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Musculoskeletal Disorders among Tarbiat Modares University Students Living in Dormitories in 2016

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Background: Musculoskeletal disorders are one of difficulties in communities that has negative effect on various aspect of life. The aim of this study was to evaluate musculoskeletal disorders in students.
Materials and methods: In this study cross-sectional descriptive-analytic approach, 306 college students were enrolled by using non probability purposive sampling method and also availability. Data was obtained based on demographic data questionnaire and musculoskeletal researcher-made questionnaire. After collecting required data, SPSS software version 19 was used for descriptive and statistical analysis.
Results: According to the obtained results and symptoms associated with musculoskeletal pains, it should be noted that 93 cases suffered from low back pain (30.4%), 76 cases from knee pain (24.8%), 50 cases from shoulder pain (16.3%), 21 cases from heel pain (9.6%), 65 cases from neck pain (21.3%), 10 cases from pelvic pain (3.3%), 50 cases from wrist pain (16.3%), and 6 cases from elbow pain (2%).
Conclusion: The study showed that most students were suffering from musculoskeletal problems in the lower back, knees and neck. Therefore providing correct and sufficient training for the students while doing their daily activities could be of great help in the prevention and control of the musculoskeletal problems in the students.

Keywords: MSD, Students, Dormitory

Introduction

Musculoskeletal disorders have been one of the most important occupational health problems in recent years, which are almost prevalent in all businesses (Rahimi A., Ahmadi F., Akhond, M. R. 2004). Any tissue damage in muscular, skeletal, and nervously stems causing disruption in organs normal function is referred to as Musculoskeletal Disorders (Akesson et al., 1999). Economic losses caused by these disorders affect not only the individuals but also the society in which they live (Kathy Cheng, H. Y., Cheng, C. Y., Ju, Y. Y. 2012).

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Musculoskeletal disorders as the most common occupational diseases are accounted for a bulk of work-related illnesses (Akesson et al., 1999). Due to high incidence of these disorders, they are known as a major cause of death and disability among adults in developed and industrial countries (Coluci et al., 2012).

It is estimated that in sum, direct and indirect health care costs resulting from MSDs may account for 1% of the Gross National Product (GDP) of the industrial countries (Yu et al., 2012). This disorders form about 48% of all workplace diseases (Gerr et al., 2004). Musculoskeletal disorders are also one of the most common causes of occupational injuries and disability in industrial and developing countries (Cohen & Roe, 2000). The symptoms of these painful disorders are manifested in different parts of the body such as neck, shoulder, elbow, wrist, waist, hip, causing organic injuries in some areas and organs (Levy et al., 2006).

In a study conducted on university students, it was shown that 1.82% of the students suffered from these kinds of anomalies (Rahbar et al.,

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2010). Also, in another study, it was shown that almost 55% of the students complained about painful musculoskeletal disorders (Tirgar, A., Aghalary, Z., Salari, F. 2013).

Today, students are considered as one of the most important social groups because of their important roles in managing country in the future (Forrester &Harbison, 1995). However, compared to other professions, less attention is paid to their injuries and malformations relative to the rest of the population. As the students forma large number of the country population, so it is important to identify important risk factors associated with the incidence of musculoskeletal disorders in the students in order to take appropriate action for the prevention and decline in health care costs. Therefore, this study aimed to determine the prevalence rate of musculoskeletal disorders and underlying factors promoting the incidence of these kinds of disorders in Tarbiat Modares University students living in dormitories in 2016.

Methods

This study was a cross-sectional descriptive-analytic approach, which aimed to assess musculoskeletal disorders and underling factors involved in the incidence of these kinds of disorders in Tarbiat Modares University students living in dormitories. In this study, 306 college students were enrolled by using nonprobability purposive sampling method and also availability. Inclusion criteria for the students to be included in the study were consisted of being university student, living in one of the dorms covered by Tarbiat Modares University, willingness in participating in the study. Exclusion criteria were consisted of unwillingness in participating in the study, submitting uncompleted questionnaire.

Data were gathered by questionnaires which were consisted of questions about age, gender, educational level, and marital status, number of children, employment status, work experience, economic status, location, and type of house. Then the students were asked about the kind of musculoskeletal problems they suffered. These disorders were consisted of back, knee, shoulder, heel, neck, pelvic, wrist, and elbow pain. Then, the students were asked about whether they had received any treatment or not, the length of time they experience pain, the length time taken for their treatment, and their doctor's diagnosis.

In order to take into account the ethical considerations, the aim of this study was explained for all the students participating in the study. The researcher also ensured them that their participation in this research was voluntary, and the data collected by means of the questionnaire would be kept confidential, and that the Students' numbers or names were not needed. After collecting required data, SPSS software version 19 was used for descriptive and statistical analysis.

Table 1. Demographic characteristics of the participants.

