Racial Differences in the Assessment of Obsessive-Compulsive Disorder

Monnica Terwilliger Williams
Charlottesville, Virginia

S.B., Massachusetts Institute of Technology, 1992
M.A., University of Virginia, 2003

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Eric Turkheimer, Ph.D. _____

Karen Schmidt, Ph.D. _____

Bethany Teachman, Ph.D. _____

Thomas Guterbock, Ph.D. _____

Abstract

Previous research has demonstrated that African Americans show unusually high endorsement rates on screening tools for obsessive-compulsive disorder (OCD). This dissertation investigates the psychometric and cultural mechanisms of this phenomenon, and extends previous work on the psychometric properties of anxiety scales through a series of studies. In a nationally representative non-clinical sample (N=258), Blacks significantly outscore Whites on the contamination and washing scales on the Padua Inventory and Obsessive-Compulsive Inventory for OCD. Blacks also score higher when race is made salient by presenting an ethnic identity questionnaire before OCD measures. Laboratory experiments (N=546) and qualitative interviews (N=6) suggest that over-endorsement is due in part to the salience of ethnic and racial information, rather than concerns about validating stereotypes or cultural mistrust. A factor analytic study was able to isolate cleaning factors that are greater in Blacks than Whites (N=1,483), and statistically explain the racial difference on measures of OCD. Greater concern about cleaning, housekeeping, animals, and appearance seem to be cultural norms for African Americans. Clinicians and researchers should use obsessive-compulsive disorder measures with caution in African Americans.

Dedication

"[Wilson Caldwell] was charitable to every fault except outrageous uncleanliness – and woe to the student who fell under the ban of his withering smile italicized by his deprecatory grunt! It was worse than excommunication by the Society." (Peele, 1898)

This dissertation is dedicated to the memory of Wilson Swain Caldwell, the grandfather of my grandmother. Born into slavery, he was for many years head Janitor at the University of North Carolina. Wilson Caldwell was a key member of a delegation that persuaded Union armies to spare the university during the Civil War, a time when many Southern cities were being burned to the ground. After the Civil War he founded a school for African Americans, was elected to the board of Commissioners of Chapel Hill, bought over twelve acres of land, and served as a Justice of the Peace (Battle, 1895). He passed away in 1898 and is laid to rest at the University of North Carolina cemetery, beside his father, November Caldwell, and his son, Doctor Edwin Caldwell.

Overview

Previous research has demonstrated that African Americans show unusually high endorsement rates on some standard anxiety assessment scales, particularly on screening tools for obsessive-compulsive disorder (Thomas Turkheimer, & Oltmanns, 2000; Williams, Turkheimer, Schmidt, & Oltmanns, 2005). This dissertation investigates the psychometric and cultural mechanisms of this phenomenon, and extends previous work on the psychometric properties of anxiety scales using a four-part approach. First, a representative sample of Black and White Americans is used to confirm racial differences and study the effects of the salience of race on measures of contamination anxiety. Second, a series of experiments is conducted to investigate possible mechanisms for racial differences, modeled after Claude Steele's (1997) studies on stereotype threat. Third, factor analysis is used to identify non-pathological latent traits in African Americans that are resulting in higher scores on measures of contamination anxiety; this is done by utilizing representative samples of subjects and including items believed to have cultural significance for African Americans but which are also potential indicators of obsessive-compulsive anxiety. Fourth, cultural differences are investigated via qualitative research by conducting detailed interviews of Black participants. Finally, the clinical implications of what is learned from these investigations is discussed and integrated toward the assessment of obsessive-compulsive anxiety.

Background

Perspectives on Cross Cultural Research

In their classic review of cross-cultural psychology, Triandis, Malpass, and Davidson (1971) make three main points: (1) since psychologists are often seeking general rules to apply to human behavior, the results do not translate across cultural, racial and social groups; (2) the anthropologist has something valuable to offer psychologists, an understanding of the distinction between emic and etic views (*i.e.* ways of grouping data that are defined by the people being studied rather than from without), and the anthropologist can learn about experimental techniques from the psychologist; (3) psychologists do not always fully explicate the meaning of their independent variables. For example, education has been shown to be a major determinant of perceptual, cognitive and attitudinal tasks: but what does "education" mean? Is it about intelligence, literacy, participation in institutional

environments, the manipulation of symbols, conformity to a lifestyle, or something else? There tends to be a great deal of unrecognized ethnocentrism in the design of many psychological studies. Although Triandis' article was written decades ago, many of the issues are still relevant. Despite awareness of cultural differences, psychologists continue to use measures designed for White subjects under the assumption that the psychometric properties remain intact.

Williams, Chambless, and Steketee (1998) describe the dearth of literature on African Americans and OCD, reflecting the lack of studies to determine how African Americans respond to behavioral treatments that are efficacious for White subjects. The authors report that clinical issues unique to African Americans complicate the treatment process—such as excessive shame, insanity fears, and a sense of uniqueness. They describe two African American women who participated in a treatment study on OCD at American University in Washington D.C. Both clients reflected what the authors deemed extreme shame and secrecy. One woman engaged in excessive washing out of fear of germs causing illness and becoming supernaturally hexed by others. One issue not addressed by the article is what "washing" means to the client. Does it involve a religious context (*i.e* baptism)? And how can the women's OCD behavior be interpreted in context? Both the women are secretaries in what the authors describe as "the predominantly white world of business and federal government in D.C." How does shame and secrecy relate to the cultural universe of meanings in which these African American women are imbedded? These concerns are elucidated in the words of the one client who said, "If white people get anxious, they can be neurotic and get better with a little therapy… but when a black person gets anxious, people think she's crazy and ought to be put away."

Lewis-Fernández and Kleinman (1994) argue that culture must be more central to the understanding of personality and psychopathology. Psychology needs to recognize the "cultural biases built into dominant North American professional models of diagnoses." The authors suggest that psychology and psychiatry have three culture bound assumptions: (1) ego-centricity of the self – the notion that the self is an individual, autonomous entity, which discounts the "social roots of psychiatric disease, the social course of mental illness, and the interpersonal patterning of personality;" (2) mind-body dualism – which suggests that events arise in either the brain (body) or the mind, with the former having greater reality. This dualistic model systematically misinterprets the non-dualistic cultural experience of many and forces a distinction between psychological and somatic experience where none may exist; and (3) culture as an arbitrary superimposition on a knowable

biological reality – a view of culture as epiphenomenal. This is a set of cultural schema superimposed a priori on an invariant bedrock reality of biology. The authors conclude that "mind-body states and notions of personality are profoundly shaped by collective cultural paradigms."

The body of work on culture and psychopathology offers a compelling argument for research projects such as those described in this dissertation. Due to a host of cultural concerns, African Americans may display unique expressions of anxiety, which are either being incorrectly classified or not recognized at all by traditional psychology (Heurtin-Roberts, Snowden & Miller, 1997).

OCD in African Americans

Obsessive-compulsive disorder is considered one of the top ten causes of disability worldwide (Lopez & Murray, 1998). OCD is classified as an anxiety disorder by the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR), and symptoms typically involve excessive washing due to contamination fears, repeated checking, impaired control over mental activities, and worries about losing control over one's behaviors (American Psychiatric Association, 2000). Whereas most studies concur with the established prevalence of OCD in the general population of 2-3% (Regier, Myers, Kramer, Robins, Blazer et al, 1984), studies researching anxiety in samples of African Americans have produced conflicting reports. In the NIMH epidemiological catchment area (ECA) study, which assessed subjects using the Diagnostic Interview Schedule, Regier et al (1984) concluded there were no differences in prevalence rates for anxiety disorders between Blacks and Whites. A subsequent analysis by Rieger, Narrow, and Rae (1990) also found no racial or ethnic differences after controlling for SES but did not elaborate on their findings or analyses. Using the ECA data, Karno, Golding, Sorenson, and Burnam, (1988) reported the lifetime prevalence of OCD among Blacks was significantly lower than among Whites. Zhang and Snowden (1999) also determined that African Americans were significantly less likely to have obsessive-compulsive disorder, with a lifetime prevalence of 2.3% for Blacks and 2.6% for Whites.

Other smaller studies have found differences in the opposite direction. A study by Valleni-Basile, Garrison, Waller, Addy, McKeown, Jackson, and Cuffe (1996) reported a higher incidence of OCD in African American adolescents, however their screening instrument (the Schedule for Affective Disorders and Schizophrenia for School-Age Children, Present Episode Version), was not specifically designed to assess this disorder. A study by Heyman, Fombonne, Simmons, Ford, Meltzer, and Goodman (2001) also found that rates of OCD were greater in a British "ethnic minority" sample, but

the racial composition of the minority sample was not described. A smaller study by Brown, Shear, Schulber, and Madonia (1999) found a greater incidence of OCD among Black randomly screened primary care patients, but this was not significantly different from the White patients in the study.

Although researchers have speculated on the possible reasons, it is not completely understood why prevalence rates for African Americans are inconsistent (Friedman, 1994). Thomas, Turkheimer, and Oltmanns (2000) suggest that biased assessment instruments may be a contributing factor.

OCD Screening Measures and Racial Differences

Obsessive-Compulsive Disorder (OCD) is often identified through the use of self-report screening tools, such as questionnaires or checklists that ask patients about obsessive and compulsive symptoms. Popular measures include the Maudsley Obsessional-Complusive Inventory (MOCI: Hodgson and Rachman, 1977), the Padua Inventory (PI: Sanavio, 1988) and the Obsessive-Compulsive Inventory, short version (OCI-R: Foa, Huppert, Leiberg., Langner, Kichic, Hajcak, & Salkovskis, 2002). In a study by Sternburger and Burns (1990), using a non-clinical US college sample, the PI and MOCI were significantly correlated, and the Padua's washing subscale was correlated with the MOCI's contamination subscale at .53. Foa, et al (2002) reported a significant positive correlation between the OCI-R's total score and other OCD measures, including the MOCI at .85. The correlation between the OCI-R and interview using the Yale-Brown Obsessive Compulsive Scale (YBOCS; Goodman, Price, Rasmussen, Mazure, Fleischmann, Hill, Heninger, & Charney, 1989) was .53 for a combined sample of obsessive-compulsives and non-anxious controls. The OCI-R did lack discriminant validity between other OCD measures and measures of depression but this was no worse than the performance of other OCD measures. Validation studies for all these tools were performed on primarily White participants. There has been little research done on the validity of these for minority populations in the US.

The 13-item National Anxiety Disorders Screening Day (NADSD) instrument was assessed based on data from a large sample of patients (N=6,331) from five ethnic groups (Ritsher, Stuening, Hellman, & Guardino, 2002). A six-factor model – comprised of post-traumatic stress disorder, panic disorder, generalized anxiety, OCD, social phobia, and agoraphobia – fit the data very well for Whites, but did not fit as well for certain non-White ethnic groups. For example, within the three-item Obsessive-Compulsive Disorder (OCD) Scale, the question about compulsions was problematic

because it loaded on a different factor for Blacks. Blacks were also more likely to report OCD symptoms in this study.

One potential cause of conflicting reports about the prevalence of OCD among African Americans could be that current measurement tools are inadequate for assessing racially and ethnically diverse populations. In the initial study of this topic, the MOCI was found to lack predictive validity for African Americans when administered to a large sample of college students, in part because of significant over-endorsement of cleaning and checking items by African Americans (Thomas et al, 2000). Black students obtained scores on the cleaning and checking scales of the MOCI that exceeded scores of White students by almost a standard deviation. An unusually high rate of false positive OCD diagnoses was observed among Black students. These students scored in the OCD range on the MOCI, but were found to be normal in structured interviews.

Although the racial difference in responses to contamination and washing items has now been replicated several times (Thomas et al, 2000, Williams et al, 2005), little is known about the causes of the difference. Lewis-Hall (1994) has suggested that fear of contamination is the most common obsession in African Americans with OCD, based on an unpublished survey of African American OCD patients in mental a health setting. Nevertheless, it is not known whether the tendency for Blacks to endorse significantly more contamination items than Whites is the result of valid differences in diagnosable OCD or attributable to non-pathological differences in personality, attitude, or response style, as suggested by Thomas et al (2000).

Work to date suggests that extraneous factors are contributing to differences in responses to items on OCD instruments. There are several possible reasons why Blacks and Whites differ in their responses, especially on questions pertaining to hygiene and health. Some of these differences appear to be cultural and others may relate to how underrepresented minorities perceive majority observers. The following sections describe these theoretical perspectives and finally some resulting hypotheses.

Cultural Differences in Health and Hygiene

Because fears of contamination are one of the most easily recognized manifestations of OCD, questionnaires tend to include many items about health and hygiene. Research indicates that the health practices and attitudes of Blacks differ from majority group members. For example, African Americans engage in safer food consumption behaviors than others (Yang, Leff, & McTague, 1998).

African American women are more likely to carry out certain feminine hygiene practices (*i.e.* douching) (CDC, 1997; Rosenburg, Phillips, & Holmes, 1991). Despite lower per capita incomes, Blacks spend more on laundry and cleaning supplies, and spend 25% less than Whites on alcohol even after adjusting for differences in average annual spending (US Dept Labor, 2002). African American youth are significantly less likely to use alcohol, tobacco, or drugs than Whites or Hispanics (CDC, 2000). Among youths aged 12 to 17, the rate of current illicit drug use among Hispanics was 9.8% and Whites was 9.6%, in contrast to the rate among Blacks of 8.3% (SAMHSA, 2005). These findings indicate that Blacks may be motivated to avoid perceived contaminants, more so than majority members. Therefore we would expect greater numbers of Blacks to endorse items reflective of these practices. By asking Black participants culture-specific questions about washing and cleanliness, the following studies are intended to provide further empirical evidence for cultural differences as a source of bias on anxiety measures.

Distrust and the Medical Establishment

African Americans have greater distrust of the medical establishment, and many believe medical institutions hold racist attitudes (Blackhall, Frank, Murphy, Michel, Palmer, & Azen, 1999; Gamble, 1993). Negative perceptions are rooted in historical abuses of Black slaves by White doctors for purposes of medical experimentation; Blacks could neither consent or refuse to participate by virtue of their low social status and were frequently victimized (Gamble, 1997). Events such as the Tuskegee Syphilis study, served to confirm the need for suspicion in the minds of many Blacks (Freimuth, Quinn, Thomas, Cole, Zook, & Duncan, 2001). Correspondingly, African Americans are extremely reluctant to participate in medical research (Gamble, 1993).

A meta-analysis by Whaley (2001a) found a negative correlation between level of cultural mistrust and use of mental health care services by Blacks. Black Americans under-utilize health care services out of fear of mistreatment, being hospitalized involuntarily, or being used as “guinea pigs” (Whaley, 2001b). Blacks spend less than half as much of their income on health care services than Whites (US Dept Labor, 2002). This was also apparent in the NADSD study where among subjects, recruited through health clinics and advertisements, Blacks were underrepresented by nearly half (Ritsher et al, 2002). The authors point out that the NADSD sample includes only those participants who are motivated to engage with a mainstream medical treatment setting and who are willing to discuss their emotional problems with an unknown mental health professional, making this a highly

selective and likely more acculturated group. Furthermore, feeling mistrust toward a clinician administering a scale filled with items which could cast an underrepresented person in a negative light would likely impact presentation rates as well as the way certain questions are answered.

Blacks who regularly encounter prejudice may develop what Whaley (2001b) describes as "healthy paranoia," a cultural response style based on experiences of racism and oppression in White society. Concern about being unfairly judged may lead many Blacks to exercise excessive caution, or careful double-checking, of tasks which could be evaluated by Whites. This double-checking could appear to be a symptom of obsessive-compulsive disorder.

Reactions to Stereotypes: Stereotype Threat

Although the study of culture, prejudice and stereotyping has traditionally been the domain of anthropologists and social psychologists, the evidence suggests that these constructs are relevant to the diagnostician as well. According to social psychologist Claude Steele (1997), when there are widely known stereotypes about a group, anything a group member says, thinks, or does may be viewed through the lens of those stereotypes. A behavior performed by a target person which might conform to stereotypes about the target's group makes the stereotype seem more plausible to others, and perhaps even to the target himself. This causes anxiety in the target person and may result in an unconscious change in his behaviors. For example, when Blacks are taking a difficult math test which will be evaluated by Whites, they cannot help but think about how their performance will reflect upon themselves as a Black person and Blacks as a group. This distraction results in a self-fulfilling prophecy as mental resources which could be used in problem solving are preoccupied with thoughts of possibly validating a stereotype about inferior intellectual abilities. As a result, African American performance on a math test is negatively affected, resulting in lower test scores. Furthermore, stereotyped groups may be more likely to exhibit impaired performance in areas they care about, as poor performance in a domain that one closely identifies with is more anxiety provoking because it threatens one's sense of self-worth. Steele (1997) refers to the anxiety and resulting negative behavioral changes as "stereotype threat."

Steele and Aronson (1995) were the first to document stereotype threat when they performed a series of classic experiments illustrative of how Blacks are more likely to underperform on a difficult test if they believe it is a measure of intelligence, especially when race is made salient. Simply asking for ethnic or racial information changes the way subjects respond. Steele and Aronson (1995,

experiment 4) demonstrated that the performance of African Americans on SAT questions was depressed when the subject was required to list his or her race just prior to receiving the test. Shih, Pittinsky and Ambody (1999) demonstrated a similar phenomenon when female Asian-American students were required to complete a group-relevant measure before taking a math aptitude test. When given an ethnic identity questionnaire first, mean math scores were significantly greater than controls, presumably because the stereotype about Asian-American superiority in mathematics was activated, prompting improved performance. But when administered a questionnaire about coed living conditions, mean math scores were lower than controls, presumably because making the female identity salient induced a stereotype threat related to the notion that females possess inferior quantitative skills. This phenomenon is believed to occur automatically and outside of conscious awareness.

Many additional studies have described and validated the phenomenon in the ensuing years across varying groups and situations (*e.g.* Aronson, Lustina, Good, Keough, Steele & Brown, 1999; Spencer, Steele & Quinn, 1999; Stone, Lynch, Sjomeling & Darley, 1999; Danso & Esses, 2001; Osborne, 2001), but to date stereotype threat has only been described in reference to academic and athletic performance. Although Osborne (2001) found that Blacks report more anxiety than Whites in test-taking situations, no one knows how or if stereotype threat may impact clinical measures of anxiety disorders. Stereotypes about African Americans consist of largely negative terms (Devine, 1989; Lepore & Brown, 1997). Amidst concerns about being stereotyped in an unfavorable light, Blacks may consciously or unconsciously underendorse items on anxiety measures which they perceive would fulfill negative expectations about themselves and/or may overendorse items which give the appearance of making them appear less like typical stereotypes. These over- and underendorsements then reduce the predictive validity of OCD scales for African Americans and other negatively-stereotyped groups.

