Multimodal assessment of disgust in contamination-related obsessive-compulsive disorder

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Abstract

The present study utilizes multiple methods to examine the relationship between disgust and contamination-related obsessive-compulsive disorder (OCD) symptoms in an analogue sample. Questionnaire findings revealed that participants with high OCD contamination concerns showed stronger disgust sensitivity than did participants with low OCD contamination symptoms after controlling for negative affect. High OCD participants ($N = 30$) also reported significantly more disgust than did low OCD participants ($N = 30$) when exposed to a disgust-inducing video, whereas no significant between-group differences were detected on other negative emotional dimensions. Results from a series of disgust-specific behavioral avoidance tasks (BATs) revealed that high OCD participants demonstrated both less compliance and less approach behavior. Subsequent analysis also revealed that disgust sensitivity generally mediated avoidance on the BATs among high OCD subjects. High OCD participants also rated the BATs as more fearful and disgusting than did low OCD participants, with disgust generally emerging as the dominant emotional response. The results are consistent with a disgust-based, disease-avoidance approach in understanding contamination-related OCD themes.

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Introduction

Contamination concerns are the most common theme associated with obsessive-compulsive disorder (OCD; Rasmussen & Tsuang, 1986; Summerfeldt, Antony, Downie, Richter, & Swinson, 1997) as studies have shown that up to 50\% of people with OCD present with contamination fears (Rachman & Hodgson, 1980; Rasmussen & Eisen, 1992). Intrusive thoughts of contamination in OCD often lead to excessive sanitizing and disinfecting of the self and the environment. Ritualistic neutralizing behaviors (i.e., washing) associated with contamination concerns in OCD serve a negatively reinforcing function as distress elicited by the obsessions is temporarily alleviated (Rachman, 1994). Individuals with contamination-related OCD also tend to avoid...
situations and stimuli largely due to perceptions of being susceptible to disease and infection (Rachman, 1994). Furthermore, such obsessional thoughts may also be perpetuated by reoccurring fears of rapid, spreading infection following contact with perceived contaminants (Tolin, Worhunsky, & Maltby, 2004).

Contamination is defined as an intense and persistent feeling of having been polluted or infected (Rachman, 2004). Traditional conceptualizations suggest that the translation of normal washing and cleaning to functionally impairing contamination concerns is attributable to excessive fear and anxiety. Although intrusive thoughts and avoidance efforts may be associated with feelings of fear, it has been proposed that disgust may also contribute to the etiology and phenomenology of OCD-related contamination obsessions and washing compulsions (Phillips, Senior, Fahy, & David, 1998; Power & Dalgleish, 1997). The extension of disgust to OCD is not surprising as patients with contamination concerns often describe threat-relevant objects as “disgusting” rather than “frightening” (Sieg & Scholz, 2001; Tolin et al., 2004). Importantly, the distinction between fear/anxiety (i.e., sympathetic activation) and disgust (i.e., parasympathetic activation) in contamination-related OCD is not merely semantic as the two emotions are characterized by different processes (Olatunji & Sawchuk, 2005). Disgust and contamination, however, are viewed as related, but distinct concepts on a similar continuum. Disgust, as a basic emotion, elicits a reliable physiological response, facial expression, and withdrawal/avoidance pattern. Contamination, on the other hand, is viewed as the evaluative/interpretive process that occurs upon the experience of disgust or anticipated exposure to potential disgust elicitors. The range of stimuli capable of eliciting disgust may vary considerably in eliciting a concurrent interpretation of contamination. For example, a noxious smell may provoke feelings of disgust without a concern for contamination whereas encountering rotting food will likely concurrently elicit disgust and concerns over contamination. Thus, while disgust may be a necessary component of contamination, contamination may not be a necessary component for the experience of disgust.

The proposed relation between disgust and contamination-related OCD may be found in the shared functional value of protecting the individual from contact with and infection by contaminated stimuli (Woody & Teachman, 2000). Disgust may therefore be viewed as a dominant emotional process involved in contamination-related avoidance (Olatunji & Sawchuk, 2005), much in the same way the disease-avoidance model has been articulated with small animal phobias (Matchett & Davey, 1991). Empirical evidence has been accumulating in support of the role of disgust in contamination-related OCD (e.g., Olatunji, Williams, Lohr, & Sawchuk, 2005; Tsao & McKay, 2004). For instance, studies have found that disgust is a better predictor of obsessive-compulsive washing over and above fear, anxiety, and depression (Mancini, Gragnani, & D’Olimpio, 2001; Olatunji, Sawchuk, Arrindell, & Lohr, 2005; Thorpe, Patel, & Simonds, 2003). Importantly, these findings support the notion that disgust is distinct from other negative affective states. In a recent study, Olatunji Sawchuk, Lohr, and de Jong (2004) found that individuals classified as high in OCD contamination fear report significantly greater disgust sensitivity across a broad range of disgust elicitors in comparison to low contamination fearful participants. Less robust results were reported by Tolin, Woods, and Abramowitz (2006), who found that when controlling for depression and anxiety, as well as all other noncontamination symptoms of OCD, only disgust-specific hygienic concerns retained its relationship with OCD washing. In a study examining disgust in a clinical sample, Woody and Tolin (2002) found that OCD washers report significantly higher disgust than nonanxious controls, and marginally higher disgust sensitivity than did nonwashing related OCD subjects; however, OCD washers did not exhibit greater disgust sensitivity than did patients with social phobia.

Disgust and contamination-related concerns may involve sympathetic magic beliefs (Olatunji et al., 2004). This particular belief system involves the perception of being contaminated, even under conditions in which no objective threat of contagion is apparent. Specifically, either physical proximity or shared physical features between a benign object and a “contaminated” stimulus may result in the former acquiring the threat value of the latter (Nemeroff & Rozin, 1994; Rozin, Millman, & Nemeroff, 1986). Preliminary data supporting the role of sympathetic beliefs was found in a novel study conducted by Tolin and colleagues (2004). In this study, OCD patients were instructed to touch a clean pencil to an object that had been identified as being contaminated. A second “clean” pencil was then touched to the now “contaminated” pencil, with this procedure continued until a series of 12 pencils had been exposed. The results indicated that OCD patients reported a “chain of contagion” in which successive degrees of removal from the original pencil did not change their perceptions regarding the original degree of contamination (“once in contact always in contact”).
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