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Assessment of Low Back Pain and Musculoskeletal Disorders (MSDs) Risk Factors in Regards to Postural Behavior Among Teenagers, East Azerbaijan, Iran

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Abstract: Low back pain has a relatively high prevalence during school years. If the causes and risk factors of back pain could be removed at an early stage, the opportunity for remedial action would be improved. Several authors have been reported a positive relationship between back pain and incorrect sitting and standing postures. There was also strong evidence for low back pain being associated with poor "lifting- pushing" habits. We recorded postural behavior and lifting, pushing and pulling habits in this study. Subjects were 438 teenagers (both sexes) that their mean age was 14.55 years (±3.3). 41.03% of pupils selected correct answer in lifting of equipment. About half of them know correct method of tools pushing and only 34% was informed about pulling methods. Sixty five percent of pupils have poor habit in standing. Approximately 63% of students have bad sitting posture in time of study. The results indicate lake of student knowledge about correct body position. Majority of teenagers had poor sitting posture while reading and writing. About 62% of students had incorrect situation (kyphosis) while standing. Furhtermore practice of pupils in lifting, pushing and pulling isn't satisfactory. Ergonomics is not found in the curriculum for public education and education of correct body situation in schools will be an important step in tackling with the high

Key words: Assessment, low back pain, musculoskeletal disorders, risk factors, postural behavior, teenagers

INTRODUCTION

The lifetime incidence of Low Back Pain (LBP) has been estimated to be as high as 85% of the adult population (Jin *et al*., 2003). On the other hand chronic musculoskeletal pain is a major health problem in most countries with a prevalence of around 35% in the general population. Lower back pain has a relatively high prevalence during school years. The statistic vary from country to country: Finland 20%, England 26%, Canada33%, United and Switzerland 51%. States 36% (Heyman, 2002). If the causes and risk factors of back pain could be removed at an early stage, the opportunity for remedial action would be improved. Various lifestyle factors increase the risk of developing non-specific LBP, increase the pain and influence the functional limitations associated with it. Several authors have been reported a positive relationship between back pain and incorrect sitting, standing postures (Murphy *et al*., 2004; Grimmer and Willams, 2002). Furthermore neck and neck/shoulder Musculoskeletal Disorders (MSDs) were strongly associated with awkward posture. There was also strong evidence for low back pain being associated with poor "lifting- pushing" habits (Krismer, 2007; Griffoth *et al*., 2007). This exposure may be present in school due to heavy school bags and prolonged flexed posture caused by mismatch children and school furniture or lack of students` knowledge. As we saw the need for recognizing the current states of the incorrect posture and poor habits among pupils, we recorded postural behavior and lifting, pushing and pulling habits in this study.

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MATERIALS AND METHODS

Subjects were 438 teenagers (both sexes) that were selected randomly from junior and senior high schools including both public and private. all the children answered a questionnaire in their classroom. After establishing of many sessions professional groups developed questionnaire. This questionnaire validate and for demonstration of reliability we performed test-retest among 42 student (15 men and 27 women). The Questionnaire contain demographic information and 26 question about correct and incorrect position including sitting, standing, pulling and lifting of tools. All of postures was shown as figure .

RESULTS

The mean age of participants was 14.55 years (±3.3). The sample comprised 209 males (47.7%) and 229 females (52.3%) ranging in age from 10-19 years. Approximately half of children's fathers (58.7%) were employee. 38.2% of them worked in private sectors and 3.1% of fathers were unemployed. Figure 1 shows that 41.03% of pupils

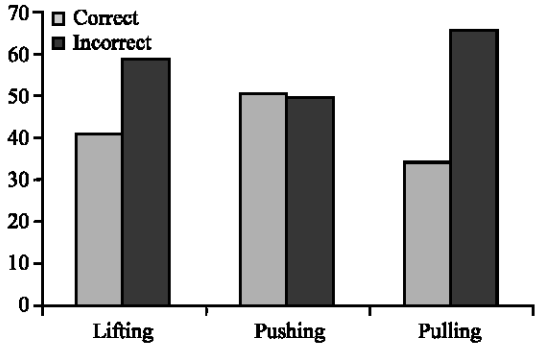

Fig. 1: Correct and incorrect method tolls lifting, pushing and pulling

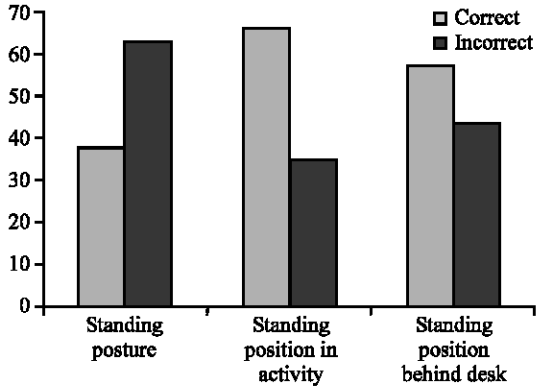

Fig. 2: Pupli's poor habit in standing

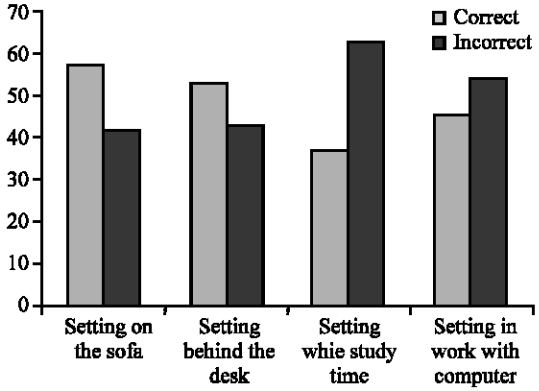

Fig. 3: Student bad sitting posture in time of study

selected correct answer in lifting of equipment. About half of them know correct method of tools pushing and only 34% was informed about pulling methods (Fig. 1).

We found that approximately 65% of pupils have poor habit in standing (Fig. 2) Student sitting positions are reported in Fig. 3. Figure 3 shows us that about 63% of students have bad sitting posture in time of study.

DISCUSSION

To our knowledge the present study is the first that on the students' posture habits in Iran. The results indicate lake of student knowledge about correct body position. Majority of teenagers (62%) had poor sitting posture while reading and writing. In Panagiotopoulou and colleagues survey 55% of children had poor habit while sitting. About 40% of student in our survey place their buttocks forward on the edge of the sofa . The lack of back support in this position caused slump, kyphotic posture (Panagiotopoulou *et al*., 2004). Finding from questionnaire showed that more than half of them don't enough information about sitting behind computer. The sitting position especially for long period, was found to be the most important factor in connection to lower back pain (Panagiotopoulou *et al*., 2004). About 62% of students had incorrect situation (kyphosis) while standing. Furhtermore practice of pupils in lifting, pushing and pulling isn't satisfactory.

CONCLUSION

The disturbingly high prevalence of incorrect posture in this community necessitates a serious response. Ergonomics is not found in the curriculum for public education in Iran. Education of correct body situation in schools and introduction of muscular strength, flexibility, safe handling tools and addressing the sitting,

standing, lifting and pushing positions through health promotion programs for pupils will be an important step in tackling with the high burden of illness imposed by back pain and other musculoskeletal disorders in this community.

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