Convergent validity of the English translation of the ISYQOL scale (Italian Spine Youth Quality-of-Life) in relation to other Self-Image Questionnaires for Adolescents with Idiopathic Scoliosis

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Introduction: Quality of life tools for adolescent idiopathic scoliosis (AIS) present issues. The SRS-22 was developed for surgical care and shows high ceiling effects in conservative care. The SAQ asks patients to express how they look from behind which they cannot see. New tools were proposed recently. The ISYQOL scale (Italian Spine Youth Quality-of-Life) was developed in Italy as a unidimensional quality of life scale based on concerns expressed by patients and showed good psychometric properties. We recently translated the ISYQOL to English. The Trunk Anterior Asymmetry Scoliosis Questionnaire (TAASQ) appraises anterior appearance. The Body Image Disturbance Questionnaire measures body image disturbance in general and was recently adapted for scoliosis (BIDQS).

Objective: Our objective was to determine the convergent validity of the new tools (ISYQOL, BIDQS, TAASQ).

Methods: Eighty-seven consecutive volunteer females with AIS aged 10 to 18 years were recruited from a scoliosis clinic. Five questionnaires were computer-administered using REDCAP prior to specialist consult. These included three new tools: the English ISYQOL (one continuous scale), the BIDQS (one domain), and the TAASQ (8 domains).(Table) New tools were compared to established questionnaires: Scoliosis Research Society-22 (SRS-22r; 5 domains), and Spinal Appearance Questionnaire (SAQ20; 9 domains and SAQ20+3; 2 domains). Adequate convergent validity was indicated by Pearson Correlation coefficients with r> 0.5.

Results: The mean age was 14 ± 2 years. The mean largest Cobb angle was 30 ± 15o. The largest curve for 64% of patients was thoracic, 15% lumbar, 15% thoracolumbar and the rest upper thoracic. The convergent validity of the ISYQOL score was supported by correlations with each of the general QoL scores (SRS-22, SAQ20 and BIDSQS) as hypothesized (r>0.5) and also with some subscales of the SRS-22r (pain, self-image), and TAASQ (appearance, clothing, clothing general).(Table) The convergent validity of the BIDQS was supported by 12 adequate correlations with the SRS-22r (selfimage, mental health and total), SAQ 20 (general, chest), SAQ20+3(appearance), ISYQOL and TAASQ (appearance, clothing, clothing general, clothing specific, breast location). The TAASQ appearance (n=17 correlations), clothing (n=13) and clothing general (n=10) showed hypothesized correlations with the SRS-22r (selfimage, mental health, total), SAQ20 (general) SAQ20+3 (appearance), ISYQOL and BIDQS. TAASQ appearance and clothing correlated with the SAQ20 trunk shift and chest. TAASQ appearance also correlated with SAQ20 waist. TAASQ clothing specific showed only 10 hypothesised correlations with the SRS-22r (selfimage, total), SAQ20 (general), SAQ20+3 (appearance) and BIDQS. Correlations among TAASQ scores varied depending on domains (n=2 for breast size to 6 for appearance). The breast specific TAASQ sub-domains only showed hypothesized correlations with the SAQ 20+3 (appearance) and with other TAASQ scales. Breast location also showed a hypothesized correlation with BIDQS. New tools did not relate to function or satisfaction with care. Six of the 9 domains of the SAQ relevant to conservative care did not relate to any other QOL tool.

Conclusion: While partial evidence of convergent validity was observed for all the newly proposed questionnaires, there were differences in the convergent correlation patterns between tools. These questionnaires assess complementary aspects of quality of life.