

Investigating Habituation to Premonitory Urges in Behavior Therapy for Tic Disorders

David C. Houghton

Texas A&M University

Matthew R. Capriotti

San Jose State University

University of California San Francisco

Lawrence D. Scahill

Emory University

Sabine Wilhelm

Massachusetts General Hospital/Harvard Medical School

Alan L. Peterson

University of Texas Health Science Center at San Antonio

John T. Walkup

Weill Cornell Medical College of Cornell University

John Piacentini

University of California Los Angeles

Douglas W. Woods

Marquette University

This research was supported by National Institute of Mental Health (NIMH) Grants R01MH070802 (Dr. Piacentini), 5R01MH069877 (Dr. Wilhelm), R01MH069874 (Dr. Scahill), and R01MH069875 (Dr. Peterson) with subcontracts to Drs. Walkup and Woods. The funding agency played no role in the study design; collection; analysis or interpretation of data; the writing of this article; or the decision to submit the article for publication. We thank Julie Collins and Joel Williams for their role in providing editorial assistance in the preparation of this manuscript.

Clinical trial registration information: U.S. National Institutes of Health human subject's trial forum (ClinicalTrials.gov; #NCT00218777, #NCT00231985)

Address correspondence to David C. Houghton, Texas A&M University, Department of Psychology, 4235 TAMU, College Station, TX, 77843-4235; e-mail: davidhoughton@tamu.edu.

0005-7894/© 2017 Association for Behavioral and Cognitive Therapies. Published by Elsevier Ltd. All rights reserved.

Behavior therapy is effective for Persistent Tic Disorders (PTDs), but behavioral processes facilitating tic reduction are not well understood. One process, habituation, is thought to create tic reduction through decreases in premonitory urge severity. The current study tested whether premonitory urges decreased in youth with PTDs ($N = 126$) and adults with PTDs ($N = 122$) who participated in parallel randomized clinical trials comparing behavior therapy to psychoeducation and supportive therapy (PST). Trends in premonitory urges, tic severity, and treatment outcome were analyzed according to the predictions of a habituation model, whereby urge severity would be expected to decrease in those who responded to behavior therapy. Although adults who responded to behavior therapy showed a

significant trend of declining premonitory urge severity across treatment, results failed to demonstrate that behavior therapy specifically caused changes in premonitory urge severity. In addition, reductions in premonitory urge severity in those who responded to behavior therapy were significant greater than those who did not respond to behavior therapy but no different than those who responded or did not respond to PST. Children with PTDs failed to show any significant changes in premonitory urges. Reductions in premonitory urge severity did not mediate the relationship between treatment and outcome in either adults or children. These results cast doubt on the notion that habituation is the therapeutic process underlying the effectiveness of behavior therapy, which has immediate implications for the psychoeducation and therapeutic rationale presented in clinical practice. Moreover, there may be important developmental changes in premonitory urges in PTDs, and alternative models of therapeutic change warrant investigation.

Keywords: tics; psychotherapy; behavior therapy; habituation

PERSISTENT TIC DISORDERS (PTDs) such as Tourette's Disorder (also known as Tourette's syndrome) are neurodevelopmental disorders characterized by the presence of tics for at least 1 year (American Psychiatric Association, 2013). Tics are repetitive motor movements (e.g., hard blinking and head jerking) and vocalizations (e.g., grunting and repetition of words or phrases) that can cause significant functional impairment and distress (Houghton, Alexander, & Woods, 2016). PTDs primarily affect children and have a waxing-to-waning developmental course. The age of tic onset tends to be between 4 and 6 years, and tics reach peak severity between ages 10–12 and often decline in severity during late adolescence (Bloch & Leckman, 2009). However, nearly one quarter of individuals with PTDs experience chronic tic symptoms into adulthood (Bloch & Leckman, 2009; Groth, Debes, Rask, Lange, & Skov, 2017; Leckman et al., 1998).

PTDs can be treated effectively with behavior therapy (Capriotti, Himle, & Woods, 2014; Cook & Blacher, 2007; Piacentini et al., 2010; McGuire et al., 2014; Wilhelm et al., 2012), which is thought to facilitate conditioning experiences central to promoting tic reduction. Behavioral interventions approach tics as being initiated by aberrant neural functioning but perpetuated largely by conditioning processes surrounding core PTD symptoms (Conelea & Woods, 2008; Himle, Woods, Piacentini, & Walkup, 2006; Himle et al., 2014). Indeed, a neurobehavioral perspective on tics acknowledges that tics are supported by motor hyperexcitability within fronto-striatal neural circuits (Albin & Mink,

2006), but tics are maintained, in part, by operant reinforcement and respondent associations (reviewed by Himle et al., 2006). One crucial aspect of these conditioning processes involves the functional relation between certain somatic phenomena, known as premonitory urges (PMUs), and tics (reviewed by Houghton, Capriotti, Conelea, & Woods, 2014).

A substantial body of literature has shown that individuals with PTDs experience PMUs, which are aversive sensations that precede and accompany tics (Cohen & Leckman, 1992; Kurlan, Lichter, & Hewitt, 1989; Kwak, Dat Vuong, & Jankovic, 2003; Leckman, Walker, Goodman, Pauls, & Cohen, 1994; Leckman, Walker, & Cohen, 1993; Woods, Piacentini, Himle, & Chang, 2005). Patients describe these experiences as various feelings of unfulfillment, irritation, and musculoskeletal tension (Bliss, Cohen, & Freedman, 1980). Whereas early conceptualizations considered tics to be involuntary (Caine, Polinsky, Kartzinel, & Ebert, 1979), accounts of PMU phenomena suggested that tics are better characterized as somewhat volitional and instigated by highly aversive PMUs, which are alleviated upon ticcing (Evers & van de Wetering, 1994; Kane, 1994; Lang, 1991). Several studies have supported this notion using an experimental paradigm comparing periods in which tic suppression is intermittently reinforced by monetary reward with periods when participants are instructed to tic freely and suppression is not rewarded (e.g., Capriotti, Brandt, Turkel, Lee, & Woods, 2014; Himle, Woods, Conelea, Bauer, & Rice, 2007; Woods & Himle, 2004). Results of these studies showed that tics can be suppressed for brief periods and that PMU strength increased during reinforced tic suppression and decreased during breaks from suppression. Furthermore, a recent study found that PMU strength increases prior to ticcing and decreases after ticcing (Brandt, Beck, Sajin, Baaske, et al., 2016).

The neurobehavioral model of PTDs posits that the short-term reductions in PMUs following tic completion result in longer-term strengthening or maintenance of tics and PMUs (Himle et al., 2006). When individuals engage in prolonged tic suppression, they experience PMUs without ticcing, and PMUs are thought to dissipate (Woods et al., 2008). Thus, tic suppression might facilitate a PMU habituation process whereby repeated exposure to the PMU results in decreased physiological response to PMUs and similar sensory stimuli (Evers & van de Wetering, 1994; Himle et al., 2006; Hoogduin, Verdellen, & Cath, 1997; Verdellen et al., 2008; Woods, Hook, Spellman, & Friman, 2000). PMU habituation is thought to occur both within individual periods of tic suppression (i.e., within treatment sessions) and

Download English Version:

<https://daneshyari.com/en/article/5037972>

Download Persian Version:

<https://daneshyari.com/article/5037972>

[Daneshyari.com](https://daneshyari.com)