

Association between self-esteem and clinical and functional variables in patients with systemic sclerosis

Associação entre autoestima e variáveis clínicas e funcionais em pacientes com esclerose sistêmica

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Abstract

Aim: We aimed to evaluate relationships between self-esteem and clinical variables, body image, anxiety and depressive symptoms, disability, and quality of life in patients with systemic sclerosis (SSc). **Methods:** This cross-sectional study recruited 30 patients with SSc from a tertiary care university hospital. Patients responded to specific questionnaires regarding self-esteem, perception of body image, anxiety and depressive symptoms, disability, and quality of life. Demographic and clinical data were collected from medical records. Mann–Whitney U test compared medians while Spearman’s correlation coefficient was verified relationships between two continuous variables. Correlations (R) were considered weak ($0 < R \leq 0.35$), moderate ($0.35 < R \leq 0.67$), or strong ($0.67 < R \leq 1$). Significance was set at $P < 0.05$. **Results:** We found no differences in self-esteem (Rosemberg scale) between patients with diffuse and limited SSc and no association with age or disease duration. However, significant correlations were observed between self-esteem and perception of body image ($R = 0.52$; $p = 0.0035$), quality of life ($R = 0.80$; $p < 0.0001$), disability ($R = - 0.58$; $p = 0.0007$), anxiety ($R = - 0.60$; $p = 0.0004$), and depressive symptoms ($R = - 0.61$; $p = 0.0003$). **Conclusions:** Self-esteem is strongly associated with body dissatisfaction, depression and anxiety symptoms, poor quality of life, and high disability in patients with SSc and must be considered during clinical assessment.

Keywords: Self concept; Scleroderma, Systemic; Body representation; Quality-adjusted life years; Mental disorders.

Resumo

Objetivo: Nosso objetivo foi avaliar as relações entre autoestima e variáveis clínicas, imagem corporal, sintomas ansiosos e depressivos, incapacidade e qualidade de vida em pacientes com esclerose sistêmica (ES). **Métodos:** Este estudo transversal recrutou 30 pacientes com ES de um hospital universitário. Os pacientes responderam a questionários específicos sobre autoestima, percepção da imagem corporal, ansiedade e sintomas depressivos, incapacidade e qualidade de vida. Os dados demográficos e clínicos foram coletados dos prontuários médicos. O teste U de Mann-Whitney comparou medianas enquanto o coeficiente de correlação de Spearman verificou relações entre duas variáveis contínuas. As correlações (R) foram consideradas fracas ($0 < R \leq 0,35$), moderadas ($0,35 < R \leq 0,67$) ou fortes ($0,67 < R \leq 1$). A significância foi fixada em $P < 0,05$. **Resultados:** Não encontramos diferenças na autoestima (escala de Rosemberg) entre pacientes com ES difusa e limitada e nenhuma associação com idade ou duração da doença. No entanto, foram observadas correlações significativas entre autoestima e percepção da imagem corporal ($R = 0,52$; $p = 0,0035$), qualidade de vida ($R = 0,80$; $p < 0,0001$), incapacidade ($R = - 0,58$; $p = 0,0007$), ansiedade ($R = - 0,60$; $p = 0,0004$) e sintomas depressivos ($R = - 0,61$; $p = 0,0003$). **Conclusões:** A autoestima está

fortemente associada à insatisfação corporal, sintomas de depressão e ansiedade, má qualidade de vida e alta incapacidade em pacientes com ES e deve ser considerada durante a avaliação clínica.

Palavras-chave: Autoimagem; Esclerose sistêmica; Imagem corporal; Anos de vida ajustados por qualidade de vida; Transtornos mentais.