Variables		Numbers	Percentage (%)
Age	Under 30 years	247	80.7
	30-39 years	56	18.3
	40 years or above	3	0.1
Gender	Female	188	61.4
	Male	118	38.6
Educational level	Master	134	43.8
	PHD	172	56.2
Marital status	Single	268	87.6
	Married	36	11.8
	Divorced	2	0.7
	Widow	0	0
	Other	0	0
Children	Have	9	2.9
	Have not	292	97.1
Occupation	Faculty	6	2
	Employee	18	5.9
	Free	22	7.2
	Unemployed	164	53.6
	Other	96	31.4
Work experience	Have	57	18.6
	Have not	249	81.4
Economic status	Good	29	9.5
	Average	238	77.8
	Bad	39	12.7
Location	City	286	93.5
	Village	20	6.5
The type of house	Owner	222	72.5
	Least	42	13.7
	Government-least home	9	2.9
	Other	33	10.8

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Table 2. The frequency of musculoskeletal disorders in the students.

Disorder	Back	knee	Shoulder	Heel	Neck	Pelvic	Wrist	Elbow
Number	93	76	50	21	65	10	50	6
Percent (%)	30.4	24.8	16.3	6.9	21.2	3.3	16.3	2

Results

From a total of 306 students surveyed, 188 were female (61.4%), and 118 were male (38.6%). The average age of the participants was 27.06 years with the age ranges from 21 to 45 years. As shown in Table 1, most of the participants were in the age group under 30 years (80.7%). In terms of educational level, about 134 (43.8%) participants were master, and 172 (56.2%) participants were PHD. In terms of marital status, 268 (87.6%) cases were single, 36 (11.8%) cases were married, and two (0.7%) cases were divorced.

According to the obtained results and symptoms associated with musculoskeletal pains, it should be noted that 93 cases suffered from low back pain (30.4%), 76 cases from knee pain (24.8%), 50 cases from shoulder pain (16.3%), 21 cases from heel pain (9.6%), 65 cases from neck pain (21.3%), 10 cases from pelvic pain (3.3%), 50 cases from wrist pain (16.3%), and 6 cases from elbow pain (2%).

Discussion

Determining the extent and pattern of the musculoskeletal pains and disorders are the first steps in the prevention, diagnosis, and treatment of these disorders. Studies have indicated that musculoskeletal disorders are considered in the first rank regarding the economic costs they pose on the society for their treatment, and among these disorders, backache is in the first place (Ariëns et al., 2001). It was revealed that the most common musculoskeletal problems among the students were low back pain, knees pain, and neck pain.

In a study conducted in 2013, it was shown that 221 students (55.1%) faced with painful musculoskeletal disordered. The prevalence rate of complains, especially in the areas such as back and neck, was high compared with other areas of the body with the proportions of 27.9 and 27.7, respectively (Tirgar, A., Aghalary, Z., Salari, F. 2013).

It is clear that this finding is consistent with the present study.

Also, in another study conducted in the same year, it was shown that musculoskeletal disorders were highly prevalent among students, and 68.8% of the students suffered at least from one of these disorders (Barakat et al., 2013). In another study among MA students of physiotherapy, the prevalence rate of Low Back Pain (LBP) was reported 69% (lifetime), 63% (12 months), 44% (one month), 28% (one week), respectively by the students (Nyland & Grimmer, 2003).

It seems that using laptop or computer for a long time without any exercise or body movements is an important factor leading to back pain, wrist pain, and neck pain. In a study conducted in 2006, it was shown that neck area had the most common musculoskeletal disorders in the students working with computer for more than six hours in a day (Rempel et al., 2006).

In another study (Seraji et al., 2005), the prevalence rate of neck, back, shoulder, and wrist pain were reported65%, 60%, 38%, and31%, respectively. In this study, neck pain was reported to be the most prevalent disorder; while in the present study, the most prevalent rate was allocated to back pain (30.4%).

Conclusion

It seems that lifting heavy objects, incorrect body movements, improper and high-heels shoes could be considered as important factors leading to back pain. The major risk factors associated with musculoskeletal disorders are consisted of sitting for long hours, working in a standing position on a regular basis, improper lying position, heavy weight, and long working hours.

So providing correct and sufficient training for the students about sitting, standing, walking, and sleeping principles; ergonomic principle associated with using laptop, tables and chairs; appropriate body movement in workplace could be of great help in the prevention and control of the musculoskeletal problems in the students.

There is a limitation in this study that needs to be addressed; this study was a self-reported study, so the accuracy of the results cannot be ensured. It is recommended that further researches to be carried out in order to identify other risk factors associated with musculoskeletal disorders in the students, to gain additional information, and to provide appropriate intervention strategies.

Conflict of Interest

There is no conflict of interest for this article.

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Authors ' contribution

SSK: Conducted whole study and had full access to all of the data for analysis. Also she was involved in drafting the article

MR: Assessed the patients and confirmed their eligibility for the study. He took responsibility for conducting the study and the integrity of the data and the accuracy of the data collection.

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