CAN CLINICAL OUTCOME MEASURES PREDICT COBB'S ANGLE IN PATIENTS WITH IDIOPATHIC SCOLIOSIS?

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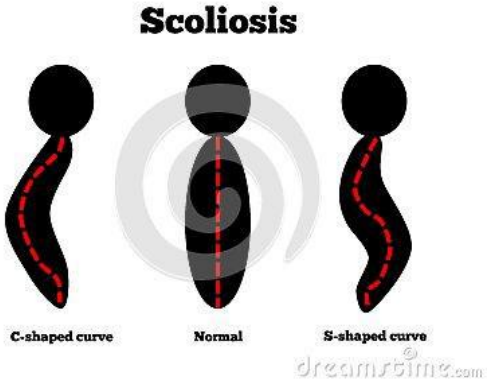
INTRODUCTION

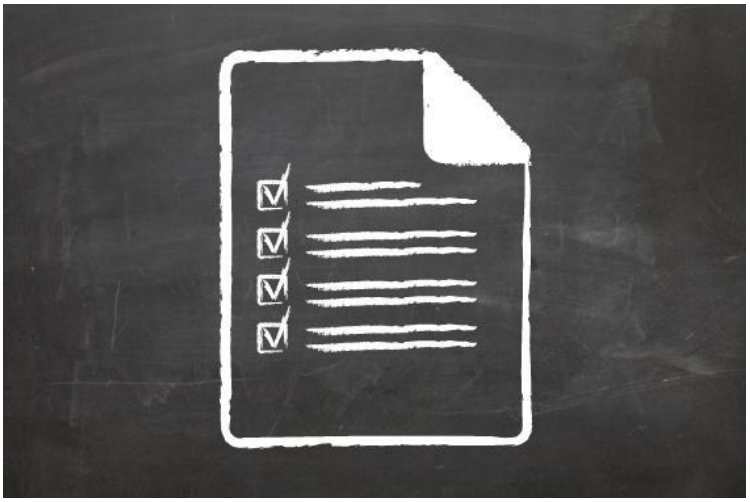


Idiopathic scoliosis is a common deformity that is associated with high morbidity rates. Neglect or improper treatment eventually leads to progression of the deformity, and subsequently, may distress patients and affect the quality of their lives.

Clinical outcome measures are popular tools to quantify the quality of life of patients which is affected clearly in patients with Idiopathic scoliosis can vary between back pain ,decreased pulmonary function, poor aerobic capacity, physical inactivity and limitations in the patients' functional and vocational life ; especially with severe deformity. Also a weak self image, affection of mental health, depression and a poor social life that is more evident in female patients and those treated with braces or corrective surgery.

There is a contradiction whether radiographic findings and clinical outcome measures are associated. Furthermore, it is not clear how much could clinical outcome measures predict radiographic findings, specifically cobb's angle that represent the severity of scoliosis.

The purpose of this study was to assess whether clinical outcome measures, specifically, the Scoliosis Research Society-22 (SRS-22) questionnaire, could predict the Cobb's angle in Egyptian patients with idiopathic scoliosis.