Resumen

Objetivo: Nuestro objetivo fue evaluar las relaciones entre autoestima y variables clínicas, imagen corporal, ansiedad y síntomas depresivos, discapacidad y calidad de vida en pacientes con esclerosis sistémica (ESc). **Métodos:** Este estudio transversal reclutó a 30 pacientes con SSc de un hospital universitario de atención terciaria. Los pacientes respondieron cuestionarios específicos sobre autoestima, percepción de la imagen corporal, síntomas de ansiedad y depresión, discapacidad y calidad de vida. Los datos demográficos y clínicos se recogieron de las historias clínicas. La prueba U de Mann-Whitney comparó las medianas, mientras que el coeficiente de correlación de Spearman verificó las relaciones entre dos variables continuas. Las correlaciones (R) se consideraron débiles ($0 < R \leq 0,35$), moderadas ($0,35 < R \leq 0,67$) o fuertes ($0,67 < R \leq 1$). La significación se fijó en $P < 0,05$. **Resultados:** No encontramos diferencias en la autoestima (escala de Rosemberg) entre pacientes con ES difusa y limitada, ni asociación con la edad o la duración de la enfermedad. Sin embargo, se observaron correlaciones significativas entre autoestima y percepción de la imagen corporal ($R= 0,52$; $p= 0,0035$), calidad de vida ($R= 0,80$; $p < 0,0001$), discapacidad ($R= - 0,58$; $p= 0,0007$), ansiedad ($R= - 0,60$; $p= 0,0004$), y síntomas depresivos ($R= - 0,61$; $p= 0,0003$). **Conclusiones:** La autoestima está fuertemente asociada con la insatisfacción corporal, síntomas de depresión y ansiedad, mala calidad de vida y alta discapacidad en pacientes con SSc y debe ser considerada durante la evaluación clínica.

Palabras clave: Autoconcepto; Esclerodermia sistémica; Representación corporal; Años de vida ajustados por calidad de vida; Trastornos mentales.

1. Introduction

Systemic sclerosis (SSc) is a multisystem connective tissue disease of unknown etiology characterized by progressive fibrosis of skin and internal organs. It is also associated with vascular changes, inflammatory and autoimmune processes, and severe clinical manifestations. Most SSc studies focus on diagnosing and managing physical manifestations of the disease, neglecting the effects of illness and treatment on identity, relationships, functionality, and mental health of the patient. (Barsotti et al., 2016; Kowal-Bielecka et al., 2017)

Physicians often prioritize serious and potentially fatal manifestations when managing patients with SSc. However, other symptoms directly impacting quality of life may be more valued by patients (e.g., fatigue, joint pain, sleep problems, and psychological changes) (Bassel et al., 2011). Progressive skin fibrosis and vascular impairment may significantly change physical appearance, especially in visible and socially relevant body parts (e.g., face and hands), cause dissatisfaction with appearance, affect social relationships, trigger anxiety and depressive symptoms, and decrease quality of life. (Barnabe et al., 2012; Benrud-Larson et al., 2003; Del Rosso et al., 2013b).

Considering the impact of physical and psychological manifestations of SSc, self-esteem of patients may be compromised, hindering disease management and coping. Thus, we aimed to evaluate associations between self-esteem and clinical manifestations, body image, anxiety and depressive symptoms, disability, and quality of life in patients with SSc.

2. Methodology

2.1 Study population

Our cross-sectional study included 30 patients with SSc from a tertiary care university hospital. Participants were outpatients aged 18 years or more and matching the 2013 ACR/EULAR (American College of Rheumatology/European League Against Rheumatism Collaborative Initiative) criteria for SSc (Van Den Hoogen et al., 2013). Patients with overlap syndrome, SSc sine scleroderma, and localized scleroderma were excluded. All patients read and signed the informed consent form.

2.2 Measurements

Patients were interviewed using specific questionnaires to assess self-esteem, perception of body image, anxiety and depressive symptoms, disability, and quality of life. Demographic and clinical data were collected from medical records. SSc patients were classified into diffuse cutaneous systemic sclerosis and limited cutaneous systemic sclerosis. Disease duration was defined as the time from onset of the first non-Raynaud manifestation of SSc.

2.3 Self-esteem assessment

Self-esteem was assessed using the Rosenberg self-esteem scale. It comprises ten items related to feelings of self-esteem and self-acceptance responded using a four-point Likert scale. Low scores indicated low self-esteem (Dini et al., 2004).

2.4 Body image perception

Body image perception was assessed by Brief-Satisfaction with Appearance Scale (Brief-SWAP). Brief-SWAP is a six-item questionnaire that contains two subscales: dissatisfaction with appearance, reflecting dissatisfaction with body areas relevant to patients with SSc (e.g., face, hands, and arms); and social discomfort, related to disease-related aesthetic changes. Patients rated thoughts and feelings on a seven-point scale ranging from zero (strongly disagree) to six (strongly agree); high scores indicated more dissatisfaction or social discomfort (Jewett et al., 2012).

