



## The relationship between contamination cognitions, anxiety, and disgust in two ethnic groups

Monnica T. Williams<sup>a,\*</sup>, Jonathan S. Abramowitz<sup>b</sup>, Bunmi O. Olatunji<sup>c</sup>

<sup>a</sup>University of Pennsylvania, Department of Psychiatry, Philadelphia, PA, USA

<sup>b</sup>University of North Carolina at Chapel Hill, Department of Psychology, Chapel Hill, NC, USA

<sup>c</sup>Vanderbilt University, Department of Psychology, Nashville, TN, USA

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### ABSTRACT

**Background and objectives:** Obsessive-compulsive disorder (OCD) is understudied in African Americans, thus little is known about factors that might predispose this group to obsessive-compulsive anxiety. Prior research has shown that African Americans endorse more concerns about contamination, but it is not known how these differences relate to variables, such as beliefs or cognitions about contamination, the emotion of disgust, and anxiety sensitivity. The current study examined Black-White differences in contamination cognitions in a non-clinical sample ( $N = 245$ ).

**Methods:** European American and African American participants completed measures of contamination cognitions, anxiety, OCD, and disgust.

**Results:** African Americans exhibited significantly stronger contamination cognitions, as measured by the Contamination Concerns Scale. Multiple regression analysis showed that contamination concerns were predicted by disgust sensitivity, ethnicity/race, and gender. Neither anxiety sensitivity nor pathological washing behaviors were significant factors in the model.

**Limitations:** Study should be replicated in additional populations as generalizability beyond a college student population is not known.

**Conclusions:** African Americans are no more sensitive to disgust or anxiety than European Americans, but nonetheless have greater concerns about the severity of contamination surrounding certain items. This may predispose African Americans with OCD to symptoms involving contamination.

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### 1. Introduction

Epidemiological studies show that African Americans experience obsessive-compulsive disorder (OCD) at similar rates as the general population (Kessler, Chiu, Demler, & Walters, 2005; Zhang & Snowden, 1999); however African Americans are less likely than European Americans to receive treatment and consequently more likely to suffer a lifetime of disability, despite the availability of effective pharmacological and cognitive-behavioral treatments (Himle et al., 2008). Although symptom presentation, risk factors, and outcomes may vary cross-culturally, very little is known about OCD symptoms in African Americans (Williams, Powers, Yun, & Foa,

2010). Additional work is needed to better understand these symptoms in African Americans and more effectively address this critical health disparity.

African Americans show higher scores on some OC symptom dimensions relative to European Americans, and this appears to be especially true for contamination fears. The most recent epidemiological study found that over a quarter of people with OCD report contamination concerns (25.7%; Ruscio, Stein, Chiu, & Kessler, 2010), and among treatment-seeking individuals, over a third report contamination concerns (37.8%; Foa et al., 1995). The prevalence of contamination concerns among African Americans with OCD is not known because not enough African Americans with OCD were included in these studies to make a determination; however due to the differences found in contamination concerns among non-clinical samples, it seems possible that there may be a corresponding difference in symptom presentation among those with an OCD diagnosis. Thomas, Turkheimer, and Oltmans, (2000) first identified a difference in symptom dimensions when comparing

\* Corresponding author. University of Pennsylvania, School of Medicine, Center for the Treatment and Study of Anxiety, 3535 Market Street, 6th Floor, Philadelphia, PA 19104, USA. Tel.: +1 215 746 3341.

E-mail address: [monnica@mail.med.upenn.edu](mailto:monnica@mail.med.upenn.edu) (M.T. Williams).

scores of African American and European American college students on the Maudsley Obsessional Compulsive Inventory (MOCI; Hodgson & Rachman, 1977). On the MOCI washing subscale, African American participants scored one standard deviation higher than European American participants, but did not have more severe OC symptoms when high-scoring students were interviewed individually.

This initial finding of heightened endorsement of contamination fear among African Americans appears to be robust, as it has since been replicated in multiple investigations. For example, Williams, Turkheimer, Schmidt, and Oltmanns (2005) studied a large internet sample using the Padua Inventory (Sanavio, 1988), another self-report measure of OCD symptoms, and found a similar pattern of high African American endorsement of contamination items: non-clinical African American participants scored as highly as participants reporting a diagnosis of OCD. Extension of this research suggests that these differences are partially explained by cultural factors, including geography and whether the participants were primed with information that triggered thoughts about their ethnic identity before contamination measures were administered (Williams, Turkheimer, Magee, & Guterbock, 2008). Similarly, Williams and Turkheimer (2007) found that ethnic differences in contamination anxiety reflected varied cultural attitudes toward grooming and housekeeping as opposed to actual differences in the severity of psychopathology. The ethnic difference between participants on pathological contamination fears was eliminated when differences on these attitudinal factors were controlled statistically.

