THE EFFECT OF SENSORY PROCESSING DISORDER ON THE INTENSITY OF TICS ASSOCIATED WITH TOURETTE’S SYNDROME IN CHILDREN

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Objective: To examine the reported prevalence of Sensory Processing Disorder (SPD) in children with tics and Tourette’s Syndrome (TS)

Purpose of the Study/Project: The dataset for this paper/poster was derived from a larger scale project which examined clinical characteristics and functional impact of TS and CTD (chronic tic disorder) in a large community sample using an Internet sampling method. The current examines reported diagnosis of Sensory Processing Disorder in addition to TS/CTD.

Framework: This poster uses the dataset mentioned in item B to examine reported diagnosis of Sensory Processing Disorder and its relationship to tics.

Background and significance: Tics are sudden, purposeless movements that vary in intensity and frequency. The estimated prevalence of tic disorder (TS or CTD) is 3 to 8 per 1000 in childhood (Scahill, Sukhodolsky, Williams, & Leckman, 2005). Tics are often preceded by a very strong desire or urge to perform the tic; it may feel as though the patient has an itch or uncomfortable feeling (Bullen, Hemsley 1983). This urge is known as premonitory urge and may be related to certain sensory sensitivities in TS patients (Cohen, Leckman 1992). Sensory sensitivities have recently been classified by some as its own disorder - Sensory Processing Disorder (SPD). SPD is characterized by hypersensitivity to sensory stimuli (Flanagan 2009) including hypersensitivities sensitivity to touch, certain lighting and even the feeling of clothing against skin. Some of the sensitivities often reported in SPD have also been reported to exacerbate tics. For instance, thermal sensitivities have been associated with worsening tic symptoms (Scahill et al. 2001). While SPD is widely acknowledged, particularly in autism literature, it is not currently classified by DSM-IV. The current poster investigates the reported rate diagnosis of SPD in children with tics.

Sample Description: Parents described their children in the sample and reported 596 males (80.5%), 143 (19.3%) females, and one child whose gender was not reported. The majority of the sample was white/Caucasian (85.7%, N = 634) and also included multiracial (6.5%, N = 48), Hispanic/Latino (3.2%, N = 24), Asian (1.5%, N = 11), and African-American (0.8%, N = 6) participants. Children had a mean age of 10.6 years (SD = 2.9, range = 4-17), and their median grade completed was fifth grade. Parents reported a previous formal diagnosis of TS in 96.1% (N = 711) of their children. Twenty nine percent (N = 214) had been diagnosed with Chronic Motor Tic Disorder and 18.5% (N = 137) with Chronic Vocal Tic Disorder. Of the 740 participants 11% (N=79) reported being diagnosed with SPD. Additionally 7% (N=51) reported treatment for SPD, with treatment lasting for the majority one month or more.

Setting: The survey was posted online for 6 consecutive months on Survey Monkey (www.surveymonkey.com ), an Internet based survey administration program. A link to
the study survey was posted on the home page of the Tourette Syndrome Association (TSA; www.tsa-usa.org).

**Method/Design/Procedure:** In the data set, children with TS/CTD and SPD were compared to children with TS/CTD without SPD. They were compared on measures of tic severity and level of urge. The survey that was used was the *Parent Tic Questionnaire* (PTQ). An independent T test was run on the data.

**Results/Outcomes:** Preliminary analyses suggest that close to 11% of the sample reported diagnoses of SPD. In addition, children SPD reported having tics with significantly higher levels of intensity; \( t(70)= .027\ p<.05 \), but not frequency; \( t(536)=1.252\ p>.211 \), compared to those children without SPD.

**Implications:** Results from these analyses suggest that children with tics who also report diagnosis of SPD report higher intensity of tics. The results do not, however, indicate any differences in tic frequency for children who have reported these co-occurring disorders. It is possible that children with sensory issues – such that they have reported diagnosis of SPD – experience more intense premonitory urges and tics. Future research needs to examine the possibility of sensory processing issues in the relationship with tics as well as the overlap of SPD and tics. These results are significant for understanding sensory phenomenon and sensory stimuli in SPD in conjunction with TS. SPD may be potentially misdiagnosed because it is not a disorder classified in the DSM-IV. Future research should explore clarification of SPD and evaluate treatment and intervention procedures for SPD alone and in concurrence with TS.

**Description of Team:** The main project involving the comprehensive internet survey was the product of several research sites. The current paper/project involves analyses of a subset of data from the main study and this is performed by a team of graduate students in clinical psychology at UWM under the supervision of Dr. Woods.

**References:**


