



# Status of Musculoskeletal Disorders among Female Students: A cross sectional study from Izeh, Iran

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## ABSTRACT

**Aims:** One of unhealthy behaviours that can be leading to musculoskeletal pain and discomfort in students is keeping inappropriate posture of the vertebra column, posture of sitting on bench or behind computer, and also improper carrying of backpacks. Therefore, the aim of this study was to evaluate the status of musculoskeletal pains and disorders of female students in the schools of izeh ,Ahvaze , Iran.

**Method and Instruments :** In this descriptive-analytical study, 146 female students from two schools at this city were selected through simple random sampling. In order to evaluate musculoskeletal discomforts and pains, a Nordic Musculoskeletal Questionnaire (NMQ) was used and a also body map was used to determine the location of pain. Data analysis was performed, using SPSS software.

**Findings:** totally, 146 female students were examined. According the results, the majority of the students felt pain in their back ( 27.40%) and shoulder (26.03%) respectively. However, least rate of feeling torment was related with elbow (5.48%).

**Conclusion:** Musculoskeletal Disorders (MSD) are clearly seen in female students . This study recommended doing more studies regarding the causes of these disorders . Furthermore, designing appropriate clinical/ educational intervention regarding keeping right posture of vertebra column is guaranteed.

**Keywords:** Musculoskeletal Diseases, vertebra Column, Posture ,Student

## Introduction

Among organized and formal institutions, schools are the most important one, which can promote the physical and mental health of children by providing a suitable environment <sup>[1]</sup>. Schools have profound and lasting impact on pupils in a cascade of ways, such as body, mind, and emotion, It has been argued that if this environment is not properly organized, it causes problems both in childhood and adulthood <sup>[2, 3]</sup>. One of these problems can be musculoskeletal pain and discomfort in students due to inappropriate position of the body, sitting posture on bench or behind computer, and inappropriate carrying of rucksack <sup>[2]</sup>. Students' sitting position on bench takes a lot of time and thus if this condition is inappropriate due to lack of awareness, many problems,

including pressure on the muscles and the spine, should be expected <sup>[4]</sup>. While, occurrence of musculoskeletal problems could be associated with sitting posture and also can be seen at any age, this issue is more important in vulnerable groups such as child and adolescent and serious problems in adulthood. There are many studies conducted on the complications resulted from body's poor postures, such as poor sitting posture and misuse of the ergonomics principles. In 2008, a study in Europe showed that more than 50 percent of students had musculoskeletal pain and discomfort <sup>[5]</sup>. In another study in Columbia, post-scapular musculoskeletal discomfort was the second most common problem in students. A comparative study that wa conducted in Tehran, Iran in 2010, drawing a conclusion

that the most musculoskeletal disorders were diagnosed within the bear, neck and midsection as 37.9%, 28.5% and 17.4% separately [6]. A point by point investigation in 2014 has been done in Iran, found the foremost common skeletal clutter within the bear zone approximately 81.7% and 85.4% showed deviation of the spine [7]. Previous study that was conducted on 1446 schoolchildren between 11 and 14, back torment was detailed 24 percent back disorders within the past month [8]. The other study showed 10 to 20 percent of schoolchildren reported musculoskeletal pain [9]. Moreover, another evidence cleared that the most noteworthy sum of musculoskeletal clutters were 5.37% in bear, 28.5% within the neck and 17.5% within the lower back [10]. Giving the importance of musculoskeletal disorders among schoolchildren and limited studies regarding this issue in different provinces of Iran, This study investigated the status of this health problem in Izeh a souther city of Iran.

## Method and Instruments

**Study design and eligibility:** This cross sectional descriptive-analytical study was conducted on 146 female students at two school of izeh in 2018. The inclusion criteria of the study included studying in school of izeh and, being volunteer. However, if the students were not able to fill the questionnaires were excluded from the study.

**Sampling:** The statistical population of this study was selected through simple random sampling.

**Instrument:** To decide the area of musculoskeletal distress and torments within the subjects, body outline and Nordic musculoskeletal framework survey, were utilized [11]. The Nordic survey comprises of two parts: the primary portion comprises

of statistic questions, and the moment portion contains questions almost deciding the complications and distresses of body, in which the respondents ought to decide in which portion of the 9 parts of their body (neck, bear, elbow, arm, back, lumbar locale, thigh, knee and feet) have had torment or inconvenience over the past year [12].

**Procedure:** At first, the reason of the study was clarified to all the participants, but the participants were too guaranteed that their individual data would remain confidential; at that point, they were given the consent form to be signed and also the survey containing statistic data, as well as data on musculoskeletal disorders.

