having or not having skeletal-muscular pains

Dimensions of quality of life	Having Pain	Mean	SD	t	df	Sig.
Physical health	No	20.29	3.793	-1.051	118	.295
	Yes	21.18	4.381			
Mental health	No	20.37	3.126	1.244	118	.216
	Yes	19.48	3.718			
Social health	No	10.51	2.874	.505	118	.615
	Yes	10.22	2.868			
Environmental health	No	27.91	5.266	.905	118	.367
	Yes	26.82		6.274		
Total	No	7.51	1.669	.905	118	.367
	Yes	7.18	1.885			

evidence is sufficient for this assumption. The rate of skeletal-muscular pain in students (with and without heavy activity) was almost the same in both nursing and midwifery. Due to their young age and lack of physical activity, the students who were studied in this research did not suffer from a sever specific disease or a history of accident affecting skeletal-muscular pain.

Another finding of this study showed that there was no significant difference between students in terms of quality of life in terms of having or not having musculoskeletal pain. In other words, skeletal-muscular pain has no effect on students' quality of life. This result is consistent with the study of Makvandi & Zamani (7) that revealed among the four dimensions of quality of life, the highest score was related to the physical health dimension and the lowest score was related to the mental health dimension of nursing and midwifery students . Also in supporting this finding, Gorji Baziari (8) reported that there was a significant relationship between the quality of life dimensions, the severity of pain and the dimension of students' mental limitations. Therefore, the evidence is sufficient for this assumption. Resident in the dormitory room, socio-economic status, positive attitude of the people around, having job security in the future, expressing life satisfaction, mental health, feeling satisfied with communicating with others, resilience, feeling satisfied with communicating with patients during the project, feeling satisfaction with the university campus, not having a serious health problem, and so on are important factors that may be related to the quality of life of nursing and midwifery students. Factors that may not be related to the possible dimensions of quality of life with musculoskeletal pain include the

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youthfulness of the study sample, low stress on novice students, and their lack of serious employment in specialized work.

This study is not without limitations, including that the variables have not been investigated in larger samples with different and non-student characteristics. Therefore, it is recommended that future studies provide a more comprehensive study with a higher sample size and non-students in order to reduce the pain associated with musculoskeletal disorders by identifying other factors affecting on quality of life. Finally, by using corrective interventions , teaching quality of life and its dimensions among students, it guarantees the health of the these group of students in the future.

Conclusion

To conclude, it seems that; in the subscales of social health and environmental health, the quality of life of midwifery students is better than nursing students and two groups are similar in other quality of life dimensions. Moreover, rate of musculoskeletal pain in nursing and midwifery students was almost similar and there is not significant different among students in quality of life dimensions based on having or not having pain.

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Conflict of interests: The authors declare that they have no conflict of interest.

Authors contribution: F R, was primary researcher author and methodologist of the study (%40). FA was advisor of the study (%40). MK was advisor of the study (%20). All authors read the manuscript and approved it**.**

Ethical permission: In this study, all ethical principles are respected.

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