Autest: Culturally Adapted Risk Assessment Game for Autism Spectrum Disorder

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Using Western tools for Autism Spectrum Disorder (ASD) leads to inaccurate and inadequate diagnoses in the Indian setting due to huge diversity in socioeconomic and linguistic backgrounds. Culture-specific development norms influence symptom presentation and recognition. Culturally adapted tools, available in several regional languages, often do not accommodate varied developmental/physical abilities and educational backgrounds. We propose a home-based audiovisual game app (Autest), based on DSM-5 criteria, suitable for ASD risk assessment in Indian children. The game, based on culturally relevant storylines, has five modules for each age group under 10, with specific peer interaction and play skills. Autest was rated by 30 professionals—psychologists, social workers, and pediatricians—alongside traditional tools. Further, we tested on an experimental group of children pre-diagnosed with ASD and a control group (n=84; mean control age=8.875; mean experimental age = 8). Gameplay and behavior were tracked to assess ASD risk without interferences of culture or language. Professionals' ratings suggest that Autest is effective and non-intrusive, thereby reducing social inhibition. It facilitates assessment due to lack of a language barrier using emojis, cultural appropriateness, ease of administration, and simple scoring. Children with ASD received a high to very high risk score, whereas the control group received a risk score of low to moderate. Autest has good psychometric properties with an accuracy of 91.67%. One-way ANOVA revealed that our results are statistically significant. Autest can be introduced to healthcare systems at the grassroots and rural community health workers. Further usage and development will encourage population screening in underserved areas.

Awards Won:
Fourth Award of $500
American Psychological Association: First Award of $1,500