A combination of negative stereotypes, fear of being criticized or judged unfairly, and mistrust of the medical establishment, may interact with cultural practices and attitudes to potentiate to the differences on anxiety measures documented by earlier studies. This course of research will test this hypothesis with experimental procedures designed to induce or reduce race-based performance-related anxiety.

Characteristics of Experimenter

Studies over the past fifty years have indicated that race of the experimenter can effect the subject in many ways, including physiological responsiveness, motor task performance, intelligence test performance, and participant anxiety (see Sattler 1970 for review of early studies). Dano and Esses (2001) demonstrated experimenter effects in a study where either a Black or White experimenter administered intellectual ability tests to White students. The performance of the students was enhanced when tests were administered by a Black experimenter, especially among students who indicated a social dominance orientation. This was presumably due to automatically activated feelings of superiority induced in the students when comparing themselves to a Black interviewer. Lowery, Hardin and Sinclair (2001) studied the effects of experimenter race in a study in which White participants were given an implicit measure of prejudice by either a Black or White experimenter. The subjects showed decreased prejudice in the Black experimenter condition. Guterbock, Finkel, and Borg (1991) found that even when conducting telephone surveys about an upcoming political election, race of the interviewer significantly affected the respondents' report of likely voting behaviors, even though the respondent could not see the interviewer.

Work to date seems to indicate that stereotype threat is situationally specific (not the trait of any one group), individuals in these groups attempt to escape stereotype threat when possible (*i.e.* by distancing themselves from group membership), and that reducing stereotype threat improves the performance of stigmatized group members (Steele, 1997). If the experimenter were an African American would this ameliorate anxieties of test takers, resulting in scores on anxiety questionnaires more closely resembling those of majority members? Blacks seem to prefer and be more trusting of Black counselors, at least in a clinical treatment setting (Sattler, 1970; Whaley, 2001a). One important manipulation performed in this dissertation is to administer measures to subjects by a Black experimenter, with the expectation this would alleviate the threat condition as compared to a White experimenter or an anonymous (presumed White) experimenter (*e.g.* when administered by computer).

Instructions to Subjects

Although we expect the presence of a Black experimenter to alleviate a substantial amount of race-related anxiety among African Americans participants, this may not be sufficient to completely eliminate feelings of stereotype threat. In the course of this research (Williams et al, 2005), some

subjects recruited through African American community groups expressed suspicion even when the principal investigator/experimenter was herself African American. There is research to suggest that a Black experimenter may be distrusted if he or she is perceived as a member of the "White establishment" (see Whaley 2001a). A racial match may not be a cultural match if the experimenter does not share the same values and customs as participants. And, even if a complete amelioration of stereotype threat were possible with a Black experimenter, in a clinical setting an African American clinician may not always be available. Therefore additional measures to reduce feelings of threat in African American subjects may be needed.

Steele and Aronson (1995) activated stereotype threat in students by emphasizing the diagnostic and evaluative features of a test of mathematical aptitude. A White experimenter explained to students they would be working on SAT type problems. Written instructions indicated that the questions would be difficult, they should not expect to get many correct, and they would be given feedback about their performance. This was intended to make Blacks think about racial stereotypes concerning inferior intellectual ability, which would be directly relevant to their performance. As predicted, the performance of Blacks was impaired, resulting in lower SAT scores. Steele and Aronson were able to successfully eliminate the effects of stereotype threat on intellectual performance by giving subjects differing instructions whereby tests administered were presented as non-diagnostic or challenge tasks, instead of diagnostic tests. They found Black test scores were significantly improved in the non-diagnostic condition compared to the diagnostic condition where scores were significantly lower than those of Whites.

Spencer, Steele, and Quinn (1999) performed a similar study involving gender differences in math ability. Male and female subjects, matched for math aptitude, were given problems from college entrance exams. Female students underperformed compared to male students when the problems were difficult or when told that there were gender differences in the outcome of the test. However, the performance of females improved to the point where scores were no different than males if participants were told the test was insensitive to gender differences. Further analyses revealed that reported anxiety and evaluation apprehension were significantly related to women's poorer performance, but feelings of self-efficacy were not. This illustrates that even someone who may feel qualified and be competent in a given domain can experience impairments in performance due to anxiety over their group membership and evaluation fears.

Cultural Experience

Unconscious anxiety due to racial stereotypes may not account for the difference between Blacks and Whites on anxiety measures. Cultural groups may place differing values on routine practices for any number of practical, religious, or historical reasons. For example, segregation statutes, or Jim Crow laws, sanctioned racial separation in education, worship, housing, employment, and social interactions. Increased emphasis on cleanliness may be a type of culturally-embedded compensation due to generations of negative stereotyping, which includes stereotypes about being "poor," "aggressive," "criminal," "violent," "unintelligent," "lazy," and "dirty/smelly" (Devine, 1989; Lepore & Brown, 1997). Investment in the notion of White superiority justified these statutes, which were public symbols and constant reminders of the subordinate position required of African Americans. As a result, notions of Black inferiority were and still are widespread.

One assumption embedded into these codes was that African Americans were unclean. Black customers were not allowed to try on clothing in White shops, as it was commonly believed that White customers would find these items tainted. Blacks could not use White drinking fountains or restrooms because shared use would contaminate a White person. Black people were forbidden to use White swimming areas, because even one Black swimmer was thought to contaminate an entire body of water. Although these laws are no longer with us, the stereotypes these codes fostered remain woven into the fabric of our society (Devine, 1989; Lepore & Brown, 1997). A cultural reaction to these attitudes could be an explanation for the Black-White differences in the measures that are the focus of this dissertation.

Preliminary Analyses

Pilot 1: Replication of Early Work

Initial work in this area (Williams et al, 2005) replicated the findings of Thomas et al (2000) using a more comprehensive measure, 60-item Padua Inventory for obsessive-compulsive disorder (Sanavio, 1988). A study was conducted that included a non-clinical sample of 582 Whites, 105 African Americans and 67 Hispanics recruited through the Internet. Factor analysis replicated the factor structure from Sternberger and Burns (1990) in finding that the PI consists of four factors: contamination, checking, impaired control over thoughts, and fear of losing control over impulses. As was the case in the Thomas et al (2000) study, African Americans scored substantially higher than

Whites on the contamination factor of the PI in the non-clinical sample, and in fact scored as high as participants reporting an OCD diagnosis. The largest differences between Blacks and Whites, many of them on the order of a full standard deviation, were found on the contamination scale of the Padua (Williams et al, 2005).

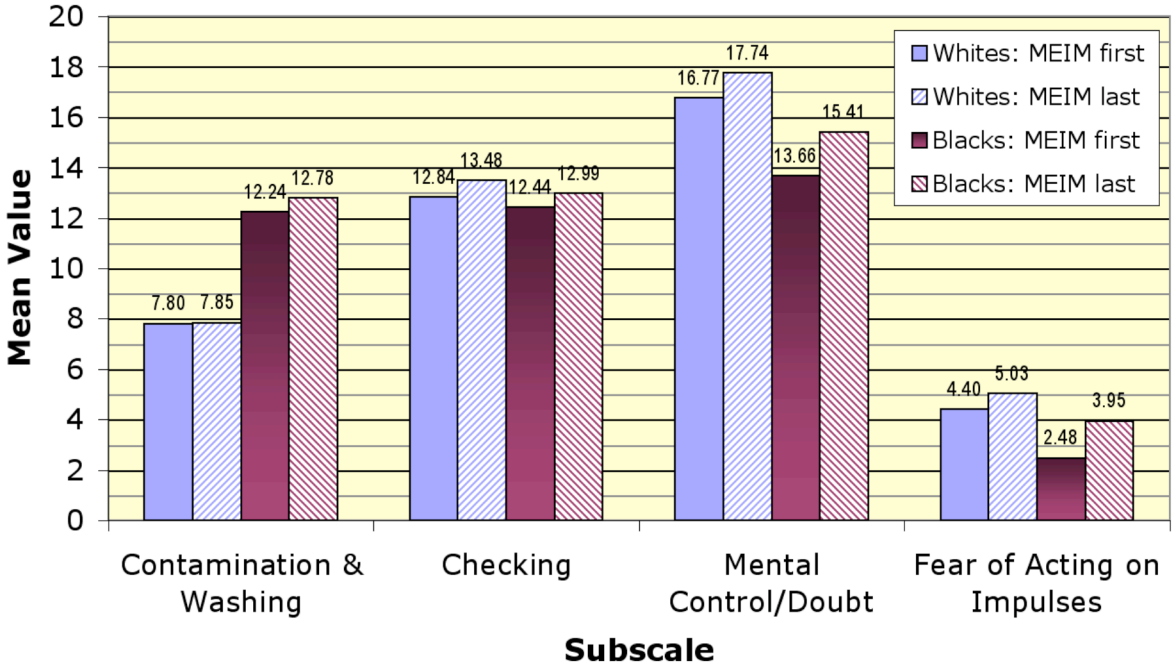
Differential item functioning (DIF) analysis revealed five items that were more frequently endorsed by African Americans conditional on their latent level of OCD ("If an animal touches me, I feel dirty… and have to wash, " "I return home to check doors, windows, drawers, etc," "I check letters carefully many times before posting them," "I am sometimes late because I keep on doing certain things more often than necessary," "When I read I have the impression that I have missed something important and must go back and reread the passage at least two or three times," "Obscene or dirty words come into my mind and I cannot get rid of them,") and two items that were biased in the opposite direction ("I feel my hands are dirty when I touch money," "At certain moments, I am tempted to tear off my clothes in public"). The item exhibiting the greatest differential item functioning (DIF) in favor of Black over-endorsement was an item pertaining to animals, whereby Blacks feel the need to immediately wash or change clothing after touching an animal. This response is likely motivated by different cultural ideas about hygiene and animals, evidenced by the fact that ethnic minorities are less likely to own pets than Whites (Siegel, 1995). However, outside its cultural context, such a response could wrongly be interpreted as a symptom of anxiety-related distress.

Pilot 2: Questionnaire Order Influences Responses

One potential problem of earlier studies (Williams et al, 2005; Ritsher et al, 2002) is that demographic information about race is asked prior to administration of anxiety measures, which is then used as a proxy for ethnic identity. As noted earlier, research indicates that simply asking for ethnic or racial information can changing the way subjects respond. A second pilot study, utilizing both college and community samples in Virginia, involved a subtle experiment to determine if making ethnicity salient would alter the way minorities responded to questions about OCD (Terwilliger, Turkheimer, Barkley, & Oltmanns, 2003). In this study, two OCD measures were administered to students (N=461) and community participants (N=203), but also included the Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992). The MEIM contains several questions about ethnic identification, the importance of traditional practices, and orientation toward members of one's ethnic group. Half of the subjects were randomly selected to receive the MEIM immediately before the OCD

measures; the other half received it at the end. The goal of this manipulation was to determine if priming participants with ideas about their ethnic group would lead to a bias in responding. The expectation was that Blacks would under-endorse items which would fulfill negative expectations about themselves (loss of control over impulses, excessive worry and doubt) and over-endorse items which give the appearance of making them appear less like stereotypes (washing, cleaning). The expectation is that these differences would be exaggerated when the MEIM is presented first. It is also expected that there would be few differences on scales not associated with racially stereotyped behavior (*e.g*. checking) and behaviors which are culturally determined (*e.g.* attitudes towards animals), despite any observed differences between ethnic groups.

Figure 1: Padua Inventory Subscales by Participant Race and Form Order



As shown in Figure 1, the findings confirmed several of these hypotheses. Blacks who received the MEIM first*, i.e.* those for whom ethnic identity was especially salient, scored significantly lower on Padua subscales intended to assess impaired control over mental activities and worries about losing control over one's behaviors. As expected, the Padua checking scale did not differ significantly between groups, although scores were lower (less pathological) for MEIM-first (ethnicity-

salient) Blacks. Furthermore, Blacks completing the MEIM last scored significantly lower than MEIM-first Blacks on overall ethnic identification, an apparent attempt to distance themselves from group identification after endorsing potentially pathological traits. No significant differences were observed between MEIM-first (ethnicity-salient) versus MEIM-last (ethnicity non-salient) Whites on any measure. This is consistent with Steele and Aronson's (1995, experiment 3) findings that three-quarters of Blacks were unwilling to report their race after completing a problem-solving task under stereotype threat (whereas the Blacks in a non-stereotype threat condition and all Whites were willing to do so). This could illustrate a desire by African Americans to avoid confirming negative stereotypes.

Interestingly, there were no significant differences between MEIM-first versus MEIM-last Blacks on the Padua's contamination and washing scale, the scale for which are seen the clearest differences between Blacks and Whites. Blacks scored significantly higher than Whites on this subscale (in fact, Blacks were not significantly different from persons identifying themselves as having an OCD diagnosis), yet the form order manipulation produced no differences. Possible reasons are that (1) Black responses to contamination and washing items are only cultural and not influenced by stereotype threat, (2) these items are so culturally loaded, that omitting the MEIM fails to reduce the threat sufficiently to eliminate bias, (3) a ceiling effect has occurred in that no additional threat could inflate scores further. Additional work would be needed to clarify the meaning of these findings. Preliminary item-level analyses showed a greater effect due to form ordering among Blacks than Whites, an indication that responses are influenced by conscious or unconscious activation of ethnic stereotypes. Overall, It is compelling to find any significant effects resulting from such a subtle manipulation. Based on Steele's work and these pilot data, larger effects could be expected with a stronger manipulation.

Overview of Research Program

Description of Studies

To further study and understand the phenomena described above, four studies were carried out. The first was via the Internet which will be referred to here as Study 1; one using laboratory participants with planned manipulations, which will be referred to as Study 2; one utilizing a larger combined data set using factor analysis to isolate unique cleaning factors in Blacks, which will be

labeled Study 3; and finally a qualitative portion, involving semi-structured interviews of Black community subjects, which will be referred to as Study 4.

Study 1: Internet Experiment

Although findings from the pilot studies support the hypotheses about stereotype threat, this work was done with conventional samples of university students and community participants from the central and eastern Virginia areas. It was still necessary to confirm the generalizability of this phenomenon among a representative sample of unbiased participants. An Internet component to this study was performed where data was collected from a national sample, via a project called Time-sharing Experiments for the Social Sciences (TESS). TESS is an NSF-funded infrastructure that offers investigators from many disciplines, including psychology, an opportunity to test their experimental ideas on large, diverse, randomly-selected subject populations. Investigtors wishing to use TESS must submit an application that is then reviewed by several experts, and this study was approved after revision. This experiment was intended to both document Black-White differences and illustrate the effects of making race and ethnicity salient through the presentation of an ethnic identity measure.

Study 2: Laboratory Experiments

In a laboratory study, the cause of racial bias in anxiety measures was examined by assessing what effect the race of the experimenter and verbal instructions would have on the outcome of several anxiety measures, specifically those designed to measure obsessive-compulsive symptoms. If the manner in which the test was presented and/or the race of the experimenter could cause reliable differences in the outcomes of those measures, then a potential source of bias has been identified that could result in the misdiagnosis of patients. As described earlier, Steele and Aronson (1995) increased feelings of stereotype threat in students by emphasizing the diagnostic and evaluative features of a test of mathematical aptitude. They eliminated feelings of stereotype threat by presenting the test as a challenge exercise. This study attempted to cause an analog of this process in African Americans completing measures of anxiety disorders by varying these factors.

Study 3: Factor Analysis

The purpose of this investigation was to determine if cultural attitudes could be separated from pathological anxiety through the use of factor analysis. This would be accomplished by

administering OCD measures to participants along with several new attitude items believed to have cultural significance for African Americans, but which are also potential indicators of obsessive-compulsive anxiety. If a factor describing attitudes about cleaning could be isolated, it would indicate that African Americans are over-endorsing contamination items simply because they have differing cultural attitudes about washing and hygiene.

Study 4: Semi-Structured Interviews

To better understand the reasons for ethnic differences in response to anxiety disorders, a qualitative study was also considered an important part of this program of research. Six African American subjects were selected for semi-structured interviews to assess their subjective experiences with the assessment process. Subjects were also asked specific questions about their beliefs surrounding mental health care and research as well as cleaning and checking behaviors.

Protection of Human Subjects

No participants reported any psychological risk or distress as a result of these studies. Although most participants were expected to find the questions straightforward, it is not unreasonable to imagine that some may find the questions unpleasant or embarrassing. Therefore participants were told that they may skip questions they prefer not to answer, or they may stop participating at any time. Participants were informed that there were no direct benefits for participating, but that the study may help us to better understand mental health issues. No identifying information about any subject was released.

All participants for Studies 2, 3, and 4 were given informed consent documents, which included the names, phone numbers and contact information of the principal investigator, faculty advisor, and IRB Chairman. Upon completion of the protocol, participants were given information about anxiety disorder resources and where to get more information. Participants in Study 1 were exempted from informed consent requirements, and the data collection for Study 1 occurred after data collection from the other studies. These studies presented a minimal risk of psychological distress to participants. These protocols were all approved by the University of Virginia's IRB.

Study 1: Internet Experiment

Overview

This study was intended to both document Black-White differences in a geographically representative sample and illustrate the effects of making race and ethnicity salient through the presentation of an ethnic identity measure prior to receiving anxiety measures. Although the initial pilot study involved a large sample recruited through the Internet, Study 1 is improvement because (1) it includes ethnic identity questions, (2) questionnaire ordering can be counterbalanced, and (3) subjects are recruited randomly instead of being self-selected, a potential confound in both the initial pilot study and studies like the NADSD one described earlier (Ritsher et al, 2002). This study focuses on contamination anxiety, the scale that exhibited the greatest racial differences in earlier studies (Williams et al, 2005; Thomas et al, 2000).

Research Design and Methods

Participants

The sample consisted of 298 Black and White participants from across the US. Excluded were Hispanic participants, those living in the US for less than ten years, and those who reported a race other than White or Black. After data were collected, any participant reporting a mixed racial background or a history of OCD was removed from the analysis (40 participants in all). This resulted in a final sample of 208 Blacks and 50 Whites. By design, participants ranged in age from 18-35, with a mean age of 28.6, SD 5.1. Subjects were 35% female and 65% male. The study had a response rate of 64%. (However, it should be noted that this response rate only includes people who agreed to participate in the study and does not correct for attrition of the TESS participant pool.)

As shown in Table 1, respondents comprised a geographically representative US sample (US Census 2000), with other relevant socioeconomic variables shown in Table 2. Geographic region and household income for our sample approximated that of the US for this age group. Educational attainment, homeownership, and employment status indicates that our African American sample is of a slightly higher SES than average.