2.4 Anxiety and depressive symptoms

Anxiety and depressive symptoms were assessed using the Hospital Anxiety and Depression Scale (HADS). For each subscale (i.e., HADS-anxiety and HADS-depression), seven questions were answered using a score from zero (not at all) to three (most of the time) (Botega et al., 1995; Leite & Maia, 2013).

2.5 Functional disability

The Scleroderma Health Assessment Questionnaire (SHAQ) assessed functional disability. It consisted of 20 items distributed in eight domains, with five additional domains using visual analog scales specific for SSc symptoms (e.g., Raynaud's phenomenon, digital ulcers, gastrointestinal and pulmonary symptoms, and overall assessment of SSc severity). Final score ranged from zero to three; high scores indicated high disability (Orlandi et al., 2014; Rannou et al., 2007).

2.6 Quality of life

Quality of life was assessed using the 12-Item Short-Form Health Survey (SF-12). SF-12 analyzes functional capacity, pain, general health, vitality, mental health, and physical, social, and emotional aspects. Results were presented in two domains: physical component summary (PCS) and mental component summary (MCS). Scores ranged from 0 to 100, and high scores represented better quality of life (Andrade et al., 2007).

2.7 Statistical analysis

GraphPad Prism 9.1.0 (GraphPad Software Inc., San Diego, CA) was used for statistical analyses. Data were expressed as mean \pm standard deviation or median and interquartile range. Mann-Whitney U test compared medians, and Spearman's correlation coefficient analyzed correlations between two continuous variables. Strength of correlations (R) was considered weak ($0 < R \leq 0.35$), moderate ($0.35 < R \leq 0.67$), or strong ($0.67 < R \leq 1$). Significance was set at $p < 0.05$.

3. Results

Table 1. Demographic and clinical characteristics of patients with systemic sclerosis (n = 30).

| Samples | Mean (± SD) |
|---|--------------------|
| Age (years) mean (± SD) | 50.38 (± 13.31) |
| Female sex n (%) | 27 (90.0) |
| Disease duration (months) mean (± SD) | 135.82 (± 95.98) |
| Clinical subset n (%) | |
| Cutaneous limited | 21 (70.0) |
| Cutaneous diffuse | 9 (30.0) |
| Clinical manifestations n (%) | |
| Raynaud's phenomenon | 27 (90.0) |
| Interstitial lung disease | 20 (66.67) |
| Esophageal dysmotility | 20 (66.67) |
| Digital ulcers | 14 (46.67) |
| Myopathy | 7 (23.33) |
| Pulmonary arterial hypertension | 6 (20.0) |
| Arthritis | 4 (13.33) |
| Telangiectasias | 3 (10.0) |
| Calcinosis | 2 (6.67) |
| Renal crisis | 2 (6.67) |
| SF-12 PCS mean (± SD) | 36.1 (± 9.9) |
| SF-12 MCS mean (± SD) | 41.7 (± 12.6) |
| SHAQ mean (± SD) | 0.83 (± 0.5) |
| HADS-Depression | 6.5 (± 3.9) |
| HADS-Anxiety | 7.9 (± 4.6) |
| Brief-SWAP Dissatisfaction with appearance mean (± SD) | 12.1 (± 4.6) |
| Brief-SWAP Social Discomfort mean (± SD) | 11.6 (± 5.4) |
| Rosenberg self-esteem scale mean (± SD) | 23.0 (± 4.6) |

HADS = Hospital Anxiety and Depression Scale; MCS = Mental component summary; PCS = Physical component summary; SD = standard deviation; SF-12 = 12-Item Short-Form Health Survey; SHAQ = Scleroderma Health Assessment Questionnaire; Brief-SWAP = Brief-Satisfaction with Appearance Scale. Source: Authors (2022).

No differences were found in Rosenberg self-esteem scale scores between patients with diffuse and limited SSc. Also, no associations were found between self-esteem and age or disease duration. However, significant correlations were observed between perception of body image, quality of life, disability, and anxiety and depressive symptoms (Table 2).

