

STUDY OF POSTURAL ABNORMALITIES OF MALE STUDENTS OF SAHAND UNIVERSITY OF TECHNOLOGY

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Annotation. The present study has been accomplished in order to examine the prevalence of postural abnormalities of male students. The statistical community was the whole male students in the university. From this community 300 students within the ages range of 18 - 22 were selected randomly as the investigation subjects. Data were obtained by a questionnaire, podoscope, a digital camera (taking photos of the subjects from Anterior, Posterior and lateral views) and the software for corrective exercises provided by Iran ministry of education. After that the investigation was finished the abundance percentage was used to express the postural abnormalities percentage of the research subjects. The results show that cervical lordosis and flat foot are the most prevalent abnormalities with 18.66 and 17.66 percent respectively, and torticollis and knee hyperextension have less prevalence in investigation subjects. The results show that among all of the participants in the investigation, 140 students (46.66 %) have no abnormalities, 160 students (53.34 %) have at least one, and 70 students (23.33 %) have more than one. From this study it is obvious that the prevalence of the postural abnormalities among the statistical subjects is high. Therefore the need to a serious program concerning the abnormalities, especially ordering corrective exercises and also preparing the way for students to have physical activities seems to be inevitable.

Key words: postural abnormalities, corrective exercises, upper extremity, lower extremity.

Introduction

Movement, the mechanics of human life and lack of movement and activity, is along with side effects in different ages. Technology and science are increasing and improving in recent decades in a way that made people to use machines instead of their body in fulfilling daily activities. This improvement is considered as an important factor in decreasing of physical and professional activities. Lack of physical activities and inappropriate body posture while working and resting reshapes and deforms the structure of body and consequently makes some problems (Kohandel M, 2004).

Postural abnormalities should be considered seriously for those who suffer from physical movements, pains and body weakness, whose number is increasing, especially for children, adolescents and young people. Corrective exercises are of the branches of sports science which deals with this issue. Sport experts are required to be familiar with corrective exercises to prevent prevalence of such abnormalities and execute appropriate medical performances to have an important role in ensuring health, vivacity and freshness of broad communities (Kohandel M, 2004).

Prevalence of abnormalities, especially in adolescence and youth, have negative effects on their spirits, so lack of biomechanical balance, changing body posture and consequently deforming fitness would be the cause of occurrence of different psychological and sociological problems. If these abnormalities are not recognized and cured soon, irreparable effects will occur which will result in different problems requiring much time and money to be treated.

Sometimes application of corrective exercises and treatments would be impossible. According to the fact that majority of physical abnormalities are the results of muscle weakness and wrong posture, they are correctable and preventable. Hence it seems that preventing such phenomenon in recognition, awareness and corrective plans are main actions.

Reviewing literature, shows that the amount of postural abnormalities is considerable in Iran (Daneshmandi H, 2003. Bahrami M, 2005. Sane A, 2009).

With regarding previous studies, it seems that considerable number of people tested in previous studies suffer from various abnormalities, the statistical data confirm this situation which seems challenging. Types of abnormalities concerning the type of testing and job are different. Although the amount of abnormalities in top of the body rather than the bottom is high in studies (Kohandel M, 2004. Heidari Nik H, 2007).

Because of the particular importance of abnormalities spread between students especially between those who are in growth age, the goal of this study is to survey body abnormality between the male students of Sahand University of technology in order to present corrective exercises.

Materials and methods:

Present study is descriptive, practical. Also it is a field study. After subjects, the way to execute subjects then the method of study is discussed. Subjects were examined according to the regulatory programs to be participated in the study. Anthropometric characteristics of the students were measured and recorded. Using Digital camera cx6330-Kodak, three anterior, posterior and lateral views of subjects were shot which were followed by the measurement of Anthropometric. Pod scope was used for recognizing sole abnormalities and the results were recorded. At the end corrective exercises software developed by education system, Ergo therapy was applied to investigate and analyze physical structure and postures of the students.

Subjects:

Male students of Sahand University of technology are the population of this study. Among them 300 students were selected randomly and were tested. To identify the bulk of the sample, Morgan and Korjesi chart were used and the subjects were identified according to that chart.

Variable:

Physical and postural abnormalities including: Torticollis, shoulder down, kyphosis, forward head, lordosis, scoliosis, pelvic obliquity, genu valgus, back knee, genu flexum, bow leg, pes cavus, flat foot, Hallux valgus, are the research variables.