Table 1: Regional Demographics

		Current Study		National Population		
		Black	White	Black	White	All
US Region	Northeast	14.4%	18.0%	17.3%	18.7%	18.3%
	South	56.7%	36.0%	55.5%	34.9%	36.0%
	Midwest	19.7%	30.0%	18.4%	25.5%	22.4%
	West	9.1%	16.0%	8.8%	20.9%	23.4%

Table 2: Socioeconomic Demographics

		Current Study		National Population		
		Black	White	Black	White	All
Ed Attainment	High School or Less	26.3%	35.6%	56.8%	42.7%	46.8%
	Some College	44.1%	28.9%	32.7%	35.5%	33.7%
	4 Yr or Adv Degree	29.6%	35.6%	10.5%	21.8%	19.5%
Marital Status	Single	64.5%	46.7%	73.0%	52.8%	56.2%
	Married	29.0%	53.3%	21.7%	41.3%	38.3%
	Div/Sep/Widowed	6.5%	0.0%	5.3%	6.0%	5.6%
Household Income	0-24,999	36.1%	20.0%	43.5%	26.1%	28.7%
	25-49,999	37.0%	30.0%	29.1%	29.3%	29.3%
	50-74,000	16.8%	24.0%	14.9%	20.3%	19.5%
	75+	10.1%	26.0%	12.4%	24.3%	22.5%
Employment Status	Employed	72.0%	75.6%	54.1%	69.8%	65.8%
	Unemployed	14.0%	6.7%	10.7%	5.1%	6.1%
	Other	14.0%	17.8%	35.1%	25.1%	28.1%
Home Ownership	Own Home	36.8%	82.2%	46.3%	71.3%	66.19%
	Rent Home	63.2%	17.8%	53.7%	28.7%	33.81%
Sex	Male	32.2%	48.0%	48.1%	50.8%	50.7%
	Female	67.7%	52.0%	51.9%	49.2%	49.3%

Due to the availability and grouping of census data, values shown for US region and sex are for ages 18-35, educational attainment and marital status are for ages 18-34, employment data is for ages 16-34, and homeownership and household income are for all ages.

Measures

The following comprise the battery of measures administered to participants. Due to the limitations on Internet survey length, only certain subscales of some of the measures were included,

as opposed to more comprehensive batteries, used in Study 2. The complete content of this protocol is included in Appendix A.

- Demographics: Demographic information was collected from all participants prior to the study by TESS, and therefore was not collected during administration of the protocol. This includes information about age, income, geography, education, and employment status. Race and ethnic identification information were also collected in advance. The last two questions of the battery concerned mental health history and asked participants if they had ever been diagnosed with OCD.
- Ethnic Identity Measure: To both prime subjects about their race and to quantify allegiance to their ethnic group, we administered Phinney's (1992) Multigroup Ethnic Identity Measure (MEIM). The MEIM, which is suitable for use with any ethnic group, contains 20 items about degree of ethnic identification and 3 fill-in questions about the subject's race. Included are subscales for determining feelings of affirmation and belonging, ethnic identity achievement, ethnic behaviors, and other group orientation. Only the 14-item ethnic identity subscale, which can be scored separately from the rest of the measure, was included, along with one open-ended question about the subjects' race. Items are scored from 0 (strongly disagree) to 3 (strongly agree). The position of the MEIM in the protocol was counter-balanced, appearing either at the beginning of the survey or at the end (after all other measures and immediately before the items about mental health history). The MEIM includes questions such as "I have spent time trying to find out more about my own ethnic group, such as its history, traditions, and customs," and "I have a lot of pride in my ethnic group and its accomplishments."
- Padua Inventory: The ten contamination items from the Padua Inventory for OCD (Sanavio, 1988), were used in this study. The 5-item rating scale employs the following wording for categories, based on the amount of distress caused by each item: 0: Not at all, 1: A little, 2: Quite a lot, 3: A lot, 4: Very much. Because we were concerned that the wording of the middle category might be misunderstood relative to the terms used for other categories intended to represent greater distress, we replaced "Quite a lot" with "Somewhat," as was done in our prior study (Williams et al, 2005). This is similar to the rating system employed by the OCI-R, for which the middle category has been renamed "Moderately" (Foa et al,

2002). The presentation of items within the Padua was randomized to minimize ordering effects. See the appendix for a list of items.

- Obsessive-Compulsive Inventory: The Obsessive-Compulsive Inventory, short version (OCI-R; Foa, Huppert, Leiberg, Langner, Kichic, Hajcak, & Salkovskis, 2002) is a newer self-report inventory for determining the diagnosis and overall severity of OCD that is also intended to be applicable to the general population in assessing subclinical obsessional thoughts and behaviors. The OCI-R yields a profile of frequency and distress for each symptom class in seven areas: washing, checking, doubting, ordering, obsessing, hoarding, and mental neutralizing. Like the Padua, items are scored from 0 (no distress) to 4 (very much distress). We use the three item washing scale for this study, which comprises items that are also part of the Padua (P03, P07, and P08).
- Maudsley Obsessional Compulsive Inventory: Included were the eight contamination items that were not duplicated from the Padua (MOCI; Hodgson & Rachman, 1977). These were not used in this analysis, but will be discussed later.
- Cultural Attitude Items: Fourteen supplementary items were generated regarding culturally influenced concerns or attitudes. These items were included to correlate with anxiety items to help determine which questions are related to psychopathology versus ethnically distinct concerns. These were also not used in this analysis, but will be discussed later.

Procedure

Data were collected via Time-sharing Experiments for the Social Sciences (TESS), a project that offers investigators a large, diverse, randomly selected subject population as a means of testing experimental ideas. TESS collects data for research projects by providing access to large-scale data collection instruments, one of these via the Internet, administered by Knowledge Networks. When a person agrees to participate, they are provided with free Internet access (via WebTV) and are given the necessary hardware for as long as they remain in the sample. This facilitates the participation of subjects from varied socioeconomic backgrounds.

Participants completed the measures via the Internet using WebTV, in the randomized order described above. We introduced thoughts about race in participants by administering the measure of ethnic identity either immediately before or immediately after anxiety items. Questions about ethnic identity were intended to prime the subject with thoughts about his or her own ethnic group, thereby

activating racial stereotypes. Half the subjects were randomly chosen to receive ethnic identity questions before the contamination items, and half the subjects were given the ethnic identity questions after the contamination items. We refer to experimental conditions as ethnicity salient and ethnicity non-salient. Participants in the salient condition answered the MEIM before the OCD scales, and participants in the non-salient condition received the MEIM after the OCD scales. The measures took approximately fourteen minutes to complete.

Results

Black-White Comparisons

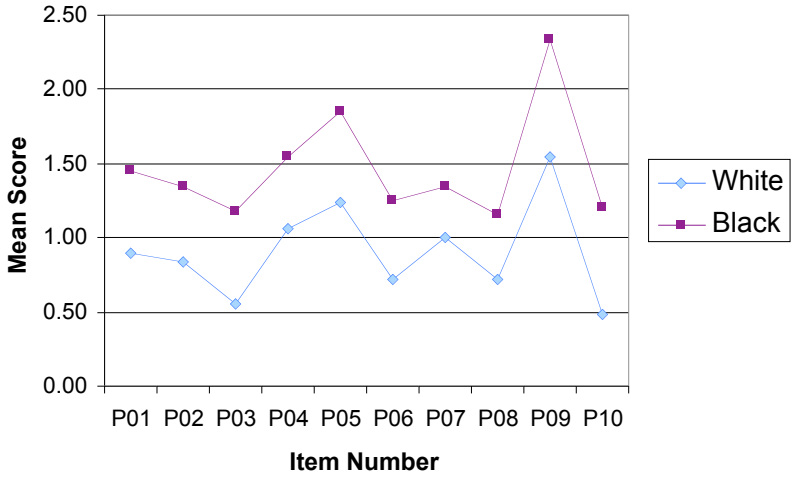
The unidimensionality of the Padua contamination scale was verified in data from the national sample by exploratory factor analysis, which confirmed a one-factor solution. The first eigenvalue was equal to 4.25, and the second was equal 0.24. Examination of the scree plot showed that eigenvalues declined linearly with more factors.

T-tests were used for descriptive comparisons between Blacks and Whites on the ten individual items and two contamination scales. Blacks scored higher on all items, and were significantly higher on 90% of the items and both scales. On the Padua contamination scale, Whites had a mean of 9.06 (SD 7.00) and Blacks had a mean of 14.65 (SD 8.33). This difference was significant $t(256)=4.39$, $p<0.001$. On the OCI-R washing scale, the same pattern was observed, with a mean of 2.28 (SD 2.56) for Whites and 3.69 (SD 2.87) for Blacks, where $t(256)=3.19$, $p<0.001$. These findings are detailed in Table 3 and Figure 2.

Table 3: Mean Values for Contamination Items and Scales

Variable	Race	N	Mean	Std Dev	Std Err	DF	t	Pr > |t|	Item content
P01	White	50	0.90	1.07	0.15	256	-2.79	0.006	touching money
	Black	208	1.45	1.30	0.09				
P02	White	50	0.84	0.82	0.12	256	-2.77	0.006	body secretions
	Black	208	1.34	1.20	0.08				
P03	White	50	0.56	0.91	0.13	255	-3.49	0.001	touching objects
	Black	207	1.18	1.17	0.08				
P04	White	50	1.06	1.10	0.15	256	-2.49	0.013	touching garbage
	Black	208	1.54	1.26	0.09				
P05	White	50	1.24	1.15	0.16	255	-3.11	0.002	use public toilets
	Black	207	1.85	1.25	0.09				
P06	White	50	0.72	0.86	0.12	256	-2.83	0.005	use public phone
	Black	208	1.25	1.25	0.09				
P07	White	50	1.00	1.25	0.18	256	-1.71	0.089	wash hands longer
	Black	208	1.35	1.32	0.09				
P08	White	50	0.72	0.90	0.13	254	-2.42	0.016	wash self
	Black	206	1.16	1.19	0.08				
P09	White	50	1.54	1.31	0.19	256	-3.82	0.000	contaminated wash
	Black	208	2.34	1.33	0.09				
P10	White	50	0.48	0.84	0.12	255	-3.94	0.000	animal wash
	Black	207	1.20	1.22	0.08				
PIcont	White	50	9.06	7.00	0.99	256	-4.39	<.0001	PI contamination scale
	Black	208	14.65	8.33	0.58				
OCIwash	White	50	2.28	2.56	0.36	256	-3.19	0.002	OCD washing scale
	Black	208	3.69	2.87	0.20				

Figure 2: Mean Scores for Padua Contamination Items



Experimental Manipulations

Means were computed for Blacks and Whites on the Padua contamination scale and the OCI-R washing scale based on experimental condition. Means and standard deviations for each group and condition are shown in Table 4. The effect of experimental condition (race salient vs. race non-salient) was tested using a t-test of differences between experimental groups within races. For Blacks, the difference between experimental conditions was significant, with the race salient group reporting higher contamination scale scores on the Padua with a mean of 15.95 (SD 8.85) for the salient condition and a mean of 13.57 (SD 7.73) for the non-salient condition, where t_{PI}=2.07, p=.40. The same was true of the OCI-R washing scale with a mean of 4.21 (SD 3.15) for the salient condition and 3.26 (SD 2.55) for the non-salient condition, t_{OCI}=2.41, p=.017. As hypothesized, in Whites, there was no significant difference between the experimental conditions. This is illustrated in Figures 3 and 4.

Figure 3: Padua Inventory Contamination Scores

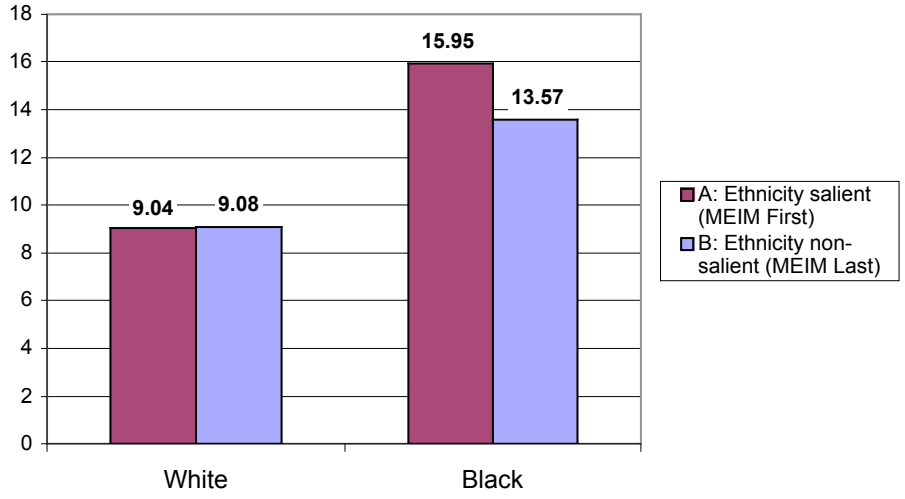


Figure 4: Obsessive Compulsive Inventory Contamination Scores

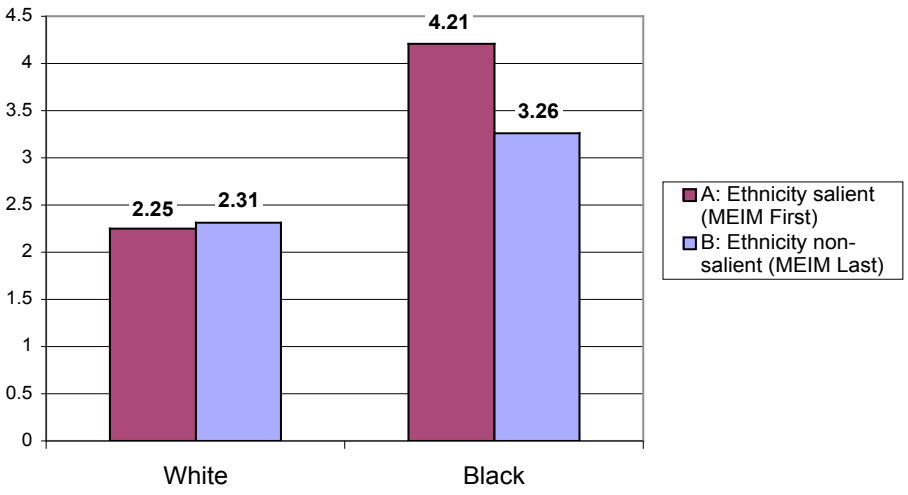


Table 4: Scale Scores by Race and Salience of Ethnicity

Variable	Race	Condition	N	Mean	Std Dev	Std Err
PI_{CONT}	White	Ethnicity salient (MEIM First)	24	9.04	7.06	1.44
		Ethnicity non-salient (MEIM Last)	26	9.08	7.08	1.39
	Black	Ethnicity salient (MEIM First)	95	15.95	8.85	0.91
		Ethnicity non-salient (MEIM Last)	113	13.57	7.73	0.73
OCI_{WASH}	White	Ethnicity salient (MEIM First)	24	2.25	2.57	0.53
		Ethnicity non-salient (MEIM Last)	26	2.31	2.60	0.51
	Black	Ethnicity salient (MEIM First)	95	4.21	3.15	0.32
		Ethnicity non-salient (MEIM Last)	113	3.26	2.55	0.24

Discussion

Interpretation of Findings

Blacks scored higher than Whites on every item and scale in this study. The consistent difference between groups on the contamination and washing scales demonstrates that racial bias on these measures is a larger cultural pattern in the US population rather than a local phenomenon. Evidence suggests that these differences are not an indication of increased pathological anxiety among African Americans, but are due to other factors. When Thomas, et al (2000) performed clinical interviews with high-scoring Blacks on a similar measure, they did not meet criteria for obsessive-compulsive disorder. The result of our experimental manipulation demonstrates that salience of race is one factor in the over endorsement of washing and contamination items by African Americans.

The Role of Race

One possibility is that African Americans are over-endorsing cleaning items to counteract negative stereotypes, resulting in a reporting bias in favor of exaggerated cleaning attitudes. Whaley (2001b) noted that self-presentation may be a factor in reporting certain pathological traits. Over-endorsement of cleaning items by Blacks could be a means of positive self-presentation to counter concerns about being negatively stereotyped.

If these compensations were unconscious, then the phenomenon would bear some similarity to Steele's construct of stereotype threat (1997), whereby Blacks are more likely to underperform on a difficult test if they believe it is a measure of intelligence and race is made salient (Steele &

Aronson, 1995). Stereotype threat, as it is traditionally understood, results in impaired performance due to mental interference. Stereotype threat mechanisms have not previously been used to describe differences in reports of psychopathology, however, and the generalization of the concept from the ability to psychopathology domains remains to be worked out both theoretically and empirically. The term "stereotype compensation" may better describe this phenomenon.

As demonstrated, unconscious anxiety due to racial stereotypes cannot account for all or even most of the difference between Blacks and Whites on the measures under study. It is likely that differing cultural practices, attitudes about housekeeping, and perhaps a culturally-embedded compensation due to generations of negative stereotyping all play a role. As described previously, historical restrictions and attitudes may have resulted in a cultural reaction whereby attitudes about the importance of cleanliness have been exaggerated to compensate.

Internet Sample

Although the initial pilot study involved a large Internet sample (Williams et al, 2005), subjects were self-selected and non-representative (Couper, 2000), a potential confound in that particular study and studies like the NADSD one described earlier (Ritsher et al, 2002). And, as in most Internet studies, in the previous study there was no way to ensure that respondents were honestly reporting demographic variables. In contrast, for the current study, the Internet was the ideal medium because, not only were participants selected at random for representation stratified geographically, but many extraneous experimental variables were eliminated. Prior work has demonstrated that race and gender of the experimenter, perceived experimenter attitudes, race of co-participants (tokenism effects), and many other cues can effect outcomes in studies designed to measure the effects of group membership (*e.g.* Danso & Esses, 2001). As an Internet study, this investigation is relatively free of such biases (Gosling, Vazire, Srivastava, & John, 2004). Additionally, the short length of this measure reduces the likelihood that participants would forget about the priming condition and eliminates confounds that may be introduced when many additional batteries are included. Furthermore, computer administration allows items to be randomly ordered and prevents questions from being answered out of order, another factor that could spoil the experimental manipulation. Web surveys also prevent non-response when compared to other modes of administration, such as telephone, and permit participants to spend more time thinking about their answers (Fricker, Galesic, Tourangeau, & Yan, 2005).

Limitations of Study

The small sample size for Whites is a limitation of this study. Due to restrictions on the number of respondent-minutes permitted by the TESS protocol, it was necessary to optimize the number of respondents versus survey length. Determination of the minimum survey length then determined the maximum number of participants that could be included. A proportionately larger number of African American subjects were necessary to detect differences in mean scale scores due to salience of racial group membership. Although not enough Whites could be included to determine if this manipulation caused significant differences in those scores, the pilot work with larger samples had not indicated this would be the case. However, the small sample of Whites limited the statistical power to conclude that the saliency effect detected in Blacks does not also exist in Whites. A larger sample of Whites would have been useful to document the race by salience condition interaction effects in the analysis.