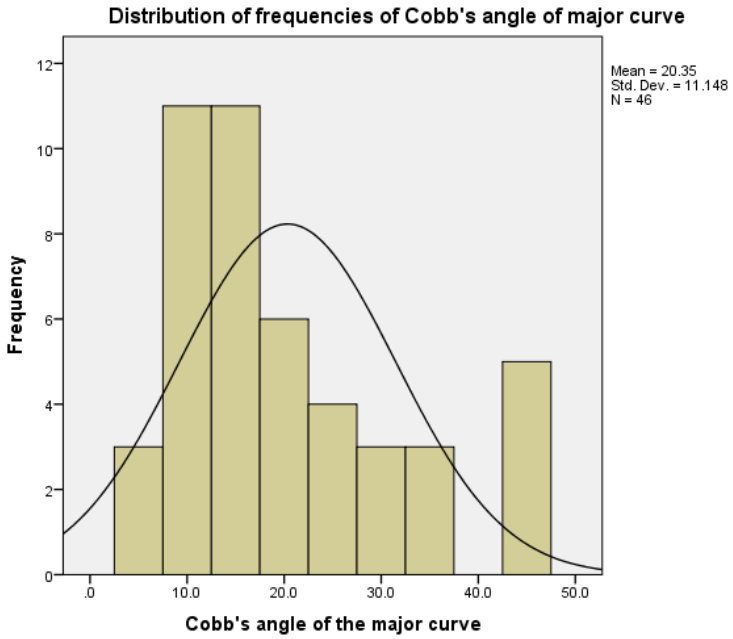


MATERIALSAND METHODS

Forty six patients with idiopathic scoliosis (40 females,6 males) were enrolled in this study. Participants mean age was 22±3.14 years and mean Cobb's angle was $20^0 \pm 11^0$ (range 5^0- 44^0). Twenty-three patients were on active physiotherapy treatment, 5 were treated by bracing, 2 underwent surgery and the remaining received a wait-and see treatment approach.

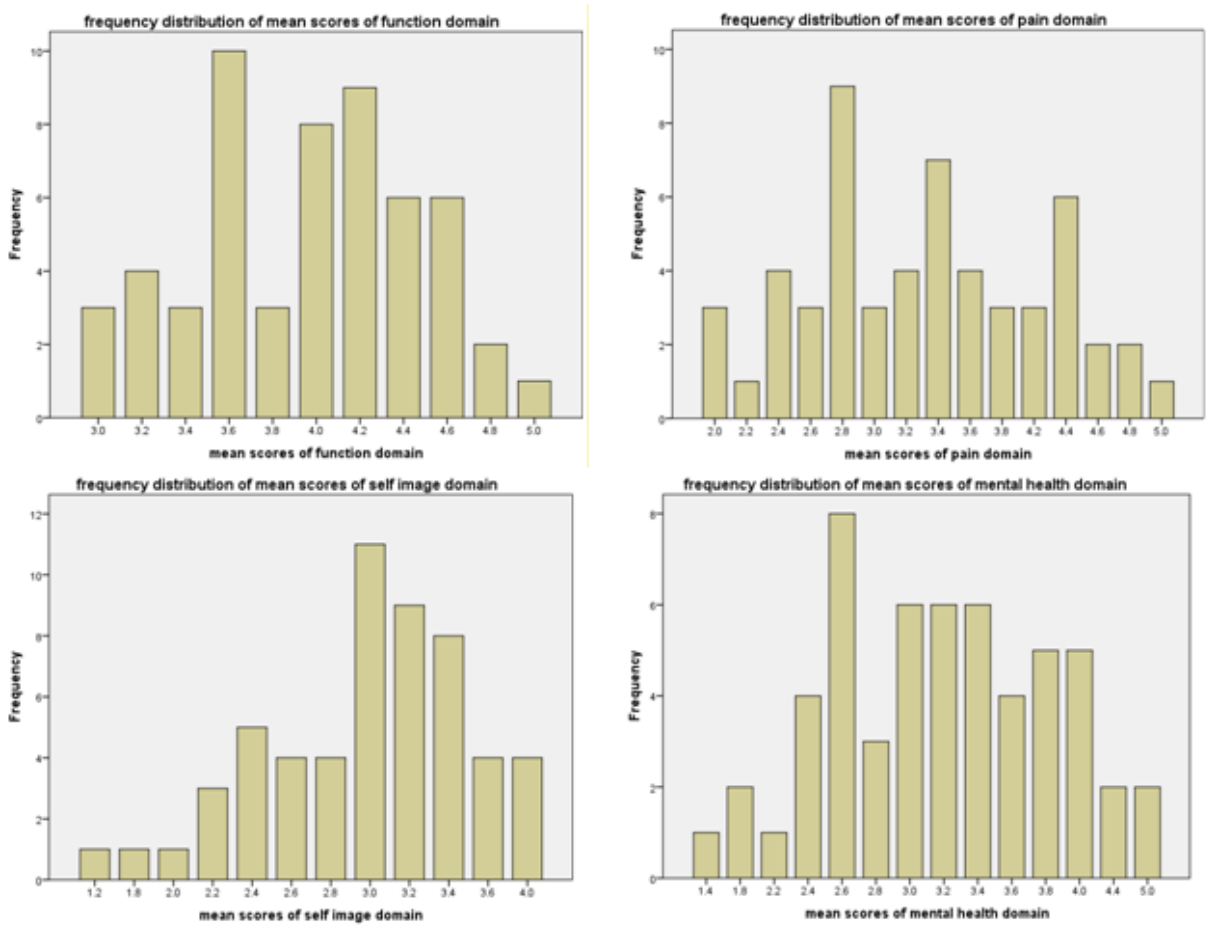
Patients were asked to fill in an Arabic cross-culture translated form of (SRS-22). This is a valid and reliable clinical outcome measure to assess the quality of life inpatients with idiopathic scoliosis. The questionnaire administered consists of five sub-domains inquiring about function, pain, self-image, and mental health, and satisfaction with management.