**Analysis:** At the conclusion, the collected data from 146 students were analyzed through using SPSS 22.

## Findings

In this study, 146 students were examined. All the members were female. The foremost subjects were between the ages of  $15/95 \pm 0/81$  and  $16/15 \pm 0/88$ . According to Table 1, 55% have no movement outside of their school hours 68% of the students were doing exercises.

According to Table 2, the highest percentage of feeling pain for those who participated in this study was pain in the back and shoulder as 27.40% and 26.03% respectively, as well as the least rate of feeling torment in arms.

## Discussion

The aim of this study was to assess the status of musculoskeletal torments and clutters among female students of Izeh city. Deciding the predominance and design of musculoskeletal disarranges and torment is the primary step within the prevention, diagnosis and treatment of these disorders. In this study, the foremost complaints about pain and inconvenience was about neck and lower back. A few studies have been

performed within the field of musculoskeletal disorders in students of diverse ages in Iran and other nations. Previous study detailed a prevalence of 4.1% for scoliosis in students of Rio de Fantastic, Brazil [13].

According to Bueno and et al, the prevalence of kyphosis, lordosis, and scoliosis in Portuguese children was 16.6%, 27.9%,

and 33.2%, separately. They also appeared that lordosis was more prevalent at ages 8 to 12 years old and scoliosis was more predominant in boys than young ladies [14,15]. It has been argued that inactivity status of back and neck can be resulted in circumstance un healthy sitting un healthy is one of the causes musculoskeletal disorders.

**Table1.** Demographic characteristics of the studied students.

| variable                 |                               | N   | %  | P- value (Independent T) |
|--------------------------|-------------------------------|-----|----|--------------------------|
| Residency                | City                          | 140 | 96 | 1                        |
|                          | Village                       | 6   | 4  |                          |
| Father's Education       | Under the diploma             | 53  | 53 | 0.191                    |
|                          | diploma                       | 60  | 38 |                          |
|                          | Super-diploma and higher      | 33  | 8  |                          |
| Mother's Education       | Under the diploma             | 60  | 45 | 0.121                    |
|                          | diploma                       | 58  | 41 |                          |
|                          | Super-diploma and higher      | 28  | 14 |                          |
| Father's Job             | Employee                      | 36  | 21 | 0.936                    |
|                          | manual worker                 | 29  | 27 |                          |
|                          | Free                          | 67  | 42 |                          |
|                          | Retired                       | 10  | 7  |                          |
|                          | Unemployed                    | 4   | 3  |                          |
| Mother's Job             | housewife                     | 117 | 84 | 0.284                    |
|                          | Employed                      | 29  | 16 |                          |
| Economic situation       | Good                          | 64  | 48 | 0.658                    |
|                          | medium                        | 77  | 47 |                          |
|                          | Bad                           | 5   | 5  |                          |
| Sports Activities        | I have                        | 91  | 68 | 0.126                    |
|                          | I do not have                 | 55  | 32 |                          |
| Out-of-School Activities | I have                        | 63  | 45 | 0.290                    |
|                          | I do not have                 | 83  | 55 |                          |
| Type of Activity         | I do not have                 | 46  | 29 | 1                        |
|                          | Permanent sitting             | 6   | 8  |                          |
|                          | Standing standing             | 6   | 4  |                          |
|                          | Standing and sitting together | 88  | 41 |                          |

**Table2.** Different disorders in different parts of studied students' bodies.

|          | Number | Outbreak |          |       |        |            |        |                 |        |        |
|----------|--------|----------|----------|-------|--------|------------|--------|-----------------|--------|--------|
|          |        | neck     | Shoulder | Elbow | Wrist  | Upper Back | Back   | Hips and Thighs | Knee   | Ankle  |
| Tenth    | 86     | 1%       | 3%       | 0%    | 0%     | 3%         | 5%     | 0%              | 0%     | 1%     |
| Eleventh | 50     | 54%      | 56%      | 0%    | 36%    | 18%        | 64%    | 16%             | 20%    | 22%    |
| Twelfth  | 10     | 60%      | 73%      | 23%   | 41%    | 21%        | 72%    | 27%             | 35%    | 37%    |
| Total    | 146    | 23.29%   | 26.03%   | 5.48% | 19.18% | 7.53%      | 27.40% | 12.33%          | 13.70% | 14.38% |

## Conclusion

Considering the discoveries of this study and comparing it with other investigates, it is suggested that students matured between 10 and 15 years old should be consideration, and for musculoskeletal disorders, its complications and avoidance ways should be completely educated.

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

**Authors contribution:** N S, was primary researcher author/ Methodologist/ Assistant in statistical analyst and discussion section (50%)

SST supervised all sections of the study. (30%)

SK was advisor of the study. All authors read the manuscript and approved it. (20%).

**Ethical permission:** This study approved by ethics committee of tarbiat Modares University with ID number IR.TMU.REC.1396.663.

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