The result of this experimental manipulation lends support to the hypothesis that racial salience is a factor in Black over-endorsement of washing and contamination items. Although it is assumed that differences in scores between the two experimental conditions is a result of unconscious processes, it could be that Blacks are intentionally over-endorsing washing items to appear less stereotypical, which would be presentation bias rather than a traditional priming effect. This study is not able to adequately differentiate between these possibilities. A study involving a carefully controlled post-experiment interview may be one way to investigate this, and will be further discussed in Study 4.

Study 2: Laboratory Experiments

Overview

Study 1 illustrated that the salience of race was a factor in the over-endorsement of contamination items. The purpose of this study was to determine if stereotype threat or some related desire to compensate for negative stereotyping could explain this effect. To this end, African American participants are subject to a racially threatening condition and scores on anxiety measures are compared. The threatening situation involves having a White experimenter and/or being told that certain minority groups typically give deviant responses to the measures provided.

Research Design and Methods

Participants

Participants for this study were recruited in 2004 through direct mail and telephone solicitation of a race-targeted sample from the Charlottesville area, as well as flyers posted in local establishments, and the UVa subject pool (N=546). Excluded from this group were participants reporting current or recent symptoms of obsessive-compulsive disorder (N=26), participants whose racial identification did not fit into the "Black/African American" or "White/Caucasian" categories, and those who reported having lived in the US for less than five years. Recent immigrants were excluded because there was concern that they may not identify with the racial/ethnic categories used in the US.

Based on self-report, subjects were 25.3% Black and 74.3% White. Community members made up 17.4% of the sample and students were 82.6%. The sample was somewhat skewed in favor of females at 55.5%, and this gap was even greater among African Americans who were 69.6% female. Community participants tended to be older than student participants. Table 5 provides details of participants by race (Black or White), source (student or community), gender, and age.

Table 5: Race, Source, Gender and Age of Laboratory Subjects

Race	Source	Gender	N	Mean Age	Std Dev
Black	Community	Male	14	43.93	16.52
		Female	29	42.41	12.97
	Student	Male	28	18.74	0.86
		Female	67	18.41	1.02
White	Community	Male	29	45.85	14.96
		Female	23	43.00	13.99
	Student	Male	172	19.27	1.47
		Female	184	18.84	1.96

Measures

The following comprise the battery of measures that were administered to participants. The complete protocol appears in Appendix B.

- Informed Consent: The first page was a consent form, informing participants of their rights as experimental subjects, and also included a non-biasing description of the study. Instead of using potentially threatening phrases such as "Ethnic Identity and Race" we use the more neutral title "Clinical Variables in the Assessment of Anxiety." Participants were free to withdraw at any point during the experiment.
- Demographics: Each packet included demographic questions about the subject's age, sex, socio-economic status (estimated based on reported level of education and parents' level of education), and mental health history for anxiety disorders.
- Ethnic Identity Measure: In an attempt to quantify ethnic identity, Phinney's (1992) Multigroup Ethnic Identity Measure, mentioned previously, was included. The MEIM, which is suitable for use with any ethnic group, contains 20 polytomously scored items about degree of ethnic identification and 3 open-ended questions about the subject's race. Included are subscales for determining feelings of affirmation and belonging, ethnic identity achievement, ethnic behaviors, and other group orientation.
- Padua Inventory: The Padua Inventory (Sanavio, 1988), mentioned previously, contains 60 polytomously scored items about obsessions and compulsions in four main areas: contamination fears, checking, impaired control over mental activities, and worries about losing control over one's behaviors.

- Maudsley Obsessional Compulsive Inventory: The MOCI (Hodgson & Rachman, 1977) contains 30 dichotomously scored (true/false) items that assess obsessive-compulsive symptoms in the areas of contamination fears and washing behaviors, checking, and worries. Scoring for items in this measure are changed to polytomous to match the other measures in the packet and also to provide more gradations in the data.
- Beck Anxiety Inventory: The Beck Anxiety Inventory (BAI; Beck, 1990) consists of 21 polytomously scored items describing subjective, somatic, and panic-related symptoms, including both physiological and cognitive components. The BAI is included due to its widespread use in clinical and research settings and its ability to assess anxiety symptoms not included in the Padua Inventory.
- Center for Epidemiologic Studies Depression Scale: Developed by the Center for Epidemiologic Studies (CESD; Radloff, 1977), this is a 20-item, self-report scale is designed to measure depression for the general population, by inquiring about depressive symptoms.
- Positive and Negative Affectivity Schedule: The PANAS (Watson, Clark & Tellegen, 1988) is designed to measure affect in different situations. For this study, participants were asked to contrast their feelings “now” (while being tested) versus “in general.” Items were rated on a scale from 0 “very slightly or not at all” to 4 “extremely.”
- Obsessional Beliefs Questionnaire: The Obsessional Belief Questionnaire (OBQ; OCCWG, 1997; OCCWG, 2003) is a 87-item self-report measure assessing dysfunctional beliefs relevant to OCD, consisting of six sub-scales: inflated responsibility, over-importance of thoughts, control of thoughts, overestimation of threat, intolerance of uncertainty, and perfectionism. Only a few items from this measure are included for research purposes, the 14-item Threat Estimation subscale and one item about control of thoughts.
- Obsessive-Compulsive Inventory: The Obsessive-Compulsive Inventory is a self-report inventory for determining the diagnosis and overall severity of OCD that is also intended to be applicable to the general population in assessing subclinical obsessional thoughts and behaviors. The OCI-R (Foa et al, 2002) yields a profile of frequency and distress for each symptom class in seven subscales: washing, checking, doubting, ordering, obsessing, hoarding, and mental neutralizing.

- Spielberger State-Trait Anxiety Inventory: This scale has been used in the past to measure anxiety related to evaluation apprehension (STAI; Spielberger, Gorsuch, & Lushene 1970). The STAI differentiates between the temporary condition of "state anxiety" and the more general and long-standing quality of "trait anxiety." The "state" scale evaluates feelings of apprehension, tension, nervousness, and worry. Scores on the "state" scale increase in response to physical danger and psychological stress, and decrease as a result of relaxation training. The state portion of the STAI is administered to subjects in this protocol.
- Cultural Attitude Items: Approximately 30 supplementary items were generated regarding culturally influenced concerns or attitudes (*e.g.* "I have to work harder than most people to prove myself," and "I am afraid others will think I am untidy.") These items will be correlated to items in other anxiety measures during analysis to help determine which questions are related to psychopathology versus ethnically distinct concerns. These items are not used in this study, but will be discussed further in Study 3.
- Validity Items: Because of the variability in settings under which participants will be completing these measures, it is possible that some subjects may not be appropriately attending to items. Additionally, some participants may be offering deceptive data, which does occur in a traditional laboratory setting but is more likely when participants are not in the presence of an experimenter. Therefore several items are added to which it would be unlikely that any respondent would endorse as true (*e.g.* "I have had nothing to eat or drink for the past year.") This was to facilitate identification of invalid data prior to analysis.
- Structured Clinical Interview for DSM-IV Axis I Disorders: The SCID is a widely used semi-structured diagnostic interview designed to assist clinicians, researchers, and trainees in making reliable DSM-IV psychiatric diagnoses (SCID; First, Spitzer, Gibbon, & Williams, 1997). For the purposes of some research studies, non-clinician research assistants have been trained to use the SCID. The OCD assessment portion of the SCID was included at the end of the protocol and administered by trained research assistants.
- Yale-Brown Obsessive Compulsive Scale: This inventory measures the intensity of symptoms in OCD patients (YBOCS; Goodman et al, 1989). The YBOCS was administered to any subject reporting the presence of obsessions or compulsions on the SCID.

- Deception Form: The University of Virginia's IRB had determined that the protocol includes deception. The informed consent form says that "the purpose of the study is to determine which methods are effective in accurately screening for anxiety (*i.e.* a person's tendency to worry or doubt)," when in actuality we are studying ethnic differences in response to symptoms of anxiety disorders, such as OCD. Participants were given the option of withdrawing their completed survey from the analysis if they found this objectionable.
- Debriefing Materials: These included a description of the study, reference materials for those interested in learning more about anxiety disorders, and contact information for relevant mental health organizations.

Procedure

Subjects were given the measures previously described, although only certain scales of some measures were used where noted. Subjects completed paper and pencil measures. As the race of co-participants can affect performance, to reduce the potential of "tokenism" effects and other extraneous variables, subjects were brought into the laboratory individually. Measures were provided by an experimenter who was instructed to remain nearby for the duration of the experiment. After the subject completed the paper and pencil measures, the experimenter administered the SCID for OCD symptoms, and then the YBOCS if the subject endorsed any obsessions or compulsions.

Subjects were not required to provide names or any other identifying information. Students received course credit for participation and community subjects were paid $25. Personal information required for financial compensation was collected separately to preserve anonymity. Data were entered by hand by experienced staff at the UVa Center for Survey Research, with post-data entry validity checks at the rate of 15%.

The potential for stereotype-threat induced bias was studied by varying the race of the experimenter and the type of instruction given to the participant. About half of the participants were told that the measures administered have shown ethnic bias in the past and that certain groups tended to give "deviant" responses. To induce an evaluative threat, participants were also told they would receive feedback on their measures from the experimenter. This manipulation was intended to exacerbate anxiety and evaluation apprehension. To reduce stereotype threat for the remaining subjects, the experimenter delivered stereotype-reducing statements during the instruction phase. This manipulation is expected to alleviate anxiety and evaluation apprehension to the point where

questionnaire responses would be free of anxieties caused by stereotype threat. A few subjects were given no special instructions as a control.

The experiment takes the form of a 2 (Black and White participant) X 2 (Black and White experimenter) X 3 (anxiety-inducing instructions, anxiety-reducing instructions, and no instructions) design. The primary dependent variables are scores on anxiety scales, with race of participant, degree of ethnic identification, race of experimenter, and type of experimenter script as independent variables.

Results

Descriptive Findings

T-tests were used for descriptive comparisons between Blacks and Whites on all scales and subscales. Significant differences were evident on several measures, as shown on the next page in Table 6. The largest differences appear on scales related to contamination concerns and ethnic identification, with Black participants scoring higher than White participants. (See Appendix D for mean scores for additional racial/ethnic groups.)

Table 6: Scale Scores by Race of Subject

Scale (Variable)	Race	N	Mean	Std Dev	Std Err	DF	t Value	Pr > |t|
Total Padua Inventory	Black	138	40.00	30.89	2.63	544	3.19	0.0015
(PTOTAL)	White	408	31.87	23.97	1.19			
PI Contamination	Black	138	10.86	8.01	0.68	543	8.04	<.0001
(PCONT1)	White	407	5.89	5.57	0.28			
PI Checking	Black	138	13.36	12.68	1.08	544	2.65	0.0084
(PCHK2)	White	408	10.60	9.76	0.48			
PI Mental Control	Black	138	15.94	14.17	1.21	544	1.51	0.1319
(PMENT)	White	408	14.09	11.84	0.59			
PI Impulsivity Concern	Black	138	3.12	4.09	0.35	544	-1.80	0.0728
(PIMPUL)	White	408	3.92	4.64	0.23			
Total MOCI	Black	136	34.77	11.28	0.97	541	5.81	<.0001
(MTOTAL)	White	407	28.17	11.54	0.57			
MOCI Contamination	Black	137	12.69	5.04	0.43	542	9.77	<.0001
(MCONT1)	White	407	8.02	4.77	0.24			
MOCI Checking	Black	138	7.41	4.06	0.35	543	2.47	0.0138
(MCHK2)	White	407	6.45	3.91	0.19			
Total OCI-R	Black	138	13.52	9.91	0.84	544	1.70	0.0890
(OTOTAL)	White	408	12.00	8.77	0.43			
OCI Washing	Black	138	2.56	2.67	0.23	542	6.36	<.0001
(OWASH)	White	406	1.31	1.70	0.08			
OCI Checking	Black	135	1.50	2.11	0.18	538	1.51	0.1309
(OCHECK)	White	405	1.20	1.90	0.09			
OCI Hoarding	Black	138	2.63	2.81	0.24	544	-0.80	0.4232
(OHOARD)	White	408	2.85	2.78	0.14			
OCI Thought Neutralizing	Black	137	0.75	1.45	0.12	541	-0.31	0.7563
(ONEUT)	White	406	0.80	1.52	0.08			
OCI Obsessing	Black	138	1.87	2.42	0.21	543	-1.37	0.1716
(OOBSES)	White	407	2.20	2.48	0.12			
OCI Ordering	Black	135	4.10	2.70	0.23	540	1.69	0.0908
(OORDER)	White	407	3.63	2.82	0.14			
Beck Anxiety Inventory	Black	138	11.20	8.96	0.76	543	0.62	0.5332
(BAITOTAL)	White	407	10.68	8.33	0.41			
State-Trait Inventory	Black	138	14.62	11.29	0.96	544	1.44	0.1493
(STOTAL)	White	408	13.22	9.24	0.46			
CESD Depression	Black	137	15.93	10.90	0.93	542	3.01	0.0028
(CETOTAL)	White	407	13.16	8.76	0.43			
PANAS Now	Black	138	23.51	10.21	0.87	544	2.54	0.0113
(PGTOTAL)	White	408	21.19	8.95	0.44			
PANAS in General	Black	138	22.92	10.78	0.92	544	3.22	0.0014
(PNTOTAL)	White	408	20.10	8.13	0.40			
Total Multi-Ethnic ID Measure	Black	137	29.00	6.18	0.53	542	12.66	<.0001
(EETHNIC)	White	407	21.09	6.37	0.32			
MEIM Belonging	Black	137	12.84	2.45	0.21	542	10.88	<.0001
(EBELNG)	White	407	9.81	2.93	0.15			
MEIM Identity Achievement	Black	138	15.12	3.72	0.32	544	12.49	<.0001
(EIDACH)	White	408	10.45	3.82	0.19			
MEIM Ethnic Behaviors	Black	137	3.78	1.58	0.14	542	3.67	0.0003
(EBEHAV)	White	407	3.27	1.36	0.07			
MEIM Other Orientation	Black	137	15.38	2.46	0.21	542	2.19	0.0291
(EOTHER)	White	407	14.83	2.60	0.13			

In comparing participants who met DSM-IV-TR (2000) criteria for obsessive-compulsive disorder to those who did not, a similar pattern of Black over-endorsement occurs, as shown below in Table 7. There were not enough participants to determine significant differences in mean scores for OCD measures between Blacks and Whites. However, a proportionately higher percentage of Black participants met diagnostic criteria for OCD (8.61% for Blacks versus 3.09% for Whites).

Table 7: OCD Diagnosis, Race, and Scale Scores of Laboratory Subjects

Diagnosis	Race	Measure	N	Mean Score	Std Dev
No OCD	Black	Padua Inventory	138	40.00	30.89
		MOCI	136	34.77	11.28
		OCI-R	138	13.52	9.91
	White	Padua Inventory	408	31.86	23.97
		MOCI	407	28.17	11.54
		OCI-R	408	11.99	8.77
OCD Diagnosis	Black	Padua Inventory	13	83.04	32.83
		MOCI	13	48.69	11.89
		OCI-R	13	28.31	9.62
		YBOCS	13	16.23	6.29
	White	Padua Inventory	13	74.46	42.94
		MOCI	13	40.38	14.18
		OCI-R	13	28.46	13.72
		YBOCS	13	12.23	5.75

Logistic regression was used to predict an OCD diagnosis, using total scale scores for the Padua Inventory, MOCI, OCI-R and race. When modeled separately with race and its interaction, the OCI-R was the best predictor of OCD diagnosis. For the main effect of OCI-R, χ^2 (1, 572)=38.10 and p<.0001, but neither race nor the interaction of race and OCI-R score were significant, with χ^2 (1, 572)=1.27, p=.26, and χ^2 (1, 572)=0.07, p=.79, respectively. Findings were similar for the other two models.

Experimental Findings

There were few significant differences in scale scores due to either the instructions given to participants (Tables 8 and 9) or the race of the experimenter (Tables 10 and 11). Although there were three levels for experimenter script – Anxiety-Reducing, Neutral-Control, and Anxiety-Inducing, the dependent variables did not appear to be linearly related to the categories as predicted. For example, subjects given the Anxiety-Inducing script did not on average report less anxiety than those

give the Neutral-Control script, so the Neutral-Control category was removed for analyses involving the effects of the experimenter instructions. This left two instead of three categories for the experimenter script independent variable. T-tests were used to compare scores between groups recieving anxiety-inducing instructions versus anxiety-reducing instructions. This was done separately for Blacks and Whites. For Whites, only one measure demonstrated significant differences due to the effect of the instructions, and this was the "OCI Ordering" subscale, with the group under presumed threat (Anxiety-Inducing script) reporting less anxiety ($t(320)=2.77$, $p=.006$). It is not clear how this finding might be interpreted as no differences were expected from White participants on this measure. Among Blacks, scores on both PANAS scales were higher for those receiving the Anxiety-Reducing script, counter to expectations ($t(111)=2.33$, $p=.021$ for the PANAS in General, and $t(111)=2.64$, $p.=.009$ for the PANAS Now).

The same process with t-tests was used to examine the main effects of experimenter race on measures. Only subjects with either a Black or White experimenter were included in these analyses. In Whites, only the PANAS Now scale showed significant differences due to the race of the experimenter, with higher scores produced when the experimenter was Black ($t(352)=2.32$, $p=.021$). Among African American participants, the OCI-R washing scale was significantly higher for Blacks who were tested with a Black experimenter ($t=2.23(119)$, $p=.028$), which is in the opposite direction of predictions.

Two and three-way ANOVAs were used to examine interaction effects due to participant race by script and participant race by experimenter race on relevant scales. Although both PANAS scales demonstrated significant main effects in all three independent variables, the only significant interaction was for the PANAS in General score, participant race by script ($f(1,371)=4.78$, $p=.029$). The OCI-R washing scale also demonstrated a significant participant by experimenter race interaction ($f(1,432)=4.49$, $p=.035$).

