76

GENDER DIFFERENCES IN SELF-REPORTED ADHERENCE TO SCOLIOSIS-SPECIFIC EXERCISES: A CROSS-SECTIONAL STUDY OF 2,214 PATIENTS WITH ADOLESCENT IDIOPATHIC SCOLIOSIS

Michele Romano
ISICO, Milan, Italy

Background

Adherence to home-based scoliosis-specific exercise programs is an important determinant of outcome in conservative treatment of idiopathic scoliosis. Potential gender differences in adherence could inform targeted interventions. Objective measures of adherence are currently lacking, so adherence is typically assessed by patient self-report.

Study Design

Cross-sectional study.

Objective (s)

To evaluate whether self-reported weekly duration of scoliosis-specific exercises differs between male and female patients.

Methods

We included 2,214 patients (282 males, 1,932 females) aged 10–15 years with adolescent idiopathic scoliosis (mean Cobb 19.4°) attending a tertiary referral centre. All patients were prescribed 20 min/day for six days/week (target 120 min/week). Primary outcome: self-reported minutes of exercise per week collected at monthly follow-up visits. Patients were classified as adherent if they performed ≥80% of the prescribed program (≥96 min/week). Predefined analyses included descriptive statistics (mean, SD, median, IQR, 95% CI), group comparisons by Welch two-sample t-test and Mann–Whitney U as confirmation, and effect sizes. To assess clinical equivalence we performed two one-sided t-tests with a predefined equivalence margin of ±10 min/week. Sensitivity analyses included bootstrap CIs (2,000 reps), permutation tests, and non-parametric confirmation. For the binary adherence outcome (≥96 min/week) chi-square tests were used and multivariable logistic regression was planned to adjust for available confounders.

Results

Mean (SD) self-reported weekly exercise time was 97.70 (36.23) min/week in males (n=282) and 91.97 (44.97) min/week in females (n=1,932). The mean difference (males − females) was 5.73 min/week (95% CI 1.04 to 10.42). Welch two-sample t-test: $t = 2.40$, $df \approx 418.3$, $p = 0.0164$. Effect size was very small (Cohen's $d = 0.13$; Hedges' $g = 0.1303$). TOST equivalence testing with margin ±10 min/week indicated equivalence between sexes (both one-sided tests $p < 0.05$), supporting the absence of a clinically important difference within the prespecified margin. Sensitivity analyses yielded consistent conclusions. Analysis of the binary adherence outcome (≥96 min/week) did not reveal clinically meaningful differences between sexes.

Conclusion(s)

Although the mean difference between males and females was statistically significant (~5.7 min/week), the effect size is negligible and, within the predefined ±10 min/week margin, males and females can be considered equivalent in self-reported weekly exercise duration. Results are limited by self-reported adherence and the cross-sectional design; objective adherence measures are needed in future studies.

Clinical significance

These findings challenge assumptions that females are more adherent than males and support the need for objective adherence measurement in scoliosis exercise research.