Validation of the Paediatric Hearing Impairment Caregiver Experience (PHICE) Questionnaire

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Abstract

Introduction: The paediatric hearing impairment caregiver experience (PHICE) questionnaire is a 68-item instrument that assesses the stress experienced by caregivers of children with hearing impairment (HI). While the questionnaire has been validated in the United States, it may need to be modified for use in the Singapore context due to the differing healthcare system, costing and culture related to caregiving for children with HI. This study aims to modify and validate the PHICE questionnaire to increase its relevance and ease of use in Singapore. Materials and Methods: The original PHICE questionnaire was filled out by 127 caregivers of HI children managed at the otolaryngology clinic of the National University Hospital (NUH). An expert panel was convened to assess the questionnaire for its suitability for use in Singapore. Exploratory factor analysis was conducted to evaluate the underlying factor structure of the original PHICE questionnaire. Items with high cross-loadings were removed and a new factor structure was adopted which was further analysed using confirmatory factor analysis (CFA). Cronbach’s alpha (α) was computed to determine the internal consistency of the new subscales. Results: Items that are less relevant in Singapore and those with high cross-loadings were removed. A 5-factor structure with only 42 items remaining and corresponding to the factors: “Policy”, “Healthcare”, “Education”, “Support” and “Adaptation” was adopted. CFA suggests a good model fit for the modified questionnaire, improved from the 8-factor structure of the original PHICE. Cronbach’s α were high (>0.7) for each new subscale. Conclusion: The original PHICE questionnaire has been shortened and reorganised in terms of the subscales composition. The resulting instrument is structurally valid and internally consistent. It is a simple and useful tool for identifying factors related to caregiving that can negatively impact rehabilitation outcomes for children with HI in Singapore. Removal of some sign language items makes this modified version less useful for caregivers, places or countries where sign language is the main focus of rehabilitation for children with HI.

Key words: Modified, Outcome, Rehabilitation, Stress

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