Table 8: White Participants Scale Scores by Experimenter Script

Scale (Variable)	Experimenter Script	N	Mean	Std Dev	Std Err	DF	t Value	Pr > |t|
Total Padua Inventory	Anxiety-Reducing	135	31.95	23.79	2.05	321	0.17	0.8637
(PTOTAL)	Anxiety-Inducing	188	31.48	24.53	1.79			
PI Contamination	Anxiety-Reducing	134	6.33	5.81	0.50	320	1.28	0.2010
(PCONT1)	Anxiety-Inducing	188	5.52	5.36	0.39			
PI Checking	Anxiety-Reducing	135	11.03	10.39	0.89	321	0.49	0.6247
(PCHK2)	Anxiety-Inducing	188	10.47	9.87	0.72			
PI Mental Control	Anxiety-Reducing	135	13.77	11.32	0.97	321	-0.23	0.8179
(PMENT)	Anxiety-Inducing	188	14.08	12.07	0.88			
PI Impulsivity Concern	Anxiety-Reducing	135	3.35	3.64	0.31	321	-1.38	0.1681
(PIMPUL)	Anxiety-Inducing	188	4.05	5.02	0.37			
Total MOCI	Anxiety-Reducing	135	28.95	12.00	1.03	320	0.91	0.3628
(MTOTAL)	Anxiety-Inducing	187	27.74	11.51	0.84			
MOCI Contamination	Anxiety-Reducing	135	8.37	4.95	0.43	320	0.63	0.5272
(MCONT1)	Anxiety-Inducing	187	8.02	4.76	0.35			
MOCI Checking	Anxiety-Reducing	135	6.71	4.14	0.36	320	1.31	0.1920
(MCHK2)	Anxiety-Inducing	187	6.12	3.87	0.28			
Total OCI-R	Anxiety-Reducing	135	12.71	9.01	0.78	321	1.18	0.2382
(OTOTAL)	Anxiety-Inducing	188	11.53	8.82	0.64			
OCI Washing	Anxiety-Reducing	134	1.46	1.83	0.16	319	1.60	0.1097
(OWASH)	Anxiety-Inducing	187	1.16	1.59	0.12			
OCI Checking	Anxiety-Reducing	135	1.30	2.05	0.18	319	0.08	0.9350
(OCHECK)	Anxiety-Inducing	186	1.28	2.02	0.15			
OCI Hoarding	Anxiety-Reducing	135	2.81	2.79	0.24	321	-0.07	0.9424
(OHOARD)	Anxiety-Inducing	188	2.83	2.71	0.20			
OCI Thought Neutralizing	Anxiety-Reducing	134	0.78	1.46	0.13	319	-0.41	0.6803
(ONEUT)	Anxiety-Inducing	187	0.85	1.67	0.12			
OCI Obsessing	Anxiety-Reducing	135	2.19	2.55	0.22	320	0.38	0.7026
(OOBSES)	Anxiety-Inducing	187	2.09	2.32	0.17			
OCI Ordering	Anxiety-Reducing	135	4.19	3.00	0.26	320	2.77	0.0059
(OORDER)	Anxiety-Inducing	187	3.29	2.72	0.20			
Beck Anxiety Inventory	Anxiety-Reducing	135	10.20	7.31	0.63	320	-0.49	0.6248
(BAITOTAL)	Anxiety-Inducing	187	10.64	8.40	0.61			
State-Trait Inventory	Anxiety-Reducing	135	14.10	9.71	0.84	321	1.79	0.0736
(STOTAL)	Anxiety-Inducing	188	12.26	8.56	0.62			
CESD Depression	Anxiety-Reducing	135	13.62	8.72	0.75	320	1.20	0.2303
(CETOTAL)	Anxiety-Inducing	187	12.44	8.56	0.63			
PANAS Now	Anxiety-Reducing	135	21.49	9.55	0.82	321	0.84	0.3999
(PGTOTAL)	Anxiety-Inducing	188	20.63	8.68	0.63			
PANAS in General	Anxiety-Reducing	135	20.70	7.58	0.65	321	1.27	0.2042
(PNTOTAL)	Anxiety-Inducing	188	19.54	8.40	0.61			
Total Multi-Ethnic ID	Anxiety-Reducing	135	20.95	6.77	0.58	320	0.34	0.7344
(EETHNIC)	Anxiety-Inducing	187	20.71	6.07	0.44			
MEIM Belonging	Anxiety-Reducing	135	9.84	2.91	0.25	320	0.69	0.4925
(EBELNG)	Anxiety-Inducing	187	9.61	2.99	0.22			
MEIM Identity Ach.	Anxiety-Reducing	135	10.31	4.18	0.36	321	0.00	0.9998
(EIDACH)	Anxiety-Inducing	188	10.31	3.64	0.27			
MEIM Ethnic Behaviors	Anxiety-Reducing	135	3.30	1.39	0.12	321	0.86	0.3885
(EBEHAV)	Anxiety-Inducing	188	3.16	1.32	0.10			
MEIM Other Orientation	Anxiety-Reducing	134	14.52	2.57	0.22	320	-1.44	0.1518
(EOTHER)	Anxiety-Inducing	188	14.94	2.56	0.19			

Table 9: Black Participant Scale Scores by Experimenter Script

Scale (Variable)	Experimenter Script	N	Mean	Std Dev	Std Err	DF	t Value	Pr > |t|
Total Padua Inventory (PTOTAL)	Anxiety-Reducing	52	40.54	34.24	4.75	111	-0.05	0.9641
	Anxiety-Inducing	61	40.80	27.63	3.54			
PI Contamination (PCONT1)	Anxiety-Reducing	52	11.33	8.59	1.19	111	0.48	0.6347
	Anxiety-Inducing	61	10.61	7.36	0.94			
PI Checking (PCHK2)	Anxiety-Reducing	52	13.20	13.51	1.87	111	-0.52	0.6018
	Anxiety-Inducing	61	14.48	12.39	1.59			
PI Mental Control (PMENT)	Anxiety-Reducing	52	15.59	15.37	2.13	111	-0.14	0.8875
	Anxiety-Inducing	61	15.95	11.67	1.49			
PI Impulsivity Concern (PIMPUL)	Anxiety-Reducing	52	2.95	3.92	0.54	111	-0.49	0.6262
	Anxiety-Inducing	61	3.33	4.27	0.55			
Total MOCI (MTOTAL)	Anxiety-Reducing	51	34.45	12.25	1.72	109	-0.40	0.6922
	Anxiety-Inducing	60	35.33	11.21	1.45			
MOCI Contamination (MCONT1)	Anxiety-Reducing	51	12.80	5.55	0.78	110	-0.34	0.7372
	Anxiety-Inducing	61	13.14	5.02	0.64			
MOCI Checking (MCHK2)	Anxiety-Reducing	52	6.97	4.53	0.63	111	-0.92	0.3618
	Anxiety-Inducing	61	7.69	3.80	0.49			
Total OCI-R (OTOTAL)	Anxiety-Reducing	52	13.69	9.95	1.38	111	-0.11	0.9098
	Anxiety-Inducing	61	13.89	8.94	1.14			
OCI Washing (OWASH)	Anxiety-Reducing	52	2.58	2.85	0.40	111	0.04	0.9690
	Anxiety-Inducing	61	2.56	2.49	0.32			
OCI Checking (OCHECK)	Anxiety-Reducing	52	1.52	2.27	0.31	109	-0.53	0.5951
	Anxiety-Inducing	59	1.75	2.20	0.29			
OCI Hoarding (OHOARD)	Anxiety-Reducing	52	2.81	2.99	0.41	111	0.25	0.8006
	Anxiety-Inducing	61	2.67	2.70	0.35			
OCI Thought Neutralizing (ONEUT)	Anxiety-Reducing	51	0.59	1.24	0.17	110	-0.80	0.4267
	Anxiety-Inducing	61	0.80	1.56	0.20			
OCI Obsessing (OOBSES)	Anxiety-Reducing	52	1.84	2.41	0.33	111	0.08	0.9390
	Anxiety-Inducing	61	1.80	2.20	0.28			
OCI Ordering (OORDER)	Anxiety-Reducing	51	4.29	2.64	0.37	108	0.24	0.8077
	Anxiety-Inducing	59	4.17	2.70	0.35			
Beck Anxiety Inventory (BAITOTAL)	Anxiety-Reducing	52	11.82	9.77	1.36	111	0.81	0.4221
	Anxiety-Inducing	61	10.44	8.41	1.08			
State-Trait Inventory (STOTAL)	Anxiety-Reducing	52	13.92	11.59	1.61	111	0.02	0.9821
	Anxiety-Inducing	61	13.88	10.17	1.30			
CESD Depression (CETOTAL)	Anxiety-Reducing	51	16.46	11.95	1.67	110	0.97	0.3350
	Anxiety-Inducing	61	14.52	9.30	1.19			
PANAS Now (PGTOTAL)	Anxiety-Reducing	52	26.01	10.24	1.42	111	2.33	0.0216
	Anxiety-Inducing	61	21.56	10.03	1.28			
PANAS in General (PNTOTAL)	Anxiety-Reducing	52	25.44	11.47	1.59	111	2.64	0.0094
	Anxiety-Inducing	61	20.20	9.61	1.23			
Total Multi-Ethnic ID (EETHNIC)	Anxiety-Reducing	52	29.30	6.03	0.84	110	-0.02	0.9871
	Anxiety-Inducing	60	29.32	5.83	0.75			
MEIM Belonging (EBELNG)	Anxiety-Reducing	52	13.08	2.38	0.33	110	0.30	0.7684
	Anxiety-Inducing	60	12.95	2.17	0.28			
MEIM Identity Ach. (EIDACH)	Anxiety-Reducing	52	15.34	3.95	0.55	111	0.09	0.9264
	Anxiety-Inducing	61	15.28	3.43	0.44			
MEIM Ethnic Behaviors (EBEHAV)	Anxiety-Reducing	52	3.65	1.49	0.21	110	-0.65	0.5143
	Anxiety-Inducing	60	3.85	1.66	0.21			
MEIM Other Orientation (EOTHER)	Anxiety-Reducing	52	15.56	2.29	0.32	110	0.44	0.6639
	Anxiety-Inducing	60	15.35	2.70	0.35			

Table 10: White Participant Scale Scores by Race of Experimenter

Scale (Variable)	Experimenter	N	Mean	Std Dev	Std Err	DF	t Value	Pr > |t|
Total Padua Inventory	Black	209	31.71	24.77	1.71	352	-0.16	0.8734
(PTOTAL)	White	145	32.13	23.45	1.95			
PI Contamination	Black	209	5.81	5.34	0.37	351	-0.43	0.6640
(PCONT1)	White	144	6.08	6.07	0.51			
PI Checking	Black	209	10.53	10.21	0.71	352	-0.17	0.8686
(PCHK2)	White	145	10.70	9.47	0.79			
PI Mental Control	Black	209	14.19	12.42	0.86	352	0.16	0.8735
(PMENT)	White	145	13.99	11.14	0.93			
PI Impulsivity Concern	Black	209	3.99	4.91	0.34	352	0.31	0.7567
(PIMPUL)	White	145	3.84	4.05	0.34			
Total MOCI	Black	209	27.61	11.73	0.81	351	-0.68	0.4962
(MTOTAL)	White	144	28.47	11.60	0.97			
MOCI Contamination	Black	209	7.92	4.78	0.33	351	-0.38	0.7076
(MCONT1)	White	144	8.12	4.94	0.41			
MOCI Checking	Black	209	6.20	3.93	0.27	351	-0.72	0.4742
(MCHK2)	White	144	6.50	3.86	0.32			
Total OCI-R	Black	209	11.86	9.01	0.62	352	-0.21	0.8314
(OTOTAL)	White	145	12.06	8.56	0.71			
OCI Washing	Black	208	1.29	1.63	0.11	350	-0.33	0.7386
(OWASH)	White	144	1.35	1.75	0.15			
OCI Checking	Black	207	1.16	1.95	0.14	349	-0.31	0.7538
(OCHECK)	White	144	1.23	1.83	0.15			
OCI Hoarding	Black	209	2.81	2.73	0.19	352	-0.44	0.6598
(OHOARD)	White	145	2.94	2.80	0.23			
OCI Thought Neutralizing	Black	208	0.72	1.50	0.10	350	-0.58	0.5641
(ONEUT)	White	144	0.81	1.40	0.12			
OCI Obsessing	Black	209	2.18	2.49	0.17	351	0.54	0.5910
(OOBSES)	White	144	2.04	2.38	0.20			
OCI Ordering	Black	208	3.65	2.87	0.20	351	-0.18	0.8556
(OORDER)	White	145	3.71	2.86	0.24			
Beck Anxiety Inventory	Black	208	10.82	8.88	0.62	351	0.44	0.6608
(BAITOTAL)	White	145	10.42	8.01	0.67			
State-Trait Inventory	Black	209	13.60	9.32	0.65	352	1.34	0.1805
(STOTAL)	White	145	12.24	9.39	0.78			
CESD Depression	Black	209	12.87	8.94	0.62	351	-0.78	0.4379
(CETOTAL)	White	144	13.61	8.75	0.73			
PANAS Now	Black	209	21.35	9.50	0.66	352	0.38	0.7025
(PGTOTAL)	White	145	20.98	8.15	0.68			
PANAS in General	Black	209	21.09	8.25	0.57	352	2.32	0.0211
(PNTOTAL)	White	145	19.04	8.04	0.67			
Total Multi-Ethnic ID Measure	Black	209	20.87	6.43	0.44	351	-0.97	0.3347
(EETHNIC)	White	144	21.53	6.01	0.50			
MEIM Belonging	Black	209	9.73	2.83	0.20	351	-1.06	0.2876
(EBELNG)	White	144	10.07	3.05	0.25			
MEIM Identity Achievement	Black	209	10.28	3.90	0.27	352	-0.89	0.3761
(EIDACH)	White	145	10.64	3.49	0.29			
MEIM Ethnic Behaviors	Black	208	3.25	1.33	0.09	351	-0.58	0.5592
(EBEHAV)	White	145	3.33	1.40	0.12			
MEIM Other Orientation	Black	209	14.84	2.55	0.18	351	0.16	0.8751
(EOTHER)	White	144	14.80	2.56	0.21			

Table 11: Black Participant Scale Scores by Race of Experimenter

Scale (Variable)	Experimenter	N	Mean	Std Dev	Std Err	DF	t Value	Pr > |t|
Total Padua Inventory	Black	72	44.10	32.59	3.84	119	1.50	0.1364
(PTOTAL)	White	49	35.78	25.55	3.65			
PI Contamination	Black	72	11.77	8.40	0.99	119	1.55	0.1229
(PCONT1)	White	49	9.49	7.11	1.02			
PI Checking	Black	72	14.95	13.86	1.63	119	1.46	0.1467
(PCHK2)	White	49	11.56	10.20	1.46			
PI Mental Control	Black	72	17.52	14.30	1.69	119	1.09	0.2778
(PMENT)	White	49	14.81	12.04	1.72			
PI Impulsivity Concern	Black	72	3.52	3.98	0.47	119	0.74	0.4601
(PIMPUL)	White	49	2.96	4.21	0.60			
Total MOCI	Black	71	35.46	11.87	1.41	118	0.52	0.6065
(MTOTAL)	White	49	34.37	10.40	1.49			
MOCI Contamination	Black	72	12.81	5.24	0.62	119	0.64	0.5215
(MCONT1)	White	49	12.22	4.48	0.64			
MOCI Checking	Black	72	7.62	3.97	0.47	119	0.25	0.8031
(MCHK2)	White	49	7.43	4.24	0.61			
Total OCI-R	Black	72	14.67	9.83	1.16	119	1.45	0.1495
(OTOTAL)	White	49	12.15	8.63	1.23			
OCI Washing	Black	72	3.03	2.94	0.35	119	2.23	0.0277
(OWASH)	White	49	1.94	2.13	0.30			
OCI Checking	Black	69	1.74	2.36	0.28	116	1.43	0.1558
(OCHECK)	White	49	1.16	1.83	0.26			
OCI Hoarding	Black	72	2.85	3.10	0.37	119	1.07	0.2874
(OHOARD)	White	49	2.31	2.07	0.30			
OCI Thought Neutralizing	Black	71	0.85	1.64	0.19	118	0.79	0.4324
(ONEUT)	White	49	0.63	1.13	0.16			
OCI Obsessing	Black	72	1.83	2.16	0.25	119	-0.64	0.5234
(OOBSES)	White	49	2.10	2.55	0.36			
OCI Ordering	Black	70	4.23	2.80	0.33	116	0.58	0.5605
(OORDER)	White	48	3.94	2.44	0.35			
Beck Anxiety Inventory	Black	72	11.94	9.15	1.08	119	0.96	0.3386
(BAITOTAL)	White	49	10.36	8.42	1.20			
State-Trait Inventory	Black	72	14.56	11.28	1.33	119	-0.52	0.6013
(STOTAL)	White	49	15.69	12.13	1.73			
CESD Depression	Black	72	16.26	11.02	1.30	119	-0.03	0.9729
(CETOTAL)	White	49	16.33	11.28	1.61			
PANAS Now	Black	72	24.97	9.85	1.16	119	1.58	0.1169
(PGTOTAL)	White	49	22.01	10.51	1.50			
PANAS in General	Black	72	24.10	11.31	1.33	119	1.03	0.3044
(PNTOTAL)	White	49	22.05	9.76	1.39			
Total Multi-Ethnic ID Measure	Black	71	29.13	6.15	0.73	118	0.03	0.9723
(EETHNIC)	White	49	29.09	6.51	0.93			
MEIM Belonging	Black	71	12.83	2.56	0.30	118	0.49	0.6216
(EBELNG)	White	49	12.60	2.53	0.36			
MEIM Identity Achievement	Black	72	15.17	3.70	0.44	119	-0.22	0.8240
(EIDACH)	White	49	15.32	3.92	0.56			
MEIM Ethnic Behaviors	Black	71	3.89	1.42	0.17	118	0.18	0.8594
(EBEHAV)	White	49	3.84	1.69	0.24			
MEIM Other Orientation	Black	71	15.16	2.36	0.28	118	-1.08	0.2826
(EOTHER)	White	49	15.65	2.65	0.38			

Discussion

Laboratory Experiments

As described above, there seemed to be little effect due to the experimenter script manipulation. As mean scores on anxiety measures did not correspond as predicted to the experimenter scripts, it could be that the manipulation failed to induce feelings of threat and/or anxiety in participants. It could also mean that feelings of threat generated by verbal instructions do not bias test outcomes, or that threatening statements affect responses in an unpredictable manner.

Likewise the race of the experimenter seemed to have little effect on the outcome of anxiety measures. Where an effect was noted, it occurred in the opposite direction of predictions. This would indicate that Black participants are not inflating scores on measures due to feelings of threat or discomfort with an experimenter of a different race. If a threat reaction is occurring, Black scores are being suppressed when in the presence of a White interviewer, or exaggerated in the presence of a Black interviewer. It could be that Blacks are reporting behaviors that, among their ethnic group, are considered more socially desirable, and thus they are more likely to over-report to an interviewer of the same race. This would be consistent with a finding by Anderson, Silver, and Abramson (1988) that found than Blacks were more likely to over-report voting behaviors (the presumed socially desirable response) in the presence of a Black interviewer.

