STRONG CHILDREN'S RESEARCH CENTER

Summer Research Scholar

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ABSTRACT

Title:
Evaluating A New Diagnostic Tool to Detect Tic Disorders in a Pediatric Population

Background:
Tic disorders, including Tourette Syndrome (TS), are child-onset disorders that have an impact on academic functioning, social development, and discomfort. While potential screening assessments for tics have been evaluated previously, we lack a simple diagnostic tool to improve detection of tic disorders. The Description of Tic Symptoms (DoTS) is a new potential tool, with parent- and child self-report versions, that unlike prior tools, addresses all the DSM-5 diagnostic criteria for a tic disorder. The DoTS is a two-page questionnaire divided into 6 parts. Parts I and II are answered by all respondents, then those who answer in the affirmative are instructed to complete the rest.

Objective:
To assess the ability of the DoTS Parts I and II of DoTS to identify tics and tic disorders in children from a general pediatric setting. Analyses focused on determining sensitivity, specificity, AUC, and optimal cutoffs for different diagnostic thresholds.

Methods:
Participants ages 6-17 were recruited from a pediatric emergency department or pediatric primary clinics. A parent/caregiver completed the parent-reported DoTS and youth ≥8 years completed the child self-reported DoTS. A tic expert blinded to the DoTS evaluated the child to determine whether tics/tic disorder was present. We conducted logistic regression and receiver operating characteristic (ROC) analyses to assess the screening utility of the DoTS Parts I and II. Primary outcomes were the presence of any tics and TS diagnosis.

Results:
Parent Part I, which inquires about abnormal movements or sounds, was the strongest individual predictor of Tourette Syndrome (AUC = 0.92), achieving 100% sensitivity and 75% specificity at the optimal cutoff (≥5) with a positive predictive value (PPV) of 39% and a negative predictive value (NPV) of 100%. For tic detection, Parent Part I performed better (AUC = 0.87), than Parent Part II (AUC = 0.81). Self Part II (AUC = 0.84) outperformed Self Part I (AUC= 0.69) for tic presence. Across all outcomes, parent-reported items consistently demonstrated stronger predictive ability than self-report.

Conclusion:
The DoTS performed well detecting tics and TS in a general pediatric population cohort. This suggests that it may be a beneficial diagnostic tool to use in clinical practice.