Table 2. Correlations between self-esteem and body image, quality of life, disability, anxiety, and depression in patients with systemic sclerosis (n = 30).

| | Rosenberg self-esteem scale | | |
|--|------------------------------------|------------------|----------|
| | R | 95% CI | P |
| Brief-SWAP Dissatisfaction with appearance | 0.52 | 0.18 to 0.74 | 0.0035 |
| Brief-SWAP Social discomfort | - 0.40 | - 0.67 to - 0.03 | 0.0294 |
| HADS-Depression | - 0.61 | - 0.80 to - 0.31 | 0.0003 |
| HADS-Anxiety | - 0.60 | - 0.79 to - 0.30 | 0.0004 |
| SF-12 PCS | 0.45 | 0.09 to 0.70 | 0.0135 |
| SF-12 MCS | 0.80 | 0.60 to 0.90 | < 0.0001 |
| SHAQ | - 0.58 | - 0.78 to - 0.27 | 0.0007 |

HADS = Hospital Anxiety and Depression Scale; MCS = Mental component summary; PCS = Physical component summary; SF-12 = 12-Item Short-Form Health Survey; SHAQ = Scleroderma Health Assessment Questionnaire; Brief-SWAP = Brief-Satisfaction with Appearance Scale. Source: Authors (2022).

4. Discussion

The present study showed associations between self-esteem and body image, anxiety and depressive symptoms, disability, and quality of life in patients with SSc. Self-esteem is the self-perception of abilities and general qualities that influence cognitive behaviors and quality of life. Regarding chronic diseases, such as asthma and rheumatoid arthritis, low self-esteem is associated with negative affect, less positive affect, and stress and symptom severity (Juth et al., 2008).

Patients with SSc showed a mean score of 23.0 ± 4.6 points on the Rosenberg self-esteem scale, corroborating Del Rosso et al., who found a mean of 21.3 points in a cohort of 119 patients with SSc (Del Rosso et al., 2013a). Regarding other cutaneous disorders, self-esteem scores of patients with SSc were similar to those described in individuals with psoriasis (Brihan et al., 2020) and worse than facial burn survivors (Hoogewerf et al., 2014).

Self-esteem showed an important association with body image concerns. We observed a moderate positive correlation between self-esteem and dissatisfaction with appearance and a weak negative correlation between self-esteem and social discomfort. Farhat et al. observed patients with SSc presented better perception of physical changes than healthy individuals; this condition was also correlated with dissatisfaction with appearance (Farhat et al., 2021). Jewett et al. evaluated 489 patients in 15 Canadian reference centers and found mean scores of 8.4 and 5.1 for dissatisfaction with appearance and social discomfort, respectively (Jewett et al., 2012), demonstrating better results than those found in our population. In this same study, authors observed that the extent of skin and facial involvement were associated with social discomfort and dissatisfaction with appearance. Moreover, hand contractures were associated with dissatisfaction with appearance, while presence of telangiectasia associated with social discomfort (Jewett et al., 2012).

The prevalence of anxiety (from 50 to 65%) and depression (45 to 60%) is high in patients with SSc. Factors such as fatigue, pain, social support, emotion-focused coping, helplessness, and fear of disease progression seem to be associated with onset of depressive symptoms in patients with SSc (Kwakkenbos et al., 2012). We found a negative correlation between anxiety and depressive symptoms and self-esteem, similar to Del Rosso et al. (Del Rosso et al., 2013a; Kwakkenbos et al., 2012), and a direct association between self-esteem and quality of life (especially in SF-12 MCS) and disability. Bongi et al. proposed a model to explain mental impairment related to quality of life, as low self-esteem impairs quality of life and may lead to anxiety (Maddali Bongi et al., 2015).

One study limitation was the inability to establish a causal relationship due to the study design. Longitudinal studies could identify which factors would predict the evaluated variables, mainly self-esteem. Therefore, this study may be a starting point since few studies assessed self-esteem in patients with SSc, even though it affects body image.

5. Conclusion

Clinical complications and psychological and functional factors are strongly associated with SSc; therefore, interventions for improving physical and mental health must be considered in patients with SSc. Multidisciplinary care may improve quality of life of patients with SSc.

In conclusion, self-esteem must be considered during clinical assessment of SSc. Furthermore, low self-esteem is strongly associated with dissatisfaction with appearance, depression and anxiety symptoms, quality of life, and disability.

One study limitation was the inability to establish a causal relationship due to the study design. Longitudinal studies could identify which factors would predict the evaluated variables, mainly self-esteem. Therefore, this study may be a starting point since few studies assessed self-esteem in patients with SSc, even though it affects body image.

Compliance with ethical standards

The study was approved by the research ethics committee of the Federal University of Pernambuco (CEP/CCS/UFPE 529/11) according to the Declaration of Helsinki. All participants signed the informed consent form.

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