It is worth noting that the experimental conditions were somewhat different than what a patient might encounter who is being seen by a mental health professional. It could be that race of the experimenter was not important because the subjects perceived the experiment as a low-risk activity with few practical implications for real-life outcomes. Other studies have found that minority clients prefer same-race clinicians (Whaley, 2001b). The effect of majority-group clincians assessing minority clients for anxiety disorders is an important area that requires further study.

Black-White Differences

Despite the fact the results of the experimental manipulations were ambiguous at best, the mean scores obtained for the measures used in this study provide valuable information about Black-White differences in response to anxiety screening tools. African Americans scored significantly higher on most measures, particularly contamination scales. This is consistent with the findings of Study 1 and prior work done in our laboratory (Thomas et al, 2000; Williams et al, 2005). Interestingly, African Americans were over twice as likely to meet criteria for OCD. More research would need to

be conducted to determine if this is a true difference in prevalence rates or if, like the written measures, the interview procedure is subject to racial bias.

African Americans reported significantly higher levels of checking behaviors and endorsed more depressive symptoms. An interesting follow-up study would be to examine the CESD measure for Black-White differences at the item level. Not surprisingly, African Americans reported higher levels of ethnic identification as measured by the MEIM. The Beck Anxiety Inventory seemed to exhibit the least amount of racial difference.

Study 3: Factor Analysis

Overview

Study 3 examines the psychometric properties of the ten washing and contamination items from the Padua Inventory (Sanavio, 1988) and the three overlapping washing items from the short version of the Obsessive-Compulsive Inventory (Foa et al, 2002) in a new, mixed-race sample, and extends earlier work by including a novel group of items intended to assess non-pathological individual differences in attitudes about cleanliness and contamination. The purpose of this investigation is to determine if the observed Black-White differences on contamination scales reflect differing cultural norms about cleaning attitudes, rather than clinical differences in diagnosable OCD.

Research Design and Methods

Participants

Participants consisted of Virginians residing in the Charlottesville and Hampton Roads areas, as well a combined sample of undergraduate students from University of Virginia, Hampton University, and James Madison University. Of the 1,483 participants, 340 (22.9%) were Black/African American and 1,143 (77.1%) participants were White/Caucasian. The gender composition of the sample was 40.6% male and 59.1% female. Undergraduates participating for course credit comprised 86.1% of participants, and 13.8% percent were community members who received financial compensation for their participation in the study. The mean age for students was 19.0 years (SD=1.67), and the mean age of community participants was 42.6 (SD=13.9). Of these, 22.3% reported ever having an anxiety disorder or visiting a professional for "concerns about anxiety or nerves." Excluded from the sample were participants with current or recent symptoms of obsessive-compulsive disorder, participants whose racial identification did not fit into the "Black/African American" or "White/Caucasian" categories, and those having lived in the United States for less than five years.

Procedures

Subjects were recruited over two study periods, separated by several months. Participants in the first group were recruited through local churches and community groups, undergraduate courses, e-mail lists, and the UVa student subject pool (N=972). These were the subjects from the second pilot

study described earlier. The remainder were recruited through direct mail, telephone solicitation, flyers, and the UVa student subject pool (N=511). These were the subjects who participated in Study 2. Information was gathered from participants in two formats. Most participants completed paper and pencil measures, but undergraduates in the first study period were able to complete the measures online. The online format facilitated the administration of course credit for participation, but this was not an option for the later group because the later group received a larger battery that included a clinical interview at the end.

Participants were not required to provide names or any other identifying information. Personal information required for financial compensation was collected separately to preserve anonymity. Participants were informed that data provided would be used for scientific research and statistical analyses, and they could cease participation at any time. Once completed, respondents were debriefed, provided with information about local mental health organizations, and provided with contact information for the principal investigators if they required further information.

Measures

Participants provided demographic information, mental health history, and then completed a self-report instrument containing the 60 items from the Padua, which also includes the three OCI-R washing items.

Twelve new items were also included; these were designed to assess individual differences in nonpathological attitudes about cleanliness. One item was drawn from the Leyton Obsessional Inventory (item A10 which is item 19 from Cooper, 1970); all other items are original, created by the author. The items were developed based on a review of the literature on racial differences in cleaning and contamination attitudes. The Thomas et al study (2000) provided the first hint that cleanliness attitudes might be playing a role in producing racial differences. The same was true of the study using the Padua Inventory (Williams et al, 2005), but because that study only included the Padua items, it was not possible to fully identify an attitude factor that might be contributing to group differences. Therefore new cleanliness attitude items were developed that were intended to demonstrate racial differences.

These attitude items were created through a multi-step process. The psychological literature was searched for any research on racial differences in attitudes about contamination and washing. Finding no relevant literature, each item of the Padua contamination scale was individually examined,

searching the social science literature for documented Black-White differences surrounding that specific topic. Once a documented difference was identified, a new item was created that contained elements of both contamination anxiety items and the documented cultural difference.

For example, there was a significant difference between the way Blacks and Whites responded to item 10 on the Padua Inventory: “If an animal touches me, I feel dirty and immediately have to wash myself or change my clothing” (Williams et al, 2005). A study was located that indicated Blacks were less likely to desire pets than Whites, even after controlling for SES (Siegel, 1995). Two items were created, similar to Padua item 10, that are not indicative of psychopathology. The new items read, “I would love to own a furry pet,” (reverse scored) and, “I do not care to spend a great deal of time with animals.” Based on the findings about racial differences in pet ownership, it seemed likely that Blacks would report less interest in spending time with animals.

Another difference that was uncovered involved food consumption practices, as a Centers for Disease Control report found that African Americans were less likely to eat rare meats (Yang, Leff, & McTague, 1998). Padua item 5 involves avoidance of public toilets due to fears of disease and contamination. An item was then created where toilets were replaced by rare meats, so that the item read, “I only eat well-cooked meats because undercooked meat may be contaminated.”

Also examined were the household spending habits of the US population by racial group. Black families spend a larger portion of their income on laundry, cleaning supplies, and apparel than Whites (US Dept Labor, 2002). This indicated that Blacks may place greater importance on washing, cleaning, and clothing. Therefore items were created that were intended to assess these concerns; these contained elements of Padua items 2 and 10, involving clothing, and the general theme of personal cleanliness. The new item read, “I would hate to wear the same clothes two days in a row.”

This process was repeated until enough hybrid items had been developed to conduct the study. The items, shown in Table 12, were rated on a four-point scale (0: Strongly disagree, 1: Somewhat disagree, 2: Somewhat agree, 3: Strongly agree).

Table 12: Novel Attitude Items

Item	Description
A01	When I go out I am usually not concerned about my appearance.
A02	I would hate to wear the same clothes two days in a row.
A03	I would love to own a furry pet.
A04	I can't stand to be in my home if it's messy.
A05	I am extremely concerned about spreading germs to other people.
A06	I am afraid others will think I am untidy.
A07	It's very important that my working environment be orderly.
A08	I do not care to spend a great deal of time with animals.
A09	I am very concerned about how my hair looks.
A10	I make sure my clothes look clean and neat, no matter what I am doing.
A11	I only eat well-cooked meats because undercooked meat may be contaminated.
A12	I do not spend much money on hair products.

Statistical Methods

Exploratory Factor Analysis

To establish a preliminary factor model to use as a baseline in a subsequent evaluation of racial differences on the Padua contamination scale, it was first necessary to conduct an exploratory factor analysis (EFA) of the ten Padua items and the twelve additional cleanliness attitude items. Mplus (Muthén & Muthén, 1998) was used to conduct the EFA and the subsequent confirmatory factor analysis, using a probit model to describe the ordered categorical items. Mplus also includes a model for missing data under MAR (missing at random) conditions; this model was employed for all analyses. No more than 5% of the data were missing for any item. Inspection of the scree plot of eigenvalues, root mean square error of approximation values (RMSEA) and the interpretability of resulting solutions were used to select the number of factors to rotate, which were then rotated to simple structure using promax rotation.

Confirmatory Factor Analysis

The preliminary model selected in the EFA was then subjected to a sequence of confirmatory factor analyses to identify differences in the factor structure in Whites and Blacks, establish an invariant structure that could be used to measure the same traits in both groups, and finally to use this model to analyze the structure of the group differences in the factor means. Once again, Mplus was used for the confirmatory analyses, using the same probit model for the ordered categorical items and WLSMV (weighted least squares mean and variance adjusted) robust estimation. (WLSMV is not available for EFA.) Model fit was evaluated with RMSEA and comparative fit index (CFI).

Results

Descriptive Analyses

Table 13 shows the mean scores for Blacks and Whites on the individual items, along with t-tests and a measure of the effect size (d) between the means of Black and White participants. As has been the case in previous analyses, there was a substantial racial difference on almost all items, in the direction of Blacks expressing more concern regarding contamination on the Padua items and expressing greater concern about cleanliness and personal appearance on the attitude items.

Table 13: Mean Item and Scale Scores by Race

	White		Black						
Item	Mean	SD	Mean	SD	N	t	Pr > |t|	d	Item content
P01	0.77	0.93	1.08	1.14	1472	5.09	<.0001	0.315	touching money
P02	0.78	0.90	1.19	1.19	1467	6.78	<.0001	0.423	body secretions
P03	0.57	0.80	1.02	1.06	1468	8.50	<.0001	0.527	touching objects
P04	1.34	1.06	1.63	1.32	1471	4.23	<.0001	0.262	touching garbage
P05	0.83	0.98	1.45	1.27	1467	9.54	<.0001	0.593	use public toilets
P06	0.38	0.73	0.82	1.07	1469	8.72	<.0001	0.542	use public phone
P07	0.42	0.78	0.92	1.20	1471	9.04	<.0001	0.560	wash hands longer
P08	0.52	0.82	0.92	1.18	1464	6.92	<.0001	0.431	wash self
P09	1.09	1.12	1.93	1.43	1467	11.23	<.0001	0.698	contaminated wash
P10	0.39	0.74	0.88	1.21	1467	9.14	<.0001	0.567	animal wash
PICONT	7.08	6.07	11.84	8.03	1469	11.67	<.0001	0.725	PI contamination scale
OCIWASH	1.50	1.89	2.86	2.76	1457	10.25	<.0001	0.640	OCI washing scale
PITOTAL	36.02	26.73	39.21	29.24	1469	1.88	0.0605	0.117	all Padua items
A01	1.03	0.82	0.73	0.88	1477	-5.66	<.0001	-0.350	appearance
A02	1.57	1.03	2.10	1.01	1473	8.31	<.0001	0.516	same clothes
A03	2.18	0.96	1.45	1.21	1464	-11.52	<.0001	-0.720	love furry pet
A04	1.21	0.94	1.64	0.98	1474	7.32	<.0001	0.453	home messy
A05	0.41	0.64	0.76	0.92	1481	7.73	<.0001	0.478	spreading germs
A06	0.73	0.82	0.84	0.93	1468	2.08	0.0376	0.130	others think untidy
A07	1.77	0.87	2.15	0.79	1473	7.10	<.0001	0.440	orderly environment
A08	0.83	0.93	1.54	1.11	1476	11.79	<.0001	0.729	time with animals
A09	1.59	0.92	2.00	0.95	1471	7.13	<.0001	0.443	hair looks
A10	1.27	0.88	2.04	0.95	1474	13.70	<.0001	0.850	clothes neat
A11	1.31	1.01	2.18	1.01	1473	13.90	<.0001	0.863	cooked meats
A12	2.03	1.02	1.52	1.08	1473	-8.06	<.0001	-0.500	hair products

Note: For Whites N=1127-1143 and for Blacks N=330-340 due to occasional omitted items by respondents, who were allowed to skip questions they preferred not to answer. Scale scores were not computed for respondents leaving more than 10% of items blank on a given scale.

Exploratory Factor Analysis

The EFA suggested that a three to five factor solution would be required to adequately represent the structure of the items. Eigenvalues decreased sharply from one to three factors and then leveled off, but five factors had eigenvalues greater than 1.0. However, for four and five factor solutions the fourth and/or fifth factors had only two indicators, so it was decided the best approach was to rotate and interpret the three-factor solution. The RMSEA for this solution was in the borderline range (.062), but the simpler solution was chosen because of the relatively small number of items, the expectation that some adjustments to the model woud be needed in the two-group CFA, and because the finer structure of the cleanliness attitude items was not the focus of the analysis.

The three factor solution is given in Table 14. The first factor, which will be called the "Padua contamination" factor, consists of the ten Padua items, in addition to two of the new items (A05: concern about spreading germs, and A06: concern that others will think respondent is untidy). The second factor, which will be called the "cleanliness attitude" factor, consists of the remaining cleanliness attitude items, except for the two items that refer to attitudes about animals and pets. These two items, along with the animal-related item from the Padua, constitute the third factor, which is called the "animal attitudes" factor. Cronbach's alpha for the twelve attitude items was .753.

Table 14: EFA for Blacks and Whites Combined

	1a	2b	3c	
	Padua Contam.	Cleanliness	Animals	Item Content
A01	0.09	**-0.70**	0.07	appearance
A02	0.08	**0.60**	-0.04	same clothes
A03	-0.01	-0.03	**-0.80**	love furry pet
A04	0.04	**0.70**	0.18	home messy
A05	**0.76**	-0.04	0.01	spreading germs
A06	**0.53**	0.06	-0.07	others think untidy
A07	-0.14	**0.83**	0.17	orderly environment
A08	0.05	0.04	**0.86**	time with animals
A09	0.01	**0.79**	-0.16	hair looks
A10	0.07	**0.71**	0.09	clothes neat
A11	0.29	**0.35**	0.07	cooked meats
A12	-0.08	**-0.49**	0.18	hair products
P01	**0.54**	0.17	-0.07	touching money
P02	**0.69**	0.11	-0.05	body secretions
P03	**0.85**	0.05	0.04	touching objects
P04	**0.66**	0.12	-0.03	touching garbage
P05	**0.92**	-0.06	0.00	use public toilets
P06	**0.96**	-0.04	-0.02	use public phone
P07	**0.81**	0.01	0.04	wash hands longer
P08	**0.82**	0.01	-0.01	wash self
P09	**0.71**	0.10	0.04	contaminated wash
P10	**0.65**	0.03	**0.31**	animal wash

	Factor Correlations		
	1	2	3
1	1.00		
2	0.61	1.00	
3	0.19	0.30	1.00

Confirmatory Factor Analysis

The EFA solution was then reproduced as a confirmatory model with three correlated factors, estimating the factor loadings shown to be greater than .30 in the EFA and setting the others to zero. All estimated parameters were allowed to differ between the races. The variances of the latent factors were set to 1.0 and the means to zero in both racial groups. The CFA showed some decrement in fit relative to the EFA, because the EFA was estimated in the combined sample rather than separately in the races, and also because small loadings that were estimated in the EFA were set to zero in the CFA. Because the fit indices for the preliminary CFA dropped somewhat below acceptable values (CFI = .889, RMSEA = .078), modification indices were used to identify nonzero residual correlations among items to improve preliminary model fit. Modification indices indicated that there were five such pairs, all comprising pairs of items with similar wording or content. These included a pair of items involving concern about using public telephones or toilets, a pair concerning cleanliness of home and working environment, a pair involving social relations with other people, and two pairs concerning cleanliness of hair and personal appearance. Inclusion of the background correlations improved model fit to acceptable levels (CFI =. 943, RMSEA = .056). The magnitude of the residual correlations ranged from -.29 to +.32. Although the residual correlations were included in all subsequent models, they have no bearing on the substantive analyses and will not be discussed further.

It was then investigated whether the same factor structure could be fit in Blacks and Whites by constraining the factor loadings in the two groups. Doing so did not produce a substantial decrement in fit, with resulting CFI = .956 and RMSEA = .053. With the loadings constrained to be equal, the factor variances could be freed from 1.0 in the second (White) group. All three variances were estimated to be slightly greater than 1.0 in the White group (1.1, 1.3 and 1.4 for Factors 1 through 3, respectively). The CFA results for Blacks and Whites, estimated separately and with loadings constrained to be equal, are given in Table 15.

Table 15: Preliminary CFA

	BLACK			WHITE			EQUAL			
	1	2	3	1	2	3	1	2	3	Item Content
A01		-0.28			-0.50			-0.42		appearance
A02		0.40			0.59			0.51		same clothes
A03			-0.59			-0.80			-0.66	love furry pet
A04		0.54			0.59			0.53		home messy
A05	0.42	0.12		0.54	-0.03		0.49	0.01		spreading germs
A06	0.49	-0.20		0.15	0.30		0.21	0.18		others think untidy
A07		0.50			0.56			0.49		orderly environment
A08			0.93			0.90			0.80	time with animals
A09		0.52			0.55			0.49		hair looks
A10		0.73			0.68			0.62		clothes neat
A11		0.60			0.47			0.44		cooked meats
A12		-0.26			-0.40			-0.34		hair products
P01	0.49			0.61			0.56			touching money
P02	0.64			0.67			0.63			body secretions
P03	0.77			0.83			0.78			touching objects
P04	0.63			0.69			0.65			touching garbage
P05	0.67			0.70			0.66			use public toilets
P06	0.69			0.76			0.71			use public phone
P07	0.71			0.71			0.68			wash hands longer
P08	0.74			0.75			0.71			wash self
P09	0.70			0.72			0.69			contaminated wash
P10	0.61		0.19	0.63		0.35	0.60		0.29	animal wash

Factor Correlations

	1	2	3	1	2	3	1	2	3
1	1.00			1.00			1.00		
2	0.54	1.00		0.59	1.00		0.55	1.00	
3	0.27	0.18	1.00	0.17	0.14	1.00	0.27	0.16	1.00

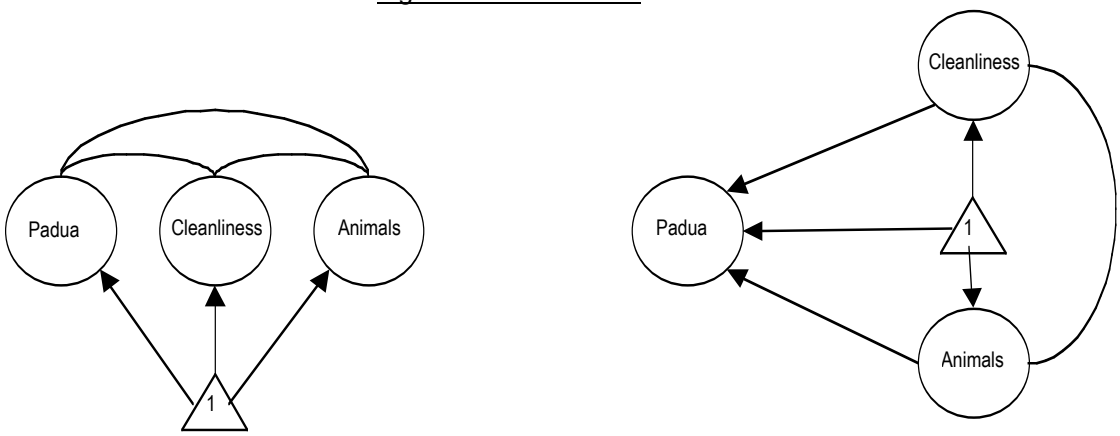
With the factor structure fixed to be equal across groups it is possible to investigate whether the item intercepts can be set equal after allowing the factor means to differ between the groups. This model tests whether the observed group differences in the items can be accounted for at the level of the latent factors. Fitting this model resulted in some loss of fit (CFI = .948, RMSEA =.059), so the modification indices were examined for items that did not appear to have equal intercepts across groups. The item with the largest group difference in intercepts was the item A11, "I only eat well-cooked meats because undercooked meat may be contaminated." Freeing the intercept for this item resulted in a better fit (CFI = .951, RMSEA = .057). Blacks were more likely than Whites to endorse this item conditional on their scores on the latent variables. Although detection of differential item functioning (DIF) was not the purpose of the current investigation, such a difference is symptomatic of uniform DIF on the item.