Collectively, the findings reviewed above indicate that although OCD and OC symptoms are equally prevalent across ethnic groups, there may be ethnic differences in OC-related cognitions. Risk factors for OCD may include different attitudes about constructs such as contamination that, in turn, influence behaviors and symptom expression. For example, in many cultural groups, animals are considered contaminated. European Americans are less likely to hold this view and more likely to own pets, whereas the opposite is true for African Americans (Siegel, 1995). This view about animals may make African Americans more likely to feel contaminated and subsequently anxious or distressed when coming in contact with an animal (Williams & Turkheimer, 2007). Examination of the affective correlations of contamination cognitions may provide important insights in better understanding cultural differences in symptoms of contamination-based OCD.

Research has demonstrated that in many cases, contamination concerns are comprised of both fear and disgust (McKay, 2006). Disgust is an emotion typically associated with things that are considered dirty, unappetizing, contagious, or otherwise offensive (Olatunji & Sawchuk, 2005). Several studies have found that self-report questionnaires assessing the tendency to experience disgust correlate with self-report measures of contamination fear, indicating a relationship between the two constructs (Moretz & McKay, 2008; Olatunji, Cisler, McKay, & Phillips, 2010). For example, Mancini, Gragnani, and D'Olimpio (2001) found a significant positive relationship between disgust and washing behaviors in a non-clinical sample. There is some preliminary evidence of group differences in disgust sensitivity, which may partially explain the ethnic differences observed in contamination concerns. For example, Haidt, McCauley, and Rozin (1994) found that relative to European American participants, African Americans scored significantly higher on the Disgust Scale. In a large undergraduate sample, Tolin, Woods, and Abramowitz (2006) found that non-whites (mostly African Americans) scored significantly higher than whites on the Disgust Scale; however findings for African American participants were not analyzed or reported separately. At

this point, very little is known about the construct of disgust and how it relates to contamination concerns among African Americans.

Differences in cognitive vulnerabilities may also be relevant to better understanding cultural differences in contamination fears. Anxiety sensitivity is a cognitive risk factor for the development of anxiety disorders and is comprised of beliefs about the consequences of physical arousal symptoms of anxiety. Cisler, Reardon, Williams, and Lohr (2007), found that anxiety sensitivity and disgust sensitivity were each independent factors in predicting contamination fears. There has been very little research on anxiety sensitivity in African Americans other than a few studies focused on the psychometric properties of anxiety sensitivity measures that found some racial differences in the factor structure of the measures (Arnau, Broman-Fulks, Green, & Berman, 2009; Carter, Miller, Sbrocco, Suchday, & Lewis, 1999; Chapman, Williams, Mast, & Woodruff-Borden, 2009). The few studies that compare scores on such measures have reported no differences between African Americans and European Americans on measures such as the Anxiety Sensitivity Index or Beck Anxiety Inventory (Carter, Sbrocco, Lewis, & Friedman, 2001; Williams & Turkheimer, 2008). However, the scarcity of focused research in this area makes it difficult to come to any conclusions.

In the present investigation we attempted to extend previous work by further examining differences between African Americans and European Americans on variables such as disgust and washing behaviors, which are associated with contamination-related OC symptoms. To date, no studies have addressed the role of disgust in ethnic/racial differences in contamination concerns. We also examined whether anxiety sensitivity is a factor in the relationship between contamination concerns and disgust due to the possibility that racial differences in anxiety sensitivity influence feelings about contamination. We hypothesized that African Americans would report greater levels of contamination concerns and more disgust sensitivity relative to European Americans, and that disgust sensitivity would be a predictor of contamination concerns for African Americans.

## 2. Methods

### 2.1. Participants

Participants included 245 undergraduates enrolled in Introductory Psychology classes at a large southeastern university. The mean age of the sample was 19.1 (SD = 1.37; range = 17–26). Of these, 202 participants (82.4%) self-identified as European American/Caucasian/White and 43 (17.6%) as African American/Black. The sample contained 135 (55.1%) women and 110 (44.9%) men, and there were no differences in the gender makeup between groups  $X^2(1, N = 245) = .61, p = .44$ .

### 2.2. Procedure and measures

Participants completed a battery of self-report measures that included the following questionnaires. They received course credit for their participation:

*Disgust Propensity and Sensitivity Scale-revised (DPSS-R; van Overveld, de Jong, Peters, Cavanagh, & Davey, 2006)*. This is a 16-item scale that measures the frequency (disgust propensity) and subjective negative impact (disgust sensitivity) of disgust-related experiences. Each item is rated on a scale ranging from 1 (“never”) to 5 (“always”). When the DPSS-R was validated on a primarily European American sample of undergraduate psychology students, the mean total score for the sample was 35.03 (S.D. = 8.30), and women scored significantly higher than men; the

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