ABSTRACT

The objective of this study was to test the hypothesis that the total scores of the objective Wheelchair Skills Test (WST) and subjective Wheelchair Skills Test – Questionnaire (WST-Q), version 4.1 are highly correlated, but that the WST-Q scores are slightly higher. This study involved a cross-sectional design. Eighty-nine wheelchair users completed the WST-Q followed by the WST. Results show that the WST and WST-Q are highly correlated ($\rho = 0.89$), but that the WST-Q scores are slightly higher. To conclude, results of this study provide support for the use of the WST-Q in situations where it is not feasible to conduct the objective WST.

INTRODUCTION

The Wheelchair Skills Program is used to assess and train wheelchair users, caregivers, and clinicians [1]. It has an objective testing component, the Wheelchair Skills Test (WST), and a subjective testing component, the Wheelchair Skills Test Questionnaire version (WST-Q). These tests have evolved over time based on clinical and research experience, as well as assessments of their measurement properties. The correlations between the WST and WST-Q total scores for version 2.4 [2,3] have been reported as excellent, although the WST-Q scores were slightly higher. No such comparison has been carried out for the latest version of the WST, Version 4.1.

OBJECTIVE

The objective of this study was to test the hypothesis that the total scores of the WST and WST-Q, version 4.1, are highly correlated, but that the WST-Q scores are slightly higher.

METHODS

Design

This study used a cross-sectional design.

Participants

Eighty-nine (89) community-dwelling adults who used a manual wheelchair as their primary means of mobility were recruited for this study. These individuals were recruited from three major cities in Canada: Halifax, Nova Scotia, Hamilton, Ontario, and Vancouver, British Columbia.

Procedure

Each participant completed the WST-Q and then the WST.

Wheelchair Skills Test

The WST and WST-Q, version 4.1, both evaluate 32 wheelchair skills, ranging from basic skills, such as rolling the wheelchair forward to advanced skills, such as ascending and descending stairs [1]. The WST and WST-Q total performance score = the number of passes skills / the number of possible skills x 100%.
Data Analysis

Descriptive statistics and total percentage scores were calculated for the WST and WST-Q. Normal distribution of the data was tested with the Kolmogorov-Smirnov test. Wilcoxon Signed Rank test was used to detect a statistically significant difference between the WST and WST-Q. A Spearman correlation coefficient was used to determine the relationship between the WST and WST-Q.

RESULTS

The mean age of the participants was 50.5±14.7. The sample was predominantly male (68.5%) and the most common diagnosis was spinal cord injury (60.7%). The mean length of time using a manual wheelchair for this sample was 16.4±13.2 years. The mean total percentage scores ± standard deviation for the WST and WST-Q were 79.8±14.7 and 83.0±12.1 respectively. The WST and WST-Q scores demonstrated a negatively skewed distribution which was confirmed by the Kolmogorov-Smirnov test (p<.05). The mean total percentage score of the WST-Q was significantly greater than the WST (p<0.01). The correlation between the WST and WST-Q was 0.89 (p<.01).

DISCUSSION

Similar to previous research [2,3], there was a positive, excellent correlation between the WST and WST-Q. This correlation supports the use of the WST-Q as a measure of manual wheelchair skills. However, also similar to previous research, the WST-Q scores were slightly higher than the WST.

CONCLUSION

The total scores of the WST and WST-Q, version 4.1, are highly correlated, but the WST-Q scores are slightly higher.

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