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"DEVELOPMENT AND VALIDATION OF PAEDIATRIC OCULAR DRYNESS SYMPTOM (PODS) QUESTIONNAIRE"

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DEVELOPMENT AND VALIDATION OF PAEDIATRIC OCULAR DRYNESS SYMPTOM (PODS) QUESTIONNAIRE

ABSTRACT

Purpose: There is an increased use of digital devices due to the current scenario of digital learning during the COVID-19 pandemic, and children are prone to experiencing the symptoms of dry eye that need to be assessed. The purpose of this study was to develop and validate the Paediatric Ocular Dryness Symptom (PODS) questionnaire.

Method: A five phased process was involved in the development of PODS questionnaire (PODS-Q). Item development and instrument design was carried out using literature search during the first phase. Following the domain identification and item development process, the content validation by experts (n=13) who were eye care professionals was performed. Content validity was reported in terms of Item and Scale Validity Index (I-CVI and S-CVI) as well as Content Validity Ratio (CVR). Readability assessment using was also done using Homan-Hewitt readability in order to determine the comprehensiveness of the questionnaire and suitability to children. The final step involved filtering items based on the scores from the validation results and the development of the second version of the questionnaire. Face validation by qualitative method involved interviews with children aged 6-18 years (n=18). Quantitative face validation involved determining Item Impact Score (IIS). The final step was the development of the final version of PODS-Q based on content and face validation.

Results: There were 46 items which were developed under three domains following the first phase. They were: 1. Symptoms, 2. Impact on activities of daily living and 3. Environmental triggers. Based on content validation CVI and CVR scores, 30 items were eliminated, and 16 items were retained in the second version of the questionnaire. Face validation using cognitive interview yielded an understanding of items by the children, and the item impact scores were found to be good in majority of the questions. The final version of questionnaire was developed following the modifications and refinements from the face validation qualitative and quantitative results. Readability assessment ranged between 4th and 6th-grade level requirements to understand the items in the questionnaire. A final PODS questionnaire was created with 14 items in 3 domains for the evaluation of dry eye in children.

Conclusion: With the development and validation of PODS-Q pertaining to the paediatric population, the dry eye symptoms experienced by children can be assessed using a self-administered questionnaire for children in grades 4 and above and a questionnaire with some guidance from the interviewer in grades below 4. Upon further psychometric validation, PODS-Q can be used to evaluate the symptoms of dry eye in paediatric population accurately and reliably.

Keywords: Dryness, Paediatric, Questionnaire, dry eye, Validity