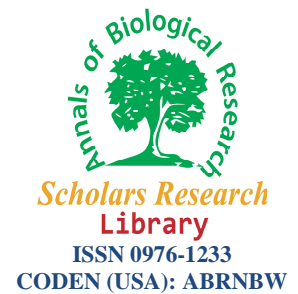




Scholars Research Library

Annals of Biological Research, 2013, 4 (10):71-74
(<http://scholarsresearchlibrary.com/archive.html>)



To determine the correlation between postural deficiencies and severity of depression in 15-18 years old kyphotic girls in high schools of Iran

Maryam Saligheh^{*1}, Alireza Rahimi² and Yahya Sokhanguyi³

¹Faculty of Health sciences, Curtin University, Western Australia, Australia

²Faculty of Physical Education and Sport Science, Karaj Branch, Islamic Azad University, Karaj, Iran

³Faculty of Occupational Therapy, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran

ABSTRACT

The purpose of this research was to determine the correlation between posture deformity and severity of depression in 15-18 years old kyphotic females. 150 kyphotic secondary students were recruited in city of Karaj in Iran during 2007 to 2008. The study was descriptive and the sample size was calculated by using random- cluster sampling method. The posture was assessed by using Plumb line and flexicurve ruler to address the presence of any thoracic kyphosis; the Aaron Beck standard questionnaire was administered to determine the severity of depression. Descriptive statistics were reported, and inferential statistics in the form of multiple regressions were conducted, Pearson's correlation coefficient was used to analyze the findings; the results demonstrate that 81% of the participants who were diagnosed as to be clinically depressed according the Aaron Beck standard questionnaire were diagnosed as to be kyphotic.

Key words: Kyphosis; Depression; Posture; Teenagers

INTRODUCTION

Presence of any physical deformity may affect individual's mental health and may cause deficiency of behaviour due to feeling discontent about one's physical appearance [2]. In addition, it is suggested that condition such as kyphosis can affect person's life both mentally and physically [3] and this may cause physical and emotional limitations [4, 5]. It is discussed that individuals with chronic physical conditions such as scoliosis/kyphosis are more at risk of developing depression in comparison to the general population [6, 7]. A study by Lofland et al., [8] showed that participants who reported chronic back pain were experiencing some degree of depression and findings showed that following a tailored program the level of depression was lessened as well as the severity of chronic back pain. This has shown a vice versa effect and studies have proven that psychological disorder particularly depression are the main cause of muscle weakness and physical deformities and abnormalities, [16] predominantly anxiety and depression increase the likelihood of having a higher muscle tenderness score [9]. Although the results are intriguing in that they raise the possibility of mental health disorder in chronic physical condition [7] participant were mostly adults and elderly people [7, 11] and findings are contradictory in regards to the correlation between postural image and mental well-being. For instance, a study by Noonan et al., [17] on 95 adult female patients with postural deficiency showed there is not any significant correlation between body image and mental health status.

A study on 190 athlete adult male students indicated that there is not any significant correlation between the presence of kyphosis and severity of depression [19] this has been further addressed by a similar study that presented the relationship between mental disorder and postural deformity [20].

On the other hand a study by Payne et al., [18] examining the psychological aspect of coping with postural deficiency (scoliosis) on 685 adolescents female and male showed those who had scoliosis were more likely to feel unhealthy; the same study reported that females with postural deficiency are more likely to be mentally ill than males [18]. Contradiction in findings exists; in addition participants are reported to be adolescents and adults in the mentioned studies and there has not been any published report in kyphotic teenage girls' population in regards to the correlation between postural deficiency and mental health status. Overall, there is deficient information in regards to one's postural deficiency and the presence of depression [7]. Therefore this research main objective is to determine the correlation between the kyphotic postures with severity of depression in 15-18 years old girls. Thus regarding the mentioned issue the following question presented, is there any correlation between postural deficiency (kyphosis) and depression in 15- 18 years old kyphotic teenage girls?

This study consists of the following sections: Materials and Methods which describes the study design, data collection process, and measurement tools; Results and Discussions which show the data analysis and compare the current research findings with previous research; and Conclusion which depicts future research direction.

MATERIALS AND METHODS

This study was approved by the ethical committee and prior to commencing the study informed consent was obtained. The data collection procedure commenced in September 2007 and was completed in February 2008; the research design was descriptive, this method was chosen in order to show the correlation between presence of kyphosis and severity of depression; in addition descriptive statistical index used for calculating mean standard deviation and tables design. A number of 650 female students aged 15 to 18 years old were recruited from 10 participated high schools in city of Karaj. Subsequently, during this time frame a sample of 150 kyphotic students were diagnosed through standardized measurement tools throughout the 10 participated schools. Upon completion of postural assessment the Aaron Beck Inventory Scale was distributed to subjects who were diagnosed as to be kyphotic in order to assess the severity of depression.

The study variables are measured to be severity of depression and presence of kyphosis. Data analysis was performed using SPSS software and test significant level considered $p < 0.05$.

Following measurement tools were used to conduct the study:

A Plumb line was used to assess posture, in fact it demonstrates the presence of mild to moderate deformity when the significant portion of thoracic spine stands behind the line; the existence of any mild to moderate change; the presence of thoracic spine kyphosis was assessed using a flexicurve ruler; in addition to assess the severity of depression, the Aaron Beck Inventory Scale [14] was used.