Data analysis:

After collecting required data, descriptive statistics in the form of mean, standard deviation, chart, mode and frequency charts were used to analyze gathered data.

Results:

According to diagram 1, postural abnormalities of male students in Sahand University of technology whose upper extremity were investigated, forward head with 18/66 percent is the most common abnormality and torticollis with 0.66 percent is less common among the participants. In the investigation of lower extremity, flat foot (17/66%), and back knee (0.66%) have devoted the most and the least percentages to themselves respectively. Also no one was suffered from genu flexum and pelvic obliquity. Regarding the forward head abnormality 244 subjects were healthy and without this abnormality and 56 people (18/66) were suffering from forward head. By virtue of shoulder down, 250 ones were healthy and 50(15/66) were suffering from the mentioned abnormality, For lordosis 253 people were without and 47(15/66%) with this abnormality. 257 people were healthy and 43 were suffering from Kyphosis abnormality. 294 people and 6 (2%) among subjects suffered from scoliosis. 298 people and just 2, (2%) among the subjects were without and with Torticoli respectively. For pes cavus 283 of the subjects were healthy and 17 suffered from pes cavus. 284 were healthy and 16 (5/33%) suffered from bow leg. Regarding genu valgum 292 subjects were healthy and 8, (2/66 %) suffered from genu valgum. In hallux valgus, 293 subjects were healthy and 7 (2/34%) suffered. Regarding the abnormality of back knee, 298 subjects were healthy and just 2 (0/66%) suffered from the mentioned abnormality.

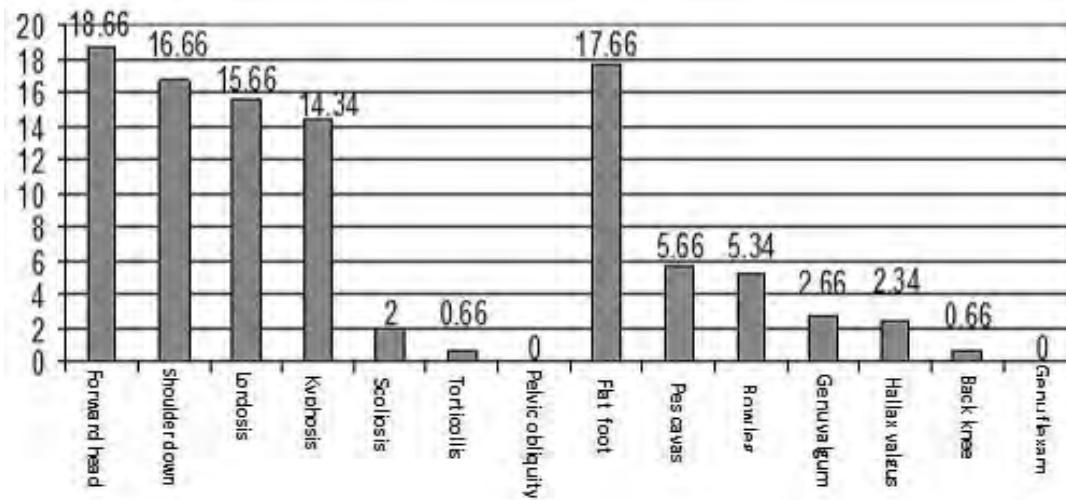


Diagram 1: students' postural abnormality percentages

Table 1. Male student's frequency of Sahand Technology University, based on amount of postural abnormalities spread

Persons who have more than one abnormality		persons who have at least one abnormality		healthy persons	
percent	numbers	percent	numbers	percent	numbers
23/33	70	53/34	160	46/66	140

As it is shown in the table 1, 140 people (46/66%) of subjects were healthy and 160, 53/34%, had at least one abnormality and 70 subjects, (23/33 %) had more than one abnormality.

Discussion and conclusion:

The aim of present study is identifying the common abnormalities among male students of Sahand University of technology. The results of the study showed that 53/33 percent of subjects were suffering from postural abnormality which is in line with the results of Bahrami (2005) 57/67 %, while the amount of abnormalities in the study of Kohandel

(2004) and Lasjuri (2004) are 81/58 % and 80/6 % respectively. Also the results of the study show that 48 percent of abnormalities are related to upper extremity which is in line with the amount gained by the study done in Holland for 11 years old children, 48/7 percent (2003). Other results indicated that the highest abnormality in the upper part of body with the amount of 18/66 percent is close to the findings of Afsaneh Sane (24/4%) (Sane, A 2009). According to the studies, this abnormality is the result of bad habits of students and university students during studying which will occur more in adolescents and will increase by growing and getting older.

