The two dimensions of contamination fear in obsessive-compulsive disorder: Harm avoidance and disgust avoidance

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ABSTRACT

Contamination fear has always been considered a homogeneous symptom dimension. Compensatory behaviors (e.g., washing) are considered attempts to remove the contagion and to protect the individual from threats of illness; however, they may also be motivated by feelings of distress that are unrelated to any perceived harmful outcome, such as the feeling of disgust. Our hypothesis was that OCD patients with fear of harm resulting from contamination (harm avoidance [HA]) and OCD patients with fear of disgusting substances/persons (disgust avoidance [DA]) could be distinguished. To test this hypothesis, the Contamination Fear Core Dimensions Scale (CFCDS), an 8-item self-report measure aimed at operationalizing the two facets of contamination fear, was developed. The scale was administered to 176 Italian OCD patients, together with a series of other self-report measures, and to 86 non-clinical participants. Confirmatory factor analyses supported the hypothesized two-correlated-factor structure in the clinical sample. The CFCDS also showed adequate reliability, construct and criterion-related validity. In particular, DA and HA subscales showed different patterns of association with other measures. In conclusion, this study provides preliminary evidence of the separability of two motivational dimensions of contamination fear and of specific associations between these and other relevant constructs.

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1. Introduction

Obsessive compulsive disorder (OCD) is characterized by the occurrence of persistent thoughts, urges, or images that are experienced as intrusive and unwanted (obsessions), and compulsive actions that the individual feels driven to perform in response to an obsession, which are aimed at preventing or reducing anxiety or distress, or preventing some dreaded event or situation from occurring (American Psychiatric Association [APA], 2013). Compulsive washing and contamination fear are among the most common manifestations of OCD (Rasmussen & Tsuang, 1986; Summerfeldt, Antony, Downie, Richter, & Swinson, 1997). While the ability to identify potential contaminants and avoid contamination serves an evolutionarily adaptive function, for some individuals these attempts result in functional impairment. Most, if not all, existing literature on the classification of OCD subtypes (for a review, see McKay et al. (2004)) considers contamination obsessions and washing/cleaning compulsions to be a homogeneous symptom dimension. Traditionally, compensatory behaviors (e.g., washing, cleaning) associated with contamination-related obsessions are considered attempts to remove the contagion and to protect the individual from threats of illness. Accordingly, cognitive-behavioral models propose that contamination fear is motivated by harm avoidance and its associated features that include threat-related dysfunctional beliefs (e.g., overestimation of threat, beliefs that uncertainty is intolerable, beliefs that one is personally responsible for anticipating and preventing harm, etc.; Frost & Steketee, 2002). However, some empirical results question the traditional cognitive-behavioral view that washing and cleaning compulsions are motivated by harm avoidance and the relevance of these cognitive beliefs for all OCD symptom subtypes (Calamari et al., 2006; Taylor et al., 2006) and their specificity to OCD (Julien, O’Connor, Aardema, & Todorov, 2006; Tolin, Worhunskym, & Maltby, 2006; Viar, Bilsky, Armstrong, & Olatunji, 2011). For instance, in the study of Calamari et al. (2006), a considerable proportion of washers scored low on harm avoidance-related dysfunctional beliefs like the tendency to overestimate threat or inflated responsibility. Similarly, Eckert & Gönnner (2008) failed to demonstrate a unique association of contamination/washing with harm avoidance in two of their three regression analyses. Thus, if harm avoidance and threat-related dysfunctional beliefs are not relevant for all OCD subtypes, then other motivations for contamination fear need to be explored.
Consistent with the above mentioned DSM-5 definition, washing/cleaning compulsions may also be motivated by feelings of distress that are unrelated to any perceived harmful outcome. The main form of distress that has been associated with washing compulsions is the feeling of disgust. Disgust is a basic emotion, recognizable across cultures, characterized by a rejection/revulsion response thought to have initially developed as a protective mechanism aimed at preventing oral ingestion of potential contaminants in order to minimize contraction of illness or disease (e.g., Rozin, Haidt, & McCauley, 2000). Nevertheless, in the psychological literature disgust is no longer defined as solely food-related, but the concept has been expanded and more recent views suggest that it may represent an adaptive system for disease more broadly (Curtis, Auinger, & Rabie, 2004; Curtis, de Barra, & Auinger, 2011). Research has suggested that both fear and disgust play a role in contamination-related OCD, and there is convincing evidence that they involve distinct processes as they are related to different heart rate responses, facial expressions, neural substrates, and cognitive processes (for a review, see Cisler, Olatunji, and Lohr, 2010).

