

Identifying Decreased Sound Tolerance for Clients With Autism

Tana B. Carson, PhD, OTR/L¹, Angela M. Medina, PhD, CCC-SLP¹, Yuxi Qiu, PhD¹, Katherine Long, Ashlee Tuttle¹, Monica Niebles

¹Florida International University, Miami, Florida, United States

DOI: [10.5014/ajot.2024.78S2-PO50](https://doi.org/10.5014/ajot.2024.78S2-PO50)

Date presented: March 23, 24

Primary Author and Speaker: Tana B. Carson, tana.carson@gmail.com

Auditory sensory over-responsivity (aSOR) or decreased sound tolerance (DST) is a common feature of autism affecting approximately 60-70% of autistic children (Carson et al., 2022a). DST severely limits engagement in meaningful occupations across multiple settings for children with autism and their families. In autism, this condition is thought to present as a combination of three distinct DST conditions: hyperacusis, misophonia, and phonophobia (Williams et al., 2021). While assessments have been validated to assess these conditions separately in adults, few have been developed to assess multiple conditions in a single tool for pediatrics. The Pediatric Khalfa Hyperacusis Questionnaire is one of the only DST assessments validated for pediatrics, however, it screens for a single condition (Carson et al., 2022b). An instrument that can identify both hyperacusis and misophonia in a single assessment can help clinicians extract detailed information regarding symptomology to guide appropriate interventions and referrals. The purpose of the current study is to develop and validate a pediatric screening tool, the Pediatric Misophonia and Hyperacusis Questionnaire (PMHQ), that is capable of differentiating misophonia and hyperacusis in children ages 6-17. The PMHQ was field tested in a sample of n = 200 parents of children ages 6 to 17. Psychometric characteristics were evaluated using exploratory factor analysis, confirmatory factor analysis, and item analysis and differential item functioning (DIF) based on item response theory (IRT). Factor analyses support a 2-factor model (hyperacusis and misophonia) conceptual model guiding the development of PMHQ. The PMHQ demonstrates adequate psychometric properties and can be used by clinicians to screen for two distinct DST conditions. Clinicians will benefit from using this screening tool to better identify these common co-occurring conditions and monitor treatment outcomes.

References

- Carson, T.B., Valente, M.J., Wilkes, B.J., Richard, L. Brief Report: Prevalence and Severity of Auditory Sensory Over-Responsivity in Autism as Reported by Parents and Caregivers. (2022a). *J Autism Dev Disord.* 52, 1395–1402. <https://doi.org/10.1007/s10803-021-04991-0>
- Carson, T. B., Qiu, Y., Liang, L., Medina, A. M., Ortiz, A., Condon, C. A., . . . & Palacio-Raine, A. (2022b). Development and validation of a paediatric version of the Khalfa Hyperacusis Questionnaire for children with and without autism. *International Journal of Audiology*, 1-9.
- Williams, Z. J., He, J. L., Cascio, C. J., & Woynaroski, T. G. (2021). A review of decreased sound tolerance in autism: Definitions, phenomenology, and potential mechanisms. *Neuroscience & Biobehavioral Reviews*, 121, 1-17.