The mean scores for the first four sub-domains were calculated and used for further statistical analysis. Regression model analysis using the step wise method was used to assess the predictability of Cobb's angle by the SRS-22 sub-domains scores.



RESULTS

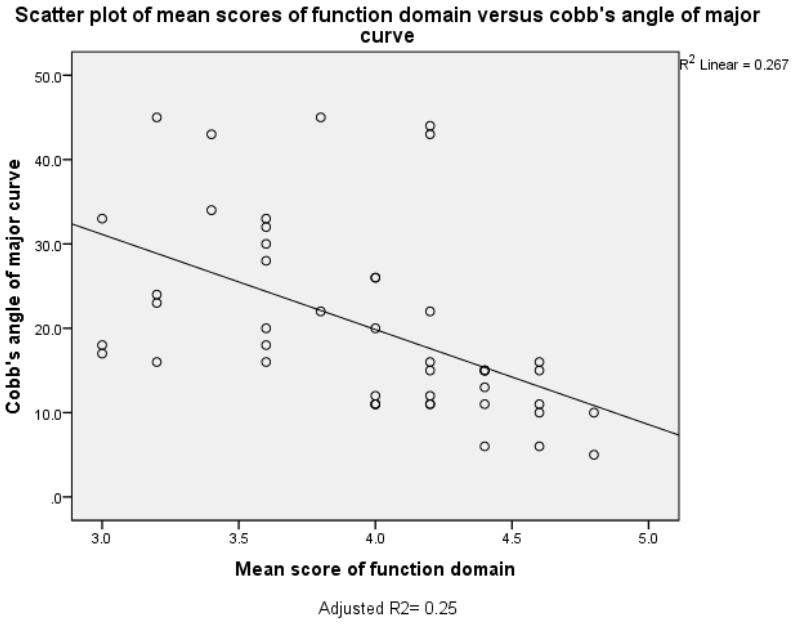
The mean scores of the function, pain, self-image and mental health domains provided a wide normal spectrum of score distributions.



Among the four domains tested, only function domain significantly predicted the Cobb's angle ($p<0.001$) and explained 25% of the variability seen (adjusted $R2=0.25$).

The results showed an inverse correlation between the mean functions core and the Cobb's angle. This implies that greater Cobb's angle was associated with less functional scores. Based on the current results,

Cobb's angle regression equation is
(Cobb's angle = 64.95–11.27×mean function score).



DISCUSSION AND CONCLUSION

According to the data in this study, there was no association between pain, self-image, mental health domains and the degree of severity of curve measured by cobb's angle.

This may be attributed to the patient's perception of what constitutes the quality of lifestyle affection and that is more dependent on variables such as personality, environment, educational and professional abilities, and individual expectations on treatment results.

The correlation between function domain and the severity of curve signifies that function domain of SRS-22 is a significant predictor that can explain 25% of the variability seen in Cobb's angle of patients with idiopathic scoliosis.

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