Disgust propensity (DP), defined as an individual’s tendency to experience disgust, has been posited as contributing to the etiology and phenomenology of contamination-related obsessive compulsive symptoms (Phillips, Fahy, David, & Senior, 1998; Power & Dalgleish, 1997). A number of empirical studies support the role of the general tendency to feel disgust in contamination-related OCD (Mancini, Gragnani, & D’Olimpio, 2001; Olatunji, Williams, Lohr, & Sawchuk, 2005; Tolin, Woods, & Abramowitz, 2006; Woody & Tolin, 2002). Support for this association has been provided across methodologies. Correlational studies have shown positive and significant associations between measures of DP and measures of contamination fear (David et al., 2009; Melli, Chiorri, Carraresi, Stopani, & Bulli, 2015; Olatunji et al., 2010; Olatunji, Ebesutani, Haidt, & Sawchuk, 2014; Olatunji, Sawchuk, Lohr, & de Jong, 2004; Sawchuk, Lohr, Tolin, Lee, & Kleinkech, 2000; Schienle, Stark, Walter, & Vaitl, 2003); longitudinal studies supported the association between DP and contamination concerns (Olatunji, 2010); structural equation modeling showed a linear relationship between high DP and contamination fear in OCD (Moretz & McKay, 2008); behavioral studies found that disgust proneness mediates the association between contamination fear and avoidance of repulsive stimuli (Deacon & Olatunji, 2007; Olatunji, Lohr, Sawchuk, & Tolin, 2007); implicit measures of DP have predicted obsessive-compulsive symptoms (Nicholson & Barnes-Holmes, 2012).

High DP may increase contamination avoidance as much as a high perception of the risk of being harmed by contaminants or to harm someone else contaminating him/her, especially when the so called “contamination disgust” is involved (Olatunji et al., 2014). Some patients may avoid potential contaminants or clean to remove them motivated by the need to eliminate germs and prevent harm (harm avoidance, HA). Others may do this just to avoid intense feelings of disgust (disgust avoidance, DA), although they do not fear that contamination will cause serious harm to them or to someone else. Hence, we hypothesized that two distinct affective-motivational themes could be identified in contamination-related OCD symptoms. This should overcome the seemingly simplistic homogeneous symptom-based classification that exclusively focuses on the topographic aspects of these manifestations and ignores potentially more important underlying features.

However, before advancing any substantive inferences about the explanatory value of this model, it is necessary to establish its structural validity and develop a valid and reliable measure to assess HA and DA as motivators for contamination fears and washing/cleaning rituals, which, to the best of our knowledge, is currently missing. The current study aimed at operationalizing the model and providing evidence of its structural validity in a large clinical OCD sample. Therefore, a new self-report questionnaire, the Contamination Fear Core Dimensions Scale (CFCDs), was developed and its factor structure and other psychometric properties were tested.

Specifically, the aims of this study were as follows. (1) Evaluating the fit of the hypothesized two-correlated-factor measurement model through confirmatory factor analysis. (2) Provide evidence of the internal consistency and construct validity of the CFCDs. In particular, CFCDs scores were expected to be more strongly correlated with other measures of contamination-related OCD symptoms, mental contamination and disgust propensity than with measures of other OCD symptoms, depression and anxiety, and the two subscale scores were expected to show different patterns of association with all other measures. (3) Test the criterion validity of the CFCDs, i.e., its ability to discriminate among OCD participants with and without contamination-related symptoms and community controls. In particular, OCD patients with contamination-related symptoms as a primary complaint were expected to obtain higher CFCDs scores than other OCD patients and non-clinical participants when demographic variables were controlled. (4) Test the temporal stability of CFCDs scores in a sample of non-clinical participants.

2. Method

2.1. Item development

A preliminary version of the CFCDs designed according to recommendations for scale development (Furr, 2011) consisted of 18 items generated by the authors of this paper on the basis of their expert knowledge and practical experience of assessment and treatment of OCD. Nine of the items were worded to assess specific facets of contamination concerns based on HA—e.g., “I often worry about getting sick, or infecting others, after contact with germs or bacteria”; the remaining nine were worded to assess contamination concerns based on DA—e.g., “Contact or closeness of certain people (e.g., homeless, immigrants, immoral or perverse people) makes me feel disgusted”. These initial items were then sent to a group of experts on OCD and psychometricians not otherwise involved in the study; they were asked to evaluate the relevance and representativeness of the draft items to the constructs and to suggest amendments which would improve the content and face validity of the items. Several individuals with OCD provided feedback on the readability, comprehensibility and relevance of the items. Following the feedbacks 10 items were removed (five from each subscale) and others were amended to improve clarity, specificity and relevance. The final CFCDs consisted of eight items: four assessing HA and four assessing DA (see Table 2).1 No reverse-scored items were included. Participants are asked to rate each item on a 5-point Likert-type intensity scale from 0 (“Strongly disagree”) to 4 (“Strongly agree”). The scale took 1–2 min to complete.

2.2. Participants

The total study sample consisted of 262 adults, including 176 diagnosed with OCD and 86 non-clinical participants (NCP) recruited from the general population.

OCD participants were referred to an Italian private center for

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1 The scale has been translated into English through a mixed forward- and back-translation procedure. It is available for further validation studies free of charge from any of the authors.
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