With the item intercepts (except for the meat item) fixed across groups, group differences in the means of the latent factors can be estimated by fixing the mean of one group (Blacks) to zero and freeing the means of the latent factors in the other group (Whites). Results showed that Blacks had substantially higher levels of all three factors. Blacks scored seven-tenths of a standard deviation higher than Whites on the Padua factor (standardized difference equal to .77, SE = .07), and more than a standard deviation higher than Whites on the cleanliness (difference equal to 1.14, SE = .09) and animal (difference equal to 1.05, SE = .09) factors.

In the foregoing model the mean differences on the three factors were estimated independently of each other, *i.e.,* the difference estimated for one was not conditional on the others. The goal of the current study is to understand how the group difference on the Padua factor might depend on the two attitude factors, and conversely how differences on these factors might depend on each other and the Padua factor. To estimate these effects, covariances between the Padua factor and the two attitude factors were modeled as regressions rather than as covariances. In this model, the Padua factor was regressed on the cleanliness and animal attitude factors, with the regression parameter set equal in the two racial groups. The model estimates the mean difference for the attitude factors, as above, and an intercept for the Padua factor that represents the residual racial difference on the Padua factor with levels of the two attitude factors held constant. This model is illustrated in Figure 5. The left side of the Figure illustrates the usual oblique factor parameterization, in which the relations among the factors are represented as covariances, and the means of the

factors (represented as arrows from the triangle containing the value of one, for the intercept) are independent of each other. The right side of the figure represents the alternative regression-based parameterization in which the relations between the Padua factors and the attitude factors are represented as regressions, with the intercept on the Padua factor representing racial differences in the intercept that remain after differences in the means of the attitude factors have been accounted for.

Figure 5: Factor Model



(a) Typical parameterization of oblique factors, with factor relations represented as covariances, and mean differences on the factors independent of each other. Circles represent latent factors, and triangle containing a 1 represents racial difference in means of the factors. (b) Alternative representation of oblique factors, with relations between Padua contamination and attitude factors represented as regressions. In this parameterization the mean difference on the Padua factor represents the residual difference with differences in the attitude factors held constant.

This model continued to fit the data well (CFI = .943, RMSEA = .057), which is unsurprising because it is essentially a reparameterization of the previous model in which factor relations were modeled as covariances. Scores on the Padua factor were significantly related to scores on the two attitude factors, as was expected based on the covariances between them in the previous model. Mean differences between Blacks and Whites on the attitude factors were essentially unchanged from previous models, but with scores on the attitude factors held constant, the group difference on the Padua factor approached zero (.016) and was no longer statistically significant. This effect was

not symmetrical: if the cleanliness attitude factor is regressed on the Padua factor and the animal factor, the residual group difference on the cleanliness attitude factor still showed Blacks higher than Whites by almost a standard deviation (.811), and the difference remained highly statistically significant. Similarly, if the animal factor is regressed on the Padua and the cleanliness factor, the residual mean difference remained high (.859) and was highly significant. We concluded that there was no racial difference on the Padua factor when scores on the attitude factors were held constant, but racial differences on the attitude factors remained when the Padua factor was held constant.

Discussion

As shown in previous studies, Blacks score significantly higher than Whites on scales purporting to measure pathological anxiety about contamination and washing. The current study has demonstrated that such scales are not only correlated with pathological anxiety, but also with attitudes about personal grooming, housekeeping, and animals. Racial differences on such attitude factors are at least as large as those on the Padua contamination scale. When the differences on these attitude factors are held constant, the apparent racial difference on the Padua scale disappears completely.

Causes of Bias

Although it is thought that this model represents a plausible cause of the racial bias for the anxiety items, the relevant question now shifts to the causes of differences in attitudes about personal grooming and housekeeping. Why do Blacks score higher on these attitude items than Whites? There are several theories that could be advanced, but each would require additional study to validate.

There are some longstanding negative stereotypes about African Americans that are related to cleanliness (Devine & Elliot, 1995). One possibility is that African Americans are overendorsing cleaning items to counteract these stereotypes, resulting in a reporting bias in favor of exaggerated cleaning attitudes. For example, in a behavioral treatment study, Hatch et al (1996) documented greater reluctance among Black clients to disclose OCD symptoms out fear of being labeled “crazy,” therefore self-presentation may be a factor in reporting certain pathological traits (Whaley, 2001b). Overendorsement of cleaning items by Blacks could be a means of positive self-presentation to counter concerns about being negatively stereotyped. If these compensations were unconscious,

then the phenomenon would bear some similarity to stereotype threat (Steele, 1997), however, the results from Study 2 indiacte that stereotype threat is an unlikely cause of Black-White differences

Another possibility is that group differences in disgust sensitivity may be a factor. In a study of individual differences in the experience of disgust, African Americans scored higher on the Disgust Scale compared to Whites (Haidt, McCauley, & Rozin, 1994). In a study of OCD symptoms using the Padua Inventory and the same Disgust Scale, multiple regression analysis showed a significant positive relationship between disgust and obsessive symptoms in a non-clinical sample, even after controlling for gender, age, anxiety, and levels of depression. No analyses of racial differences were reported (Mancini, Gragnani, & D'Olimpio, 2001). Washing and checking behaviors were the factors best predicted by disgust scores. It may be that greater disgust sensitivity among African Americans accounts for the higher scores in both Padua contamination and cleaning attitude factors, however more study would be needed to determine the direction of the relationship.

Alternatively, there may be actual differences in cleaning behaviors based on racial group, as greater concern with cleaning behaviors may be a cultural norm for African Americans, for reasons described earlier related to historical segregation laws. Even into the twentieth century, the medical establishment considered African Americans carriers of disease, "a social menace whose collective superstitions, ignorance, and carefree demeanour stood as a stubborn affront to modern notions of hygiene…" (Wailoo, 2006). These restrictions and attitudes may have resulted in a cultural reaction whereby attitudes about the importance of cleanliness and practices have been exaggerated to compensate.

Limitations of this Study

The cleanliness attitude items we employed in this study were newly created for that purpose. Although it seems likely that these attitudes are probably not indicators of pathological anxiety, further studies will be required to establish the attitude items as a valid measure of cleanliness attitudes, and to establish how the Padua and the attitude items interact in the prediction of valid pathological anxiety, for example as it might be assessed via a structured interview. Although this analysis has demonstrated that the observed racial difference on the contamination items is eliminated once observed scores on the attitude items are controlled, our interpretation of this effect in terms of latent constructs of "pathological anxiety" and "cleanliness attitudes" must await further validation, particularly of the newly developed cleanliness attitude construct. Additional data on the actual

cleaning behaviors of participants, independent of their self-report, would be needed to validate a cleanliness attitudes scale.

The CFA was performed on the same group of participants as the EFA. This approach was required due to the addition of the twelve new attitude items to the contamination items, and therefore there were no clear hypotheses about the resulting factor structure. Some preliminary hypothesis of the factor structure in the two groups was required as a basis for our subsequent multi-group CFA. Nonetheless, conducting the CFA in the same sample in which the EFA was estimated represents a limitation of the results. A replication study, applying the model to a new multiracial sample will be required before our conclusions about the relation between pathological concerns about contamination and normal differences in cleanliness attitudes can be considered definitive. A good follow-up study to this one would be to apply the same model to the TESS data collected in Study 1.

Study 4: Semi-Structured Interviews

Overview

Although much can be inferred through quantitative methods of investigation, sometimes the best way to answer psychological questions is simply to ask the client. The aim of Study 4 is to determine if Black-White differences in anxiety measures are a conscious phenomenon and what cultural reasons might best explain these differences. Examined were participant experiences with the interview process, their understanding of the questions, and opinions about how African Americans might respond to mental health issues.

Research Design and Methods

Participants

Several subjects from Study 2 were selected for semi-structured interviews to assess their subjective experiences with the assessment process. Participants were six African American students and community members who were randomly offered the opportunity to participate in the semi-structured interview. The characteristics of the subject pool from which these participants were drawn are described in Study 2.

Measures

A semi-structured interview was specifically designed to elicit information about how participants' race and/or ethnicity might affect their responses to anxiety items. Participants were first orally debriefed about the procedure and also given a separate written consent form. This was followed by several demographic questions about the participants' family, employment situation, and residence, *e.g.* "What kind of work do you do?" and "How long have you lived here?" Subjects were then asked about their experiences with illness, *e.g.* "Do you remember the first time you went to the doctor's office?" This was used as a segue into experiences and attitudes about mental health care issues, *e.g.* "What would you do if you couldn't stop thinking about things that worried you?"

The next section focused on the participant's experience with the interview process, *e.g.* "Did you think that the survey questions were appropriate to you?" and "Do you think people from your ethnic/racial group might feel uncomfortable participating in a study like this one?" The interview then moved on to questions about specific concerns, and subjects were asked about their interpretations

of questions that have shown differences between ethnic groups, *e.g.* "Compared to other people, do you think you are more or less likely to 'return home to check doors, windows, drawers, etc., to make sure they are properly shut?' Why or why not?" and "Do you think people in <your ethnic group> might answer these questions differently than others?" See Appendix C for the complete script of the interview.

Procedures

Participants agreeing to the interview were paid an additional $35 for their participation. Interviews took place within 24 hours of debriefing from Study 2 and occurred in a private, comfortable interviewing room. Each interview lasted approximately one hour and was videotaped. Videotapes were transcribed by undergraduate research assistants. Once transcribed, the interviews were reviewed for accuracy and a summary of each developed. The summaries were analyzed by searching for common themes in the reports of participants to determine if results suggesting the presence of OCD could be better explained by socio-cultural rather than psychopathological dynamics.

Results

Participants expressed a wide range of ideas and concerns about such issues as being able to obtain needed help for mental health concerns, participation in research studies, personal contamination concerns and checking behaviors. Individual responses are summarized as follows.

Subject 1

The participant was an eighteen year-old African American female. She is from Connecticut but at the time of the interview was a first year student at the University of Virginia. At home, she lives with her mother and grandfather, and she has no siblings. She reports no history of mental health problems.

Subject 1 said that she would seek mental health care if she truly needed it, but would tend to turn to her mom if she had excessive worries. When asked directly, she says she does not believe that others would perceive her differently if she were to have OCD or some other disorder. While she did not worry that her responses would reflect poorly on her ethnic group, she thinks that some African Americans may answer questions in a way to minimize differences or may answer some questions differently than other ethnic groups, but she did not elaborate on this perception. She

sometimes rereads passages when she is tired or bored, checks locks if she is home alone, checks letters to be sure they are correctly addressed, and often washes her hands after touching an animal. These behaviors did not seem excessive or appear to cause distress.

Subject 2

The participant was a twenty-two year-old male, currently unmarried and living alone. He is a Virginia native and grew up with his mother, in foster care, and other group homes. He does manual labor for a job and enjoys gospel music and weight lifting. He attends church regularly.

He believes that worries often result from a lack of faith and that anxiety should not interfere with work; that is a sign of laziness. He believes that people judge and criticize others based on the problems they have but he would willingly consult with anyone for help. He is unable to make generalizations regarding how African Americans think or behave, but he believes they receive quality health care. He thinks that money will motivate African Americans to participate in research projects.

As he becomes more independent, he is more careful to check letters before sending them. He does not recheck locks, but would if he lived in an unsafe area. He is not bothered by animals, is unlikely to be late, does not have difficulty making decisions, is not bothered by thoughts abut obscene words, and does not have unwanted impulses. He is, however, more likely to reread something several times to avoid mistakes.

Subject 3

The participant is a forty-six year-old single African American female with three children. She has been a resident of Charlottesville, Virginia for about fifteen years. She is currently unemployed and is receiving disability income due to her depression; she also has been diagnosed with ADHD. She is active in the community, taking college courses, attending church, and volunteering her time.

She had a very difficult time with depression in her twenties but currently sees a therapist for her depression and anxiety. When she originally began having problems she tried to fight it alone. When filling out the survey, she was not afraid the results would reflect poorly on her ethnic group, claiming that some are “more messed up” than she is, and she is willing to do anything to better her ethnic group. She thinks that many African Americans do not participate in projects like this because projects are so personal and people like to keep things hidden inside. She thinks that people need to feel safe to participate; she is unsure if people believe in confidentiality. If the project feels safe and

there is a reason to come, like free food, then they would come. Transportation may be an obstacle, and participants do not want to feel like they are just "guinea pigs."

If she is writing a business letter she will look over it several times so that the person receiving it will not think that she cannot write a letter properly. She does not approve of animals being in the house, rubbing on her, or getting on the furniture. She describes herself as a "chronic late person."

Subject 4

The participant was a thirty-four year-old Virginia native. She is married with three young children. She attends a traditional church, and both she and her husband work full time. She goes to the doctor for regular exams but has no serious health problems; she believes that she receives good care when she seeks medical attention.

She thinks that people worry due to fear of the unknown. She states that does not worry much, but from time to time money issues worry her. She typically talks with her husband about her worries, but would be open to seeking professional help or medication if things got bad enough. If she had a serious mental health issue, she would not want people other than her husband to know. She does not believe that African Americans have more difficulties finding good health care than Caucasians. She does think, however, that African Americans may be hesitant to participate in studies; racial information could be identifying and they would want complete anonymity.

She thinks that she checks letters and locks and worries about animal cleanliness less than other people. She also is late less often than average, rarely rereads things, and has no trouble making decisions. She compared herself primarily to her husband, but also to friends and coworkers who are of her same ethnic group. She does believe that others in her ethnic group would censor their answers to questions.

Subject 5

The participant was a thirty-three year-old Virginia native. She is married with two young children. She does clerical work. Her only real experience with mental illness was when a relative with schizophrenia lived with her family. She attends a traditional church and is healthy. She goes to doctors for regular check ups and believes that they meet her needs.

She thinks some people worry just for the sake of worrying and it consumes them. She has two friends who are very afraid of snakes. Her mother and brother also do "quirky" things that she

would make fun of. She does not believe that she worries very much, but when she does, she seeks advice from her husband and friends to reason through her concerns. Unless she thought that she had a serious problem, she would not seek help for a mental health issue. She would definitely not tell a pastor about it because she would be embarrassed, and she would try to keep her problem secret from extended family and friends. She thinks talking about worries with friends is therapeutic.

She thinks that African Americans get medical treatment that is as good as Caucasians. Compared to others, she believes that she checks locks less, feels less dirty after touching an animal, checks letters less, rereads things less, is late less, and thinks about obscene thoughts less. She feels she has more trouble making decisions. She compares herself to close friends and does not think African Americans would answer the questions differently than Caucasians. She also does not think they would be less likely to participate in studies.

Subject 6

The participant was a fifty year-old African American Virginia native. He is married with four grown children, and works at a local hospital. He is extremely involved in his church and uses the church for marriage counseling. He blames money, change, and how one was raised for causing stress in life. He used to be afraid to speak in public but to manage that issue and to deal with other life problems, he turned to Jesus and prayer. If he or someone that he knows needed help with a mental health issue, he would turn to a professional, believing that he and others in his ethnic group could get the help they need. He would not tell many people about his own problems, however, because of concerns about gossip.

He checks letters for mistakes more than other people but has to refocus his thoughts when presented with obscene images or words. He is unlikely to feel dirty from animals, recheck locks, reread something, or feel an impulse to steal. He thinks that other African Americans may be scared to participate in studies, concerned that they would “get in trouble” for responses. He was not concerned that his answers would reflect poorly on him or on others in his ethnic group. Although he feels that African Americans may answer differently than other groups, he thinks most differences would be within groups due to income and related problems.

Results

Getting Mental Health Treatment

There was no main consensus that emerged regarding the issue of getting mental health care. Subjects did not indicate that they felt that mental health care was distasteful, although some felt that mental health issues should first be addressed by informal avenues, such as the church or friends. Several subjects said they would not tell others about mental health problems, whereas Subject 3 revealed that she was currently in treatment for depression. Overall, however, there seemed to some reluctance surrounding the idea of seeking mental healh care, with the concession that it would be obtained if truly needed.

Use of Caution

Many participants felt that other African Americans would be reluctant or guarded about revealing mental health concerns. Some participants also thought Blacks might not want to be research participants, for fear of being used as a “guinea pig.” This is consistent with Whaley’s (2001b) ideas about "healthy paranoia," a cultural response to the experience of racism and oppression as an ethnic minority. Concern about being unfairly judged may result in the use of excessive caution, or careful double-checking, of tasks which may subject to evaluation by others. This is partially supported by the comments of the subjects.

OCD Symptoms

Most participants endorsed some concerns about cleanliness and some checking behaviors, but these did seem to cause distress or impair functioning.

Conclusions

Review of Pertinent Findings

The series of studies conducted in this dissertation has provided valuable information about the causes of Black-White differences in the assessment of OCD. Study 1 showed that certain Black-White differences are a national rather than a local phenomenon, and the salience of race increases reports of contamination attitudes and related behaviors. Study 2 indicated that stereotype threat is not the likely to be a cause of the differences, but that having a Black experimenter can result in increased reports of contamination anxiety. Study 3 isolated a cleaning factor that is greater in Blacks than in Whites, and statistically explains the mean difference in scores. Study 4 indicated that Blacks are unlikely to feel consciously threatened by the testing procedures, but are likely to feel some reluctance to disclose symptoms of mental illness.

