A Survey of Relationship between scoliosis, lordosis and kyphosis with self-concept, body image and depressive mood among male students of Islamic Azad University of khoy branch

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ABSTRACT

The goal of the present research was to study Relationship between scoliosis, lordosis and kyphosis with self-concept, body image and depressive mood among male students of Islamic Azad University of khoy branch. To attain this, the researcher used Beck Depression Inventory The Rosenberg Self-Esteem Scale (RSES), Rao’s Social Maturity Scale (RSMS), Body image Questionnaire (MBSRQ-AS), as well as a system for measuring scoliosis, lordosis and kyphosis in order to determine the variables. This research was carried out male students of Islamic Azad University of khoy branch. Statistical population 1500, students was selected by simple random from statistical population. 150 student boys were selected to participate in this study. Firstly, using spinal mouse system, the degree of scoliosis, lordosis and kyphosis of subjects was determined. Then, the foresaid questionnaires were distributed among samples. We used Pearson’s coefficient correlation in order to assess correlation and significance, The statistical analysis was done through SPSS 18, Difference was statistically significant (p<0.05).

Key words: self-esteem, body image, depressive mood, scoliosis, lordosis, kyphosis

Introduction

In recent decades, there have been great advancements in psychology and corrective exercises and these concepts have been regarded a lot more than before. Now a days, in countries renowned in sports, these fields play an important role both in function and in research. Corrective movements are of the important branches of physical education that deal with correcting postural deformities and after recognizing the type of deformity, they try to treat the deformity by recommending physical activities and special sports exercises [1].

Deformities of the spinal column are usually manifested as scoliosis, kyphosis, and lordosis. Transformation of different parts of spinal column leads to deviation in bones and commissures based on where they are located. For instance, weakness of anterior part of vertebrae and back muscles leads to kyphosis and lateral and irregular curvature of vertebrae leads to scoliosis. The most prevalent of these deformities is scoliosis; kyphosis and lordosis come later [2].

Temporary scoliosis is caused by imbalance or weakness of muscles around spinal column which can be reflexive or due to specific body postures. Usually scoliosis manifests before the age of 14 and its prevalence is 1.9%. In radiological examination of patients it was shown that about 2.3% are postural, 1.4% idiopathic and the remaining 10% are congenital [3].

Scoliosis is a disease and can be analyzed from a medical perspective. Its cause is not exactly known, but congenital factors are important in its development. These anomalies are more prevalent in girls (85% of patients are girls). Scoliosis may develop in dorsal or dorsal-lumbar area, but the most prevalent cases are in dorsal area with curvature to the right [4].

Kyphosis is to increase the curvature in upper part of back that cause to round upper back part so-called humpbacked [5]. This subject has been frequently related to the fatigue and not to balance in muscle power of the spinal column to make straight it in 1925 hogarshoerman, at first by radiography showed that kyphosis deformation is caused by to be triangle of vertebrae forms [6]. One of factors to cause kyphosis, is to be wedge-shaped vertebrae and its cause is to stiff or to clog the veins and circular cartilages between vertebrae body. By clogging
vertebras veins, their developments is stopped and gradually kyphosis progresses. This theory could not to gain success later.

In order to prevent psycho-pathological problems during adolescence it is necessary to identify intervention variables which can help configure programs to be applied during childhood and adolescence. Following this perspective, this study is aimed at identifying factors playing a preventive role against psychopathologic and behavioral problems during adolescence.

Self-concept is a very important concept in psychology and theorists of this field of study have specified it and studied its effect on human behavior. Individuals with negative self-concept always live their lives with dubiety, uncertainty and tension and all of these states inhibit their abilities and consequently hinder or prevent their success. If the individual has a positive self-concept and they are confident of their "self", their self-actualization and success are realized and they achieve independence in their function and behavior, leading to satisfaction and effective employment of individual potentials [7].

