

Construct Validity and Sensitivity of the Aquatic Independence Scale - Revised (AIM-2) for Assessing Beginner Swimmers with Physical Disabilities

Chacham-Guber

Levinsky-Wingate Academic College, Netanya, Israel
Israel ParaSport Center, Ramat-Gan, Israel

Y. Sapir

Levinsky-Wingate Academic College, Netanya, Israel
Israel ParaSport Center, Ramat-Gan, Israel

A. Goral

Levinsky-Wingate Academic College, Netanya, Israel
Israel ParaSport Center, Ramat-Gan, Israel

Y. Hutzler

Levinsky-Wingate Academic College, Netanya, Israel
Israel ParaSport Center, Ramat-Gan, Israel

Abstract:

This study examines the construct validity and sensitivity of the Aquatic Independence Scale – Revised (AIM-2). The original scale comprised 23 items that assess skills related to aquatic orientation and swimming preparedness in children with disabilities, with each skill rated on a five-point proficiency scale developed by an expert panel. A sample of 108 young swimmers with disabilities, each with at least two consecutive years of training, was evaluated toward the end of each training year by their coach using this scale, resulting in a dataset of 4968 scores. Exploratory factor analysis (EFA) and internal consistency assessments were performed to confirm the scale's structural validity. Inter-rater reliability was tested by having two expert coaches independently assess the same swimmers simultaneously. Divergent validity was evaluated through comparisons based on swimmers' years of experience in swim training and across three categories of disability severity. The EFA identified three factors accounting for 64% of the variance, with 13 items retained for further analysis. Cronbach α reliability was good for the full scale and factors 1-3 ($\alpha = .89; .88; .88; .82$ respectively). Inter-rater reliability was very strong ($ICC=.98-.99$). Significant differences were found across years of experience and disability severity. These findings suggest that the AIM-2 scale can effectively guide coaches in assessing aquatic independence and swimming readiness in young beginner swimmers with disabilities.