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**Validity of a naturalistic observational assessment of children's hand skills: A cross-cultural comparison**

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Introduction: Hand skill use is vital for children's development and successful participation in daily occupations. Since children with disabilities often experience hand skill problems that impede their participation in life, it is imperative to evaluate their hand skills in relevant daily life contexts. A naturalistic observational instrument, the Assessment of Children's Hand Skills (ACHS), has been developed. The ACHS rates children's hand skill performance while engaging in typical childhood activities, rather than completing performance-based test items in standardized contexts. However, there is no evidence about whether children's hand skill performance can be equivalently quantified with use of the ACHS in cross-cultural contexts, particularly in Western and Eastern cultures.

Objectives: The objective of this study was to evaluate the cross-cultural validity (i.e., potential for differential item functioning between two different cultural groups) of the ACHS with Australian and Taiwanese children ages 2-12 years.

Methods: A sample of 272 children (including 128 typically-developing children and 144 children with known disabilities) were included, 138 children from Australia and 134 children from Taiwan. Each child was observed when spontaneously performing one or more of 22 activities in naturalistic environments. The children's performances were rated by an occupational therapist using the ACHS that consists of twenty 6-level hand skill items. The Many-Facet Rasch model will be utilized to complete the cross-cultural comparison of (a) the hand skill item difficulty and activity challenge hierarchies of the ACHS, (b) the goodness-of-fit of the children's ability scores to the Rasch model, and (c) the mean ACHS hand skill performance scores.

Results: The analysis is currently being completed and will be concluded by November 2009.

Conclusions: The results of the cross-cultural validity analysis of the ACHS via the Rasch model will be reported. It may be necessary to revise the contents of the ACHS to correspond with different cultural contexts based on this analysis results. The revision of the ACHS will facilitate further comparisons of children's hand skill performances across cultures.

Contribution: The study findings will report whether the newly-developed ACHS is valid for occupational therapists to be used across cultural contexts to evaluate the children's hand skill performance.