Self-concept: “is the set of perceptions or reference points that the subject has about himself: the set of characteristics, attributes, qualities and deficiencies, capacities and limits, values and relationships that the subject knows to be descriptive of himself and which he perceives as data concerning his identity” [8].

One-dimensional construct of self-concept is strictly rejected by most of the researchers due to its inadequate explanation of behavior in a wide range of settings. Schierer & Kraut [9] suggested that self-concept is a multi-dimensional construct and they warned against generalizing the term. They stated "self-concept should not be conceptualized as a simple, unitary phenomenon, but as a complex construct having descriptive, evaluative, comparative, and affective aspects which can and should be discriminated [9].

Self-esteem: Self-esteem is defined as a positive or negative attitude toward one’s self. If a person has high self-esteem the person think she is “very good,” respects them, and believes the self is worthy. If a person has low self-esteem, the individual lacks respect for the self [10]. It is operationally defined by The Rosenberg Self-esteem Scale [11]. Self-esteem is composed of factors such as competency and worth. Competency refers to the degree to which people see themselves as capable and worthy; it depends on how valuable a person feels about himself. “According to identity theory, the self is composed of multiple identities that reflect the various social positions that an individual occupies in the larger social structure, [12].

According to Kowalski & Western [14] self -esteem refers to a person’s evaluation of him, how much he likes and respects the self [13]. Self-esteem can be viewed as the affective element of how we feel about ourselves, while one’s self-concept can be viewed as a cognitive element, referring to what we think about ourselves [14].

Andrew Hendrik [15] carried out a research on 10-year-old students in South Africa and children having scoliosis were screened using Adam’s Position and Erect Position tests. The results showed that scoliosis is more prevalent in primary schools and children who live under poorer economic conditions have a higher level of scoliosis than others [15].

David Mohr et al. [16] carried out a research examining Beck’s Depression inventory for people with multiple sclerosis. Subjects were college students with depressive disorder. The results of the research showed that people with higher level of depression are more likely to experience physical disorders like sclerosis [16].

Sapountzi-Kreplia et al. [17] carried out a research on perception of body image, happiness and satisfaction in adolescents who used Boston brace for treating scoliosis. The results of this research revealed that the group with scoliosis had a poorer perception of body image in comparison to the control group [17].

In 2003, Dagmar Reichel studied the psychological aspects of scoliosis patients. The results showed that diagnosis and treatment of idiopathic scoliosiscan have major psychological consequences for patients affected with this disease [18].

Alizadeh et al., [2] with regard to the relationship and cause and effect principle the body and spirit together, stated that sport and physical exercises on psychical or mental health is effective And also said that body ability would be to empower the spirit ability [19,20]. From other hand, investigation showed that if sport activities were done as incorrect and very high, led to sever physical damages and sport damages themselves are severe depression agent and even suicide in persons. Depression is one of the most common mental disorders that it affects on states and behavior of sport men-women (athletes) [21].

Dheera et al. [22] were done one investigation to explain consequences of vertebra rupture or fracture due to pressure, they find that, after these fracture, core pressure reduces and also one of the obvious causes of illness is between old men that led to pain, kyphosis, reduction of mobility and depression investigation importance is related to the psychical and physical aspects that they are complacent together [22].

Methodology:

The present research is descriptive and inferential statistics has been used as well. The data are collected using three questionnaires, on namely
Beck Depression Inventory self-esteem and body image male students of Islamic Azad University of Khoi branch, Statistical population 1500, students was selected by simple random sampling from statistical population. 150 student boys were selected to participate in this study. Moreover, spinal mouse system has been used to determine the degree of scoliosis, lordosis, kyphosis. We have also applied correlation coefficient and significance/insignificance in order to find the relationship between variables. The researcher has made no changes on the variables and has just measured them.

We used Pearson’s coefficient correlation in order to assess correlation and significance. The statistical analysis was done through SPSS 18, Difference was statistically significant (p<0.05).