The Aaron Beck Inventory Scale is designed to assess the severity of Depression [14] it consists of twenty one multiplied questions with total score ranks from 0 to 63; a value of 0-3 is assigned for each question, 0 as not feeling sad to 3 as feeling very sad. The final score of 0-63 will be classified in one of the following six categories: the score of 0-9 specifies minimal depression, the score of 10-18 indicates mild depression, score 19-29 demonstrates moderate depression, and finally a score between 30-63 indicates severe depression.

RESULTS AND DISCUSSION

Descriptive statistics were reported to address the correlation between posture deficiency and severity of depression, SPSS 17 was used to analyse the data and inferential statistics in the form of multiple regressions were conducted. The study findings show that there is a correlation between the presence of postural deficiency and severity of depression; specifically 81% of kyphotic girls represent mild depression and 8% experience severe depression. Our results show that the findings of the current research is consistent with previous findings [2,3,7,8,18] however it is in contrary with Takahashi et al. findings [11] and the difference could be the age of participants or ethnical background. In addition, contradiction exists with a study by Noonan et al., [17] which showed the lack of significant correlation between body image and mental well-being. Our result is not associated with Yasrobi's

findings [20]; in addition it is in contradiction with Asghari & Imanzadeh's study result [19] this could be due to gender and age differences of participants.

Table 1: Index of dispersion and central tendency 'degree of kyphosis'

Index	Average	Standard deviation	Minimum	Maximum	Range
Kyphosis angle	34.2 degree	7.77 degree	15.75 degree	59.99 degree	44.24 degree

Table 1 shows the average of kyphosis angle was 34.2 degree

Table 2: Index of dispersion and central tendency of participants' depression score

Index	Average	Standard deviation	Minimum	Maximum	range
Depression score	17.23%	8.2%	4%	48%	44%

Table 2 shows that the average rate of depression in subjects was 17.23%

Table 3: frequency and depression level percentage in participants

Depression level	Normal depression	Mild depression	Moderate depression	Moderate-severe depression	Severe depression
frequency	23	40	19	28	10
percentage	19.2	33.3	15.8	23.3	8.3

Table 3 shows that 19.2% of girls have normal depression while, 8.3% have severe depression. 33.3% have mild depression, 15.8% have moderate depression and 23.3% have moderate-severe depression

CONCLUSION

The findings of this study demonstrate that mental health of individuals could be affected by postural deformities this could be further vary according to socio-demographic factors such as age, gender, and ethnicity. Findings of this study warrant future research into the importance of prevention and relevant interventions to decrease this effect and to minimise the consequences of mental health disorders. In addition, it is recommended that a long-term approach could be of an advantage to further address the social support, parental support and how these factors may contribute in a positive way to lessen the severity of mental disorders such as depression and anxiety. Furthermore a study on a younger sample of females who are in upper primary school could be considered as a preventive approach and lead to more comprehensive results. Also it could be of a high importance to educate children in regards to their body image in earlier stages prior to be in conflict with ones' appearance and to prevent from developing mental health disorders.

REFERENCES

- [1] S Adam. *Journal of American Family Physicians*, **2005**, 71, 1327-1336.
- [2] TP Castelnuovo. *American Journal of Psychiatry*, **1992**, 149-718.
- [3] N Babekir; A Crawford; A Durrani. *The Spine Journal*. **2007**, 7, 1s-163s.
- [4] J Leech; C Dulberg; S Kellie. *Journal of American Review of Respiratory Disease*. **1990**, 141, 68-71
- [5] S Ryan; L Fried. *Journal of American Geriatrics Society*. **1997**, 45, 1479-1486.
- [6] C Somnath. Depression eclipses other chronic disease for poor health status, **2007**
- [7] M Borgini. Deformity, depression and disability, The Chain of Events that Must Be Broken, **2007**
- [8] KR Lofland; JW Burns; J Tsoutsouris; MM Laird; ER Blonsky; WF Henja. *International Journal of Rehabilitation and Health*, **1994**. 3, 4, 221-232.
- [9] F Mongini; G Ciccone; M Ceccarelli; I Baldi; L Ferrero. *The Journal of the International Association for the Study of Pain*, **2007**, 131, 106-111.
- [10] M Sinaki; JW Rogers; EJ Bergstralh; HW Wahner. *American Journal of Physical Medicine and Rehabilitation*, **1996**, 75, 370-374.
- [11] T Takahashi; I Kenji; H Daisuk; N Yasunori; O Kiyoto; N Masonori; M Kozo; D Yoshinori; T Toshikaza; Y Hiroshi. *Osteoporosis International*, **2005**, 16, 273-279.
- [12] M Adams; J Adams. *Journal of Child and Psychiatry*, **1991**, 32, 811-820.
- [13] R Chow; J Harrison. *American Journal of Physical Medicine*, **1987**, 66, 219-227.

- [14] AT Beck; Depression: Causes and Treatment, University of Pennsylvania Press Philadelphia, **1967**.
- [15] N Hendry. *Journal of Bone Joint Surgery*, **1958**, 40, 132-144.
- [16] A Saquil. *American Family Physician*, **2005**, 71, 7, 1327-1336.
- [17] K Noonan; L Dolan; W Jacobson. *Journal of Pediatric Orthopedic*, **1997**, 17, 712-717.
- [18] W Payne; J Ogilvie; M Resnick. *Spine*, **1997**, 22, 1380-1384.
- [19] Asghari A; Imanzadeh M. *World Applied Science journal*, **2009**, 10, 1311-1316.
- [20] MA Yasrobi. Relationship between thoracic kyphosis and mental aspect in male students, University of Tehran, **1999**.