QF12
ISYQOL DISCRIMINATES ADOLESCENTS WITH SPINALDEFORMITIES SUBGROUPS BETTER THAN THE SRS-22QUESTIONNAIRE

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Background: Quality of life (QoL) is evaluated in spinal deformities by several questionnaires. Rasch analysis is a statistical methodology to develop good QoL questionnaires, and make them interval instead of ordinal measures. ISYQOL (Italian Spine Youth Quality of Life questionnaire) is the first questionnaire developed through Rasch analysis.

Purpose of the study: To check the discriminative validity of ISY-QOL versus the actual gold standard questionnaire (SRS-22).

Materials and Methods: **Design**: Cross sectional study.

Setting: Tertiary clinic specialized in conservative treatment of spinal deformities. Consecutive outpatients were asked to complete SRS-22(22 items, 5 categories per item) and ISYQOL (20 items, 3 categories per item) questionnaires before consultation. Inclusion criteria: age10–18; idiopathic scoliosis and hyperkyphosis. Written informed consents were collected, and ethical committee approval obtained. Multiple linear regressions were computed to predict ISYQOL measure or SRS-22 score (independent variables: age, gender, diagnosis, and bracing). A subgroup analysis was performed through linear regression modelling (variables: age, gender, Cobb degrees, brace dosage and type) to check if each questionnaire was able to dis-criminate QoL changes according to specific influencing factors.

Results: 1677 participants (1251 females), median age 14 years (1–3quartile: 11–14).SRS-22 and ISYQOL scores correlate (Spearman-0.68, R^2 0.43,$p \backslash 0.001$) but the best fit is a parabole (R^2 0.51). With ISYQOL above 80% SRS-22 does not change (higher ceiling effect).SRS-22 and ISYQoL detect the effect of age, gender, diagnosis(scoliosis vs hyperkyphosis) and bracing (brace vs no brace) on QoL:$F = 92.42$ ($p \backslash 0.001$) for ISYQOL and $F = 85.59$ ($p \backslash 0.001$) forSRS-22. The variables explained 19 and 14% of the variability for ISYQOL and SRS-22 respectively. The QoL measured by ISYQOL is explained by: age (years),gender, Cobb degrees, brace hours per day and brace type (soft vs hard) ($F = 10.69$; $p \backslash 0.001$; $R^2 = 0.11$); SRS-22 by age and Cobb degrees only ($F = 13.66$; $p \backslash 0.001$; $R^2 = 0.05$).

Conclusion: ISYQOL is correlated to SRS-22 but with less ceiling effect. It is influenced and described by a greater number of parameters when described by ISYQOL. Thus, despite having considerably less items and categories, ISYQOL appears to be a better measure of QoL during growth in spine deformity individuals in a conservative setting.