The Rosenberg Self-Esteem Scale (RSES):

Individual self-esteem was evaluated using the Rosenberg Self-Esteem Scale (RSES). The RSES consists of ten items and is commonly used in many studies assessing self-esteem and self worth. Responses choices consist of four points from strongly agree to strongly disagree. Scores can range from 10-40. The higher the score, the higher the self-esteem, it is considered to be an reliable and valid self report scale. The test-retest reliability ranges from .82 to .88 and Cronbach’s alpha was reported at .77 to .88. A copy appears in Appendix B.

Self-concept – Marsh:

The SDQII-S is based on the Shavelson model of self-concept [23] and the multiple dimensions of self-concept defined by that model [23]. The Original extended version of this questionnaire is a well-developed instrument that accurately assesses the multiple and distinct dimensions of the self-concept in different facets of daily activity [24]. The SDQII-S is adapted from the original extended version and retains the original eleven scales, including three areas of academic self-concept, two areas of physical self-concept, three areas of relationship self-concept, and also scales for emotional stability, honesty-trustworthiness and general self-concept.

For data analysis and comparison, statistical methods Pearson correlation was used to analyze. And for the 2 groups average was compared using Fisher the statistical method.

The statistical analysis was done through SPSS.

Beck Depression Inventory:

Beck depression test is recognized as a “cultural analysis” test. In other words, it can be applied to different classes of society. Its validity has been assessed directly and indirectly and the test-retest correlation range has been calculated 0.48 to 0.9 in an interval of a few hours to a few months. Examining the reliability of Beck depression test showed that the average results of the Beck depression inventory increases with general rating of a psychologist and grading of a clinical specialist led to a significant correlation (0.56 and 0.67 in two separate analyses) [25].

Spinal Mouse:

This machine has been made in Switzerland by Dr. Carlucci with the support of IDP association. It has high validity (r=94) and is designed to measure angles and curvatures of different body parts, especially spinal column. First, subjects voluntarily filled out the questionnaires related to anxiety and depression; then, they prepared for the test of measuring the degree of scoliosis using spinal mouse in frontal standing.

Results:

After collecting the questionnaires and finding subjects’ degree of scoliosis, 150 subjects that were affected with this disease were chosen. Tables 1, 2, and 3 show the results of data analysis and assessment of research hypotheses.

Table 1: The relationship between scoliosis, lordosis and kyphosis with depression in boy’s students.

<table>
<thead>
<tr>
<th>Statistical Index Group</th>
<th>Number of Students</th>
<th>Correlation (r)</th>
<th>Significance (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression of boy Students with Scoliosis</td>
<td>150</td>
<td>-0.132</td>
<td>0.032</td>
</tr>
<tr>
<td>Depression of boy Students with Lordosis</td>
<td>150</td>
<td>0.149</td>
<td>0.111</td>
</tr>
<tr>
<td>Depression of boy Students with Kyphosis</td>
<td>150</td>
<td>0.111</td>
<td>0.211</td>
</tr>
</tbody>
</table>

Considering the calculated P (0.032, 0.100), there was no significant relationship between scoliosis and depression in athlete and non-athlete students. The negative sign of the correlation (-0.153) signifies an inverse relationship between the two variables.

Considering the calculated P (-0.925, -0.559), there was no significant relationship between scoliosis and anxiety in athlete and non-athlete students. The negative sign of the correlations (-0.21, -0.111) signifies an inverse relationship between the two variables.

Considering the calculated P (0.810), there is no significant relationship between average scoliosis and depression in athlete and non-athlete students. Also, considering the calculated P (0.436), there is no significant relationship between average scoliosis and anxiety in athlete and non-athlete students.
Table 2: The relationship between scoliosis, lordosis and kyphosis with self-esteem, in boy’s students.

