

The Impact of Spinal Deformities on Quality of Life: A Cross-Sectional Survey in Patients with Scoliosis in Saudi Arabia

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ABSTRACT

Scoliosis is a chronic musculoskeletal condition characterized by three-dimensional spinal deformity that has functional and psychosocial consequences. It is associated with physical limitations, and impaired body image, all of which contribute to diminished health-related quality of life (QoL). Investigating these outcomes is essential to inform patient-centered management strategies. This study aimed to evaluate QoL among patients with scoliosis in Saudi Arabia and to examine the relationship between deformity severity and patient-reported outcomes. We conducted a cross-sectional study among patients aged ≥ 10 years with radiographically confirmed idiopathic scoliosis (Cobb angle $\geq 10^\circ$) attending tertiary hospitals and spine clinics in Saudi Arabia. Exclusion criteria included secondary scoliosis, unrelated spinal surgery, or chronic debilitating illness. Stratified sampling was applied. Data were collected using the validated Arabic version of the Scoliosis Research Society-22 (SRS-22) questionnaire, covering five domains: function, pain, self-image, mental health, and satisfaction. Descriptive statistics, correlation analysis, and linear regression were performed using SPSS v26. A p-value < 0.05 was considered significant. The pain subscale yielded a mean of 2.4 ± 0.9 , while self-image (3.1 ± 0.7), function (3.0 ± 0.5), and mental health (3.0 ± 0.4) showed higher values. Satisfaction recorded the highest scores (3.5 ± 1.3). The overall mean QoL score was 2.9 ± 0.2 . Regression analysis demonstrated that higher pain severity significantly reduced QoL ($\beta = -0.15$, $p < 0.001$), while greater function/mobility improved QoL ($\beta = 0.11$, $p = 0.014$). Strong correlations were observed between self-image and satisfaction ($r = 0.77$), and inverse correlations between satisfaction and pain ($r = -0.66$). Pain correlated positively with mental health ($r = 0.52$). Patients with scoliosis experience reduced QoL, with pain and self-image having the strongest influence on outcomes. Satisfaction was closely linked to both pain and body image, emphasizing the psychosocial burden of scoliosis. Early, multidisciplinary interventions targeting both physical and psychosocial domains are essential to improve overall QoL in scoliosis patients.

Keywords: *Scoliosis; Quality of life; SRS-22; Pain; Self-image; Psychosocial impact; Saudi Arabia*

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