Reliability and Factor Structure of the Parent Effort Scale (PES) Community Scale

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PURPOSE: The purpose of this study was to examine internal consistency, factor structure, test-retest reliability, and scale distribution of the Parent Effort Scale Community Version (PES-C) in children between the ages of 2 and 7. The PES measures a parent's perceived effort to support their child's participation in daily activities in the community. The ability to participate in common daily activities can have a profound impact on the development of young children. Although all parents describe effort required to support participation, research with families of children with Autism Spectrum Disorders (ASD) have described high levels of parental effort to accommodate their child's special needs [1,2]. There are few if any instruments that consider the impact of parent effort on child participation in community activities. The PES-C was developed to fill this need, although requires further psychometric examination to determine underlying structures of the variable, internal consistency, and test re-test reliability prior to clinical use. Additionally, this study examined differences in parental effort between children with and without Autism Spectrum Disorders.

DESIGN: A cross sectional design was used to collect data for psychometric analyses. Participants were 304 parents of children with and without ASD between the ages of 2 and 7 years old. Recruitment occurred nationally through social media, ASD community/support groups, private preschools, and school districts.

METHOD: Participants completed the PES-C, along with the Gilliam Autism Rating Scale (GARS) to confirm ASD diagnosis, and a demographic questionnaire. Participants were emailed a link to collect data through Qualtrics Survey software or were provided with a paper version of the questionnaires based on preference. All data was downloaded or inputted into excel and converted for STATA prior to analysis. One hundred and twenty-eight of the participants completed the PES-C two weeks later to evaluate test re-test reliability. Cronbach's alpha was used to calculate internal consistency and intraclass correlation coefficients to calculate test re-test reliability (n = 304) [3]. A confirmatory factor analysis to evaluate the model fit was completed using Stata software (n = 304). The frequency of response options was calculated to examine scale distribution. A Cohen's d effect size estimate was used to examine known group comparisons between scores of parent's ratings of children with (n = 176) and without ASD (n = 137) [3].

RESULTS: Confirmatory factor analysis identified the best fit as a hierarchical model with items loading on the three factors (CFI = 0.98, TLI = 0.98, RMSEA = 0.11) representing social, healthcare and community outing scales. These three factors contribute to the second order factor of effort (loadings range: 0.84-0.99). Internal consistency was high for all scales with Cronbach's alpha ranging between 0.89 to 0.94 and very high for the total scale at .97. Total test-retest reliability was moderate for all items and scales (ICC = 0.61-0.87). The PES-C had reasonable distributions for the whole sample. Negative effect sizes (Cohen's d) indicated that parents of children with ASD had higher effort scores than parents of neurotypically developing children on all subscales (social: d = -2.42, healthcare: d = -1.53, community outings: d = -1.91) and the total PES-C score (d = -2.26)

CONCLUSION: The results of this study identify the underlying factor structure and initial reliability for a unique measure to assess parent effort to support participation in the community for young children. The PES-C has the potential to target those areas requiring significant effort for parents in order to provide supportive interventions to reduce caregiver burden.

References

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