<table>
<thead>
<tr>
<th>Statistical Index Group</th>
<th>Number of Students</th>
<th>Correlation (r)</th>
<th>Significance (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>self-esteem, of boy Students with Scoliosis</td>
<td>150</td>
<td>-0.221</td>
<td>0.014</td>
</tr>
<tr>
<td>self-esteem, of boy Students with Lordosis</td>
<td>150</td>
<td>0.165</td>
<td>0.021</td>
</tr>
<tr>
<td>self-esteem, of boy Students with Kyphosis</td>
<td>150</td>
<td>0.107</td>
<td>0.033</td>
</tr>
</tbody>
</table>

Table 3: The relationship between scoliosis, lordosis and kyphosis with body image, in boy’s students.

<table>
<thead>
<tr>
<th>Statistical Index Group</th>
<th>Number of Students</th>
<th>Correlation (r)</th>
<th>Significance (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body image, of boy Students with Scoliosis</td>
<td>150</td>
<td>-0.175</td>
<td>0.001</td>
</tr>
<tr>
<td>Body image, of boy Students with Lordosis</td>
<td>150</td>
<td>0.110</td>
<td>0.023</td>
</tr>
<tr>
<td>Body image, of boy Students with Kyphosis</td>
<td>150</td>
<td>0.186</td>
<td>0.009</td>
</tr>
</tbody>
</table>

Discussion:

Based on the results of the present research, there is no significant relationship between lordosis, kyphosis with depression boys students. There is significant relationship between scoliosis with depression boys students. This finding is consistent with researches of Andrew, Tons Megan, David Mohr, IK Penner, Sapountzi-Krepa et al., Stuart Weinstein, and Noonan et al., but is inconsistent with the findings of Dagmar Reichel and Juliane Schanz, which was based on studies done by Psychiatric Department of Bartlow Hospital, as well as studies of Baumgartner, Sucher, Moosburger, Engel, William et al. and Sanchez.

There is significant relationship between scoliosis, lordosis, kyphosis with depression, self-esteem and body image boys students.

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College students from the samples of this research and since they study in reputable universities of the country, they feel less depressed and anxious in comparison to the rest of the people. Moreover, athlete students participate in sports competitions and therefore have a better mental status. The degree and angle of scoliosis of the samples of this research was less than samples studied in other researches. It is obvious that severity of deformity has a negative effect on psychological aspects. Since diagnosis and treatment of scoliosis can have major psychological consequences for the patient, scoliosis is considered a risk factor for the quality of life of individuals. When a person fails in face of difficulties of life, they feel baffled and panicky and fear that they might not be able to overcome their agitated thoughts and feelings. They may even think that panic, anxiety, depression and other inconvenient feelings are symptoms of lack of mental and physical balance that may eventually wear them out. The machine used for measuring scoliosis was more precise and had higher validity than those used by other researchers. Generally, we can say that many factors can affect the results of researches such as gender, sample size, statistical population, measurement tools for questionnaires, heredity, parents’ behavior toward children, person’s body image, living conditions, education, etc. Besides, we cannot claim that psychological factors that are considered as a variable only exist during treatment; rather they will forever be with the patient. There must be more researches in relation to different statistical populations in order for us to be able to eliminate this ambiguity. Therefore, it is recommended to have systematic planning (supplying sports materials and facilities) in order to prevent and treat postural deformities and
psychological factors. We should encourage non-athlete students to have physical activities and to participate in public sports and we must use psychologists to treat individuals with severe anxiety and depression.

Inheritance, parent behavior with children, hobby image, residence place, studies and etc can affect the investigation results. Also, mental factors as variable can be in treatment process. It can not to be in all life always. One of affective factors in this research and its difference with other investigation, were gender and age of subjects. With the important effect on results. Especially in children end aged persons that they have physical and mental problems. Person's cultural and economic situation can affect on results. By to do more investigations, ambiguities is removed. Because, kyphosis is one factor can affect the investigation results. Also, mental factors can affect the investigation results. Especially in children and adolescents (Reichl, D., J. Schanz, 2003. “Developmental Psychological Aspects of Scoliosis Treatment”, Pediatric Rehabilitation, 6(3-4): 221-225).

References