



Identification of Children with Atypical Sensory Symptoms

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Introduction

Research Questions:

- In children without psychopathology, but with atypical sensory symptoms, how accurately can we identify atypical behavioral attributes? Which behavioral attributes best discriminate children with atypical sensory symptoms from typically developing children?

Importance:

- This is the first study to explore whether twins identified with sensory symptoms (but no other psychopathology) can be discriminated from typically developing twins based on videotaped ratings of behaviors during the *Wisconsin Twin Project Home Visit Laboratory Temperament Assessment Battery* (LabTab), a psychological paradigm, (Van Hulle, C.A. 2002).
- Determining the diagnostic validity of SPD is crucial for accurate identification of children and may affect inclusion of SPD in the revised Diagnostic and Statistical Manual (APA, 2012) and funding of future sensory research.

Participants

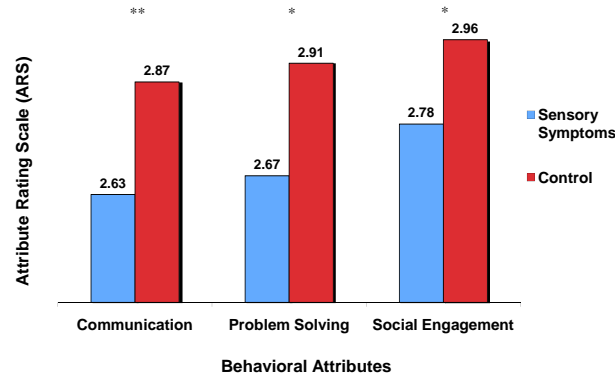
- Parents completed the Sensory Over-Responsivity Scales (Schoen, S.A. 2008) for 703 children drawn from a population based sample of 2,246 twins born 1992-2001 in Wisconsin. Of these children, 149 screened positive for tactile or auditory over-responsivity.
- Sixty of 149 (40%) children who screened positive for sensory symptoms failed to reach criteria on assessments of psychopathology. These children were age- and gender-matched to typically developing twins (total study population $n = 120$).
- The study population was 50.8% female, 92% Caucasian, with a mean age of 7.49 years ($SD = .87$).

Method

- Sensory symptoms data were collected (2001 to 2008) as part of the Wisconsin Twin Project when children were age 7-8.
- Three raters blind to sensory vs. typical group rated behavioral attributes for 120 videotaped LabTab administrations when children were ages 7-8.
- Drs. Miller and Schoen developed a rating scale of 13 atypical behavioral reactions (attributes) during seven vignettes (~ 1 hour, from 4 hours of the LabTab). These attributes appeared clinically to discriminate children with sensory symptoms from typically developing children in a small pilot study.
- The 13 attributes scores, created by taking an average of scores across LabTab vignettes, were distributed among 5 composites: *emotional state*, *interpersonal*, *attention*, *motor*, or *sensory responsiveness*. Composite scores reflect the mean of their component attribute scores.
- Descriptive data were calculated using SPSS. Independent samples t-tests compared mean scores between the group with sensory symptoms and matched controls on each of the 5 composite scores and each of the 13 attribute scores separately.

Results

Table 1. Difference between sensory symptoms group and control group by *interpersonal* attribute scores.



* = $p \leq .05$; ** = $p \leq .01$

- The sensory symptoms group had a significantly lower mean score than the control group for the “*interpersonal*” composite, $t(115) = 1.14, p = .025$.
- Within this composite, the sensory symptoms group had a significantly lower mean score than the control group for three attributes: *communication* ($t(115) = 2.23, p = .01$), *problem solving* ($t(115) = 1.83, p = .03$), and *social engagement* ($t(115) = 1.58, p = .05$).
- No group differences were found on “*Global Clinical Impression*” ($t(115) = .45, p = .32$) or the following composites: *emotional state/feeling*, *attention*, *motor*, or *sensory responsiveness*.
- Behavioral observations related to “*interpersonal*” attributes confirmed previous screening results for sensory-based grouping based on parent report measures.
- The “*interpersonal*” composite includes *communication*, *social engagement*, *problem solving* and *proximity* attributes; examples of behaviors include turn-taking, negotiating, and rich and varied physical and verbal communication.

Discussion

- Results indicated that children who screened positive for atypical sensory symptoms at age 7-8 on parent report measures differed from typically developing children on *interpersonal* attributes including *social participation*, *communication*, and *problem solving*, at screening 6 months later compared to age- and gender-matched controls.
- All children in this study were negative for psychopathology.
- These results provide preliminary support for the existence of a group of children with atypical sensory symptoms that exist independent of psychopathology.
- More research is needed to determine whether atypical sensory symptoms in older children are reflected in atypical interpersonal relationships.
- Additional work validating the existence of a separate syndrome that includes atypical sensory features is warranted. Future research should investigate the diagnostic specificity of sensory dysfunction subtypes, etiology, and developmental trajectory of the disorder.
- Limitations: Study findings are limited to children with sensory over-responsivity because the sensory group was identified by items reflecting tactile and auditory sensory over-responsivity on original testing. In addition, future work should employ vignettes designed to elicit sensory and motor behaviors.

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References

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