Also, Lasjuri's findings (2004) 55/2 percent and Hassan Daneshmandi's findings (2003) 33 percent showed that head forward is the most common abnormality in the upper part of body. Regarding the fact that using high pillows is the common habit of our nation, and 50 percent of abnormalities are related to this abnormality, it can be said that there is a relationship between these two factors (Bahrami, M 2005). Shoulder down with 16/66 percent is the second abnormality in upper part of body which is in line with Lasjuri (2004), 19/37 percent and Bahrami (2005) 14/5 percent for the students. By virtue of these abnormalities, increasing height and its meaningful relationship with forward head, bow back and weak muscles is concerned. Lordosis, 15/66%, is the third abnormality in the upper part of body which is in line with findings of Lasjuri 22/99 percent and Bahrami 10 percent. But it is different from other findings in different populations including Yudas and Lovin in 1996 which are 52/7% and 31/8 % respectively (Nitzschke E, ET al.1990). According to the Anthropometric differences and different age groups, the above mentioned difference is justifiable.

Je (2003) regarding the causes of Lordosis, has suggested inflation of joints between Kyfosis, overweightness, osteoporosis, bone union, as the most important cause of Lordosis (Je J, 2003).

The findings of the study, regarding Kyfosis, showed that 14/33 percent of students are suffering from this abnormality which is in line with the findings of Bahrami 12/5 percent and again it is close to the findings of Nitzschke and Hylan Brand in the students. Nelson and Berjenat have observed a correlation and relationship between height and Kyfosis. Lack of movement and existence of bad habits of posture, repetition of inappropriate job activities are regarded as the causes of this abnormality (Bahrami et al, 2005, Nitzschke E et al, 1990).

Scoliosis (2%), one of the received data of this investigation, is similar to Hasan Daneshmandi's data (4.75%). Scoliosis usually occurs before 14, and its spreading limit is 1.9 % (Daneshmandi H, 2003). The most common reasons of scoliosis are choosing wrong biomechanical position while sitting, contraction of one side of the muscles that are near to backbone, because of extreme backaches, nerve defects and weakness of moving (Nitzschke E, 1990).

Result of this investigation in the lower extremity abnormalities (bow leg, genu valgum, back knee, genu flex am, flat foot, pes cavus, Hallux valgus) says that 28.66 % of students has the abnormalities of lower extremity, that also Bahrami's researches in lower extremity show 15.66 %. Lower extremity, tolerate body weight. Flat foot with 17.66 % in this investigation shows the most abnormality in the lower extremity, that it's near to Bahrami's obtained data (14.81). After flat foot, pes cavus is the most common abnormality in our investigation, that shows 5.66 %, and it's similar to Bahrami's received data (7.5 %) (Bahrami M, et al.2005). We can see that between the exam items bow leg 5.33 %, is near to Lasjori's 6.93 %, in this research, student's genu valgum was 2.66 %, and it's near to Bahrami's 4.25 % results. Moreover, Lasjori has reported in his research that weight factor has a considerable relation with this disease data (Lasjori G, et al. 2004).

This recent investigation about Hallux valgus abnormalities showed that 2.33 % of students have this disease and Bahrami's received data are 6.5 %. Because of the important role of great toe in balance and statics, it has a particular importance in comparison with other foot fingers. Great toe is the last part of force transmission after heel, so every change in the form and shape of great toe may have a negative influence in human movement mechanics. The most common reason of development of this disease is wearing tight shoes, flat foot and related muscles. Backknee with 0.66 % between students is the least common abnormality in lower extremity, and also Hasan Heidari's obtained data about this disease was 2 % (Heydari Nik H, et al. 2007). So we can deduce that, the factors such as weakness of moving and muscles, wrong habits of walking, standing and sitting, wrong way of bearing bags and books, using equipments that are not standard, using benches in schools and etc may have a significant role in development of each one of these abnormalities.

Also lack of awareness of students, parents and teachers and most importantly, lack of attention to correction of inappropriate body condition, are the reasons of occurring abnormalities.

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