Cause of Racial Differences

This series of studies seems to indicate that increased cleaning behaviors are in fact a cultural norm for African Americans. If being primed about ones ethnic identity activates relevant thoughts and triggers related actions, then increasing the salience of ethnic identity may serve as an unconscious reminder of expected group behaviors, in this case excessive cleaning, which is in turn reflected in the responses to contamination items (an “activation” effect).

The salience of group membership has been demonstrated to affect many attitudes and behaviors. When a construct is primed, people often act in construct-consistent ways. In a classic study by Bargh, Chen, and Burrows (1996) participants for whom an elderly stereotype was primed walked more slowly down the hallway when leaving the experiment than did control participants, consistent with the content of that stereotype of elderly people being slow and frail. In the same study, participants for whom the African American stereotype was subliminally primed reacted with more hostility to an annoying request made by the experimenter, presumably due to negative stereotypes about African American hostility. This automatic behavior priming effect was described in terms of negative self-fulfilling prophecies, but priming may activate positive, negative, and neutral attitudes or behaviors surrounding the construct under study.

Diagnostic Validity

The findings of this study also lead to an important question of diagnostic validity. Biased instruments can result in diagnostic and treatment errors, as well as an increase of cultural mistrust

among minority clients (Whaley, 2001b). Based on these results, it seems likely that scales intended to measure pathological anxiety about cleanliness will be less predictive of actual pathology in Blacks than in Whites. Preliminary data from Thomas et al (2000), Williams et al (2005), and Study 3 support this hypothesis. However, Study 2 seems to indicate that Black participants are also more likely to be diagnosed with OCD based on structured interviews as well. Prevalence studies have shown conflicting results, with both higher and lower rates of OCD in Blacks when compared to Whites. It could also be that African Americans are at greater risk for OCD due to their cultual emphasis on cleaning. More research is needed to examine these issues in depth.

Implications for Clinical Applications

These findings may be troubling to clinicians seeking a means of screening African Americans for OCD or other anxiety disorders. It is likely that most African Americans given these measures will initially seem obsessive-compulsive. The clinician must be aware that Black clients tend to over-endorse these items. Questions about obsessive-compulsive tendencies should focus on subjective distress and time spent on compulsions rather than on specific behaviors. Racial salience in Study 1 was activated by the presence of ethnic identifaction items on a computer adminstered questionnaire. However, in a clinical setting, many factors could trigger a compromised response, resulting in even greater diagnostic error. The race of the clinician, rapport, clinical setting, the patient's understanding of the purpose and possible outcome of the assessment could also be factors (Whaley, 2001a). Although Study 2 found little effect due to the race of the experimenter, it still seems prudent for majority-group clinicians to use sensitivity and discretion with minority clients.

Improving Validity

It remains to be determined whether it is possible to create scales to measure pathological anxiety that do not have racial bias resulting from correlations with non-pathological attitudes. It is difficult to generate compulsive washing and contamination anxiety items that have no cleanliness attitude content, although it seems clear that questions about these symptoms should focus on subjective distress and time spent on compulsions rather than general attitudes about behaviors related to cleanliness and grooming. One potential solution would be to create a correction scale. A separate measure of grooming and housekeeping attitudes could be developed similar to the supplementary items used in this analysis. The resulting score could then be used to correct the

pathological anxiety scale for its correlation with non-pathological attitudes. The best known use of this technique involves the k-correction of the MMPI (Friedman, Lewak, Nichols, & Webb, 2001).

Summary

This series of studies is filled with many important findings. In a nationally representative non-clinical sample, Blacks significantly outscore Whites on the contamination and washing scales on the Padua Inventory and Obsessive-Compulsive Inventory. Experimental evidence suggests that over-endorsement is due in part to the salience of ethnic and racial information, rather than concerns about validating stereotypes or cultural mistrust. Greater concerns about cleaning and the cleanliness of animals appear to be a cultural norm for African Americans. Clinicians and researchers should use obsessive-compulsive disorder measures with caution in African Americans. Further work is needed to develop unbiased measures and determine actual prevalence rates of OCD in African Americans.

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References

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition – Text Revision*, Washington D.C., USA: American Psychiatric Press.

Anderson BA, Silver BD, Abramson PR. (1988). The Effects of Race of the Interviewer on Measures of Electoral Participation by Blacks in SRC National Election Studies. *The Public Opinion Quarterly, 52*(1): 53-83.

Aronson J, Lustina MJ, Good C, Keough K, Steele CM, & Brown J. (1999) When White men can't do math; necessary and sufficient factors in stereotype threat. *Journal of Personality and Social Psychology, 35*, 29-46.

Battle KP. (1895). Wilson Caldwell, *North Carolina University Magazine*, v. 14, 1894-1895, p. 315-318.

Beck AT. (1990). *Beck Anxiety Inventory*. San Antonio, TX: The Psychological Corporation.

Blackhall LJ, Frank G, Murphy ST, Michel V, Palmer JM, & Azen SP. (1999). Ethnicity and attitudes towards life sustaining technology, *Social Science & Medicine*, 48(12), 1779-89.

Brown C, Shear MK, Schulber HC, & Madonia MJ. (1999). Anxiety disorders among African-American and white primary medical care patients. *Psychiatric Services, 50*(3), 407-409.

Centers for Disease Control. (1997). Fertility, Family Planning, and Women's Health: New Data from the 1995 National Survey of Family Growth, *Vital and Health Statistics*, 23(19).

Centers for Disease Control. (2000). Youth risk behavior surveillance, United States, 1999, *Morbidity & Mortality Weekly Report: Surveillance Summaries, 49*(SS05), 1-96.

Cooper J. (1970). The Leyton Obsessional Inventory. *Psychological Medicine*, 1(1), 48–64.

Couper MP. (2000). Web Surveys: A Review of Issues and Approaches, *Public Opinion Quarterly, 64:* 464–494.

Danso HA & Esses VM. (2001). Black experimenters and the intellectual test performance of white participants: the tables are turned. *Journal of Experimental Social Psychology, 37*, 158-165.

Devine PG. (1989). Stereotypes and prejudice: their automatic and controlled components. *Journal of Personality and Social Psychology, 56*, 5-18.

Devine PG & Elliot AJ. (1995). Are racial stereotypes really fading? The Princeton trilogy revisited. *Personality and Social Psychology Bulletin*, *21*:11, 1139-1150.

First MB, Spitzer RL, Gibbon M, & Williams JBW. (1997). *User's Guide for the Structured Clinical Interview for DSM-IV Axis I Disorders, Clinician Version.* American Psychiatric Press. Washington DC.

Foa EB, Huppert JD, Leiberg S, Langner R, Kichic R, Hajcak G, & Salkovskis PM. (2002). The Obsessive-Complusive Inventory: Development and validation of a short version. *Psychological Assessment*. Vol 14(4), Dec, 485-495.

Freimuth VS, Quinn SC, & Thomas SB. (2001). African American's views on research and the Tuskegee syphilis study. *Social Science & Medicine*, *52*(5), 797-808.

Fricker S, Galesic M, Tourangeau R, & Yan T. (2005). An Experimental Comparison of Web and Telephone Surveys *Public Opinion Quarterly.* 69: 370-39.

Friedman AF, Lewak R, Nichols DS, & Webb JT. (2001). *Psychological assessment with the MMPI-2.* Lawrence Erlbaum Associates, Mahwah, NJ.

Friedman S. (1994). *Anxiety disorders in African Americans.* Springer Publishing Co., New York, NY.

Gamble VN. (1993). A legacy of distrust: African Americans and medical research, *American Journal of Preventive Medicine, 9*(6 Suppl), 35-8.

Gamble VN. (1997). Under the shadow of Tuskegee: African Americans and health care, *American Journal of Public Health, 87*(11), 1773-1778.

Goodman WK, Price LH, Rasmussen SA, Mazure C, Fleischmann RL, Hill CL, Heninger GR, Charney DS. (1989). The Yale-Brown Obsessive Compulsive Scale, I: development, use, and reliability. *Arch Gen Psychiatry*, *46*:1006–1011.

Gosling, S. D., Vazire, S., Srivastava, S.,& John, O. P. (2004). Should we trust Web-based studies? A comparative analysis of six preconceptions about Internet questionnaires. *American Psychologist*, 59(2), 93-104.

Guterbock TM, Finkel SE, Borg MJ (1991). Race-of-Interviewer Effects in a Pre-Election Poll, *Public Opinion Quarterly*, 55: 313-330.

Haidt J, McCauley C, & Rozin P. (1994). Individual differences in sensitivity to disgust: A scale sampling seven domains of disgust elicitors. *Personality and Individual Differences*, 16, 701-713.

Heurtin-Roberts S, Snowden L, & Miller L. (1997). Expressions of Anxiety in African Americans: Ethnography and the Epidemiological Catchment Area Studies. *Culture, Medicine, and Psychiatry, 21*: 337-363.

Heyman I, Fombonne E, Simmons H, Ford T, Meltzer H, & Goodman R. (2001). Prevalence of obsessive-compulsive disorder in the British nationwide survey of child mental health. *British Journal of Psychiatry*, 179, 324-329.

Hodgson RJ & Rachman S. (1977). Obsessional-compulsive complaints, *Behaviour Research and Therapy*, 15.

Karno M, Golding JM, Sorenson SB, et al (1988) The epidemiology of obsessive compulsive disorder in five US communities, *Arch Gen Psychiatry*, 45, 1094-1099.

Lepore L & Brown R. (1997). Category and stereotype activation: Is prejudice inevitable? *Journal of Personality and Social Psychology, 72*, 275-287.

Lewis-Fernández R, & Kleinman A. (1994). Culture, Personality and Psychopathology. *Journal of Abnormal Psychology, 103* (1): 67-71.

Lopez AD & Murray CCJL. (1998). The global burden of disease, 1990-2020. *Nature Medicine*, 4, 1241-1243.

Lowery BS, Hardin CD, & Sinclair S. (2001). Social influence effects on automatic racial prejudice. *Journal of Personality and Social Psychology, 81*(5), 842-855.

Lewis-Hall FC. (1994). The use of DSM in the diagnosis of Panic Disorder and Obsessive Compulsive Disorder. In S. Friedman (Ed.), *Anxiety disorders in African Americans* (102-116). New York: Springer Publishing Co.

Mancini F, Gragnani A, & D'Olimpio F. (2001). The connection between disgust and obsessions and compulsions in a non-clinical sample. *Personality and Individual Differences*, 31, 1173–1180.

Muthen LK & Muthen BO. (1998). *Mplus User's Guide, version 2*. Los Angeles, CA.

Obsessive Compulsive Cognitions Working Group. (1997). Cognitive assessment of obsessive-compulsive disorder. *Behaviour Research and Therapy*, 35(7): 667-681.

Obsessive Compulsive Cognitions Working Group. (2003). Psychometric validaion of the obsessive Beliefs Questionnaire and the Interpretation of Intrusions Inventory: Part I. *Behaviour Research and Therapy*, 41: 863-878.

Osborne JW. (2001). Testing stereotype threat: Does anxiety explain race and sex differences in achievement? *Contemporary Educational Psychology, 26*, 291-310.

Peele WJ. (1898). *A Pen-Picture of Wilson Caldwell, colored, late janitor of the University of North Carolina*, North Carolina Collection, University of North Carolina Library Call Number: CpB_C145p.

Phinney JS. (1992). The multigroup ethnic identity measure: A new scale for use with diverse groups. *Journal of Adolescent Research*, *7*(2) Apr, 156-176.

Radloff LS. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1,* 385-401.

Regier DA, Myers JK, Kramer LN, Robins LN, Blazer DG, Hough RL, Eaton WW, & Locke BZ. (1984). The NIMH epidemiological catchment area program. *Archives of General Psychiatry, 41*: 934-941.

Regier DA, Narrow WE, & Rae DS. (1990). The Epidemiology of Anxiety Disorders: The Epidemiological Catchment Area (ECA) Experience. *Journal of Psychiatric Research*, *24* (suppl. 2): 3–14.

Ritsher JB, Stuening EL, Hellman F, & Guardino M. (2002). Internal validity of an anxiety disorder screening instrument across five ethnic groups. *Psychiatry Research, 111*, 199-213.

Rosenberg MJ, Phillips RS, & Holmes MD. (1991). Vaginal douching. Who and why? *Journal of Reproductive Medicine, 36*(10), 753-8.

Sanavio E. (1988). Obsessions and compulsions: The Padua Inventory. *Behaviour Research and Therapy, 26*(2).

Sattler JM. (1970). Racial “experimenter effects” in experimentation, testing, interviewing, and psychotherapy. *Psychological Bulletin, 73*(2), 137-160.

Shih M, Pittinsky TL, & Abady N. (1999). Stereotype Susceptibility: Identity Salience and Shifts in Quantitative Performance, *Psychological Science*,10(1), 80-83.

Siegel JM. (1995). Pet ownership and the importance of pets among adolescents, *Anthrozoos*, 8(4), 217-223.

Spencer SJ, Steele CM, & Quinn DM. (1999). Stereotype threat and women's math performance. *Journal of Experimental Social Psychology*, 35(1), 4-28.

Spielberger CD, Gorsuch RL & Lushene RE (1970). *Manual for the state-trait anxiety inventory*. Consulting Psychologists Press, Palo Alto, CA.

Steele CM. (1997). A threat in the air: how stereotypes shape intellectual identity and performance, *American Psychologist*, 52(6), 613-629.

Steele CM & Aronson J. (1995). Stereotype threat and the intellectual test performance of African Americans, *Journal of Personality & Social Psychology*, 69(5), 797-811.

Sternberger LG & Burns GL. (1990). Obsessions and compulsions: Psychometric properties of the Padua Inventory with an American college population. *Behaviour Research and Therapy,* 28(4), 341-345.

Stone J, Lynch CI, Sjomeling M, & Darley JM. (1999). Stereotype threat effects on Black and White athletic performance. *Journal of Personality and Social Psychology, 77*, 1213-1227.

Substance Abuse and Mental Health Services Administration. (2005). *Results from the 2004 National Survey on Drug Use and Health: National Findings* (Office of Applie Studies, NSDUH Series H-28, DHHS Publication No. SMA 05-4062). Rockville, MD.

Terwilliger M, Turkheimer E, Barkley K, Oltmanns T. (2003). Stereotype Threat Confounds Assessment of Anxiety in African Americans, poster for the 2*3nd National Conference of the Anxiety Disorders Association of America*, Toronto, Canada, Mar 27-30.

Thomas J, Turkheimer E, & Oltmanns TF. (2000). Psychometric analysis of racial differences on the Maudsley Obsessional Compulsive Inventory. *Assessment, 7*(3), 247-258.

Triandis HC, Malpass RS, and Davidson AR. (1971). Cross-Cultural Psychology. *Biennial Review of Anthropology, 7*, 1-84.

U.S. Department of Labor. (2002). *Consumer Expenditures in 2000, Bureau of Labor Statistics, Report 958* (also Table 51), http://www.bls.gov/cex.

Valleni-Basile LA, Garrison CZ, Waller JL, Addy CL, McKeown RE, Jackson KL, Cuffe SP. (1996). Incidence of obsessive-compulsive disorder in a community sample of young adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry*, 35(7) 898-906.

Wailoo K. (2006). Stigma, race, and disease in 20th century America. *The Lancet*, 367(9509), 531(3).

Watson D., Clark L. A., & Tellegen A. (1988). Development and validation of brief measures of Positive and Negative Affect: The PANAS Scales. *Journal of Personality and Social Psychology, 54*, 1063-1070.

Whaley AL. (2001a). Cultural mistrust and mental health services for African Americans: a review an meta-analysis. *The Counseling Psychologist, 29*(4), 513-531.

Whaley AL. (2001b). Cultural mistrust of white mental health clinicians among African Americans with severe mental illness. *American Journal of Orthopsychiatry, 71*(2), 252-256.

Williams KE, Chambless DL, and Steketee G. (1998). Behavioral treatment of obsessive-compulsive disorder in African Americans: Clinical issues. *Journal of Behavior Therapy and Experimental Psychiatry. 29*, 163-170.

Williams MT & Turkheimer E. Identification and Explanation of Racial Differences in Contamination Anxiety. Manuscript under review.

Williams MT, Turkheimer E, Schmidt K, Oltmanns T. (2005). Ethnic Identification Biases Responses to the Padua Inventory for Obsessive-Compulsive Disorder. *Assessment, 12*(2):174-185.

Yang S, Leff MG, McTague D, Horvath KA, Jackson-Thompson J, Murayi T, Boeselager GK, Melnik TA, Gildemaster MC, Ridings DL, Altekruse SF, & Angulo FJ. (1998). Multistate surveillance for food-handling, preparation, and consumption behaviors associated with foodborne diseases: 1995 and 1996 BRFSS food-safety questions, *Morbidity & Mortality Weekly Report: CDC Surveillance Summaries, 47*(4), 33-57.

Zhang AY & Snowden LR. (1999). Ethnic characteristics of mental disorders in five U.S. communities. *Cultural Diversity and Ethnic Minority Psychology*, 5(2), 134-146.

Appendix A: Internet Study Protocol

This survey includes questions about your tendency to worry or doubt and how you identify with others. Please answer the following questions as honestly as possible.

One important aspect of personal identity is ethnic identification. Please answer the following questions about your ethnic identification and related beliefs.

		Check the box to indicate how much you agree or disagree with each statement.	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
E01	1	I have spent time trying to find out more about my own ethnic group, such as its history, traditions, and customs.	[0]	[1]	[2]	[3]
E02	2	I am active in organizations or social groups that include mostly members of my own ethnic group.	[0]	[1]	[2]	[3]
E03	3	I have a clear sense of my ethnic background and what it means for me.	[0]	[1]	[2]	[3]
E05	4	I think a lot about how my life will be affected by my ethnic group membership.	[0]	[1]	[2]	[3]
E06	5	I am happy that I am a member of the group I belong to.	[0]	[1]	[2]	[3]
E08	6	I am not very clear about the role of my ethnicity in my life.	[0]	[1]	[2]	[3]
E10	7	I really have not spent much time trying to learn more about the culture and history of my ethnic group.	[0]	[1]	[2]	[3]
E11	8	I have a strong sense of belonging to my own ethnic group.	[0]	[1]	[2]	[3]
E12*	9	I understand what my ethnic group membership means to me, as related to my own group and other groups.	[0]	[1]	[2]	[3]
E13*	10	To learn more about my ethnic background, I have often talked to other people about my ethnic group.	[0]	[1]	[2]	[3]
E14	11	I have a lot of pride in my ethnic group and its accomplishments.	[0]	[1]	[2]	[3]
E16	12	I participate in cultural practices of my own group, such as special food, music, or customs.	[0]	[1]	[2]	[3]
E18	13	I feel a strong attachment towards my own ethnic group.	[0]	[1]	[2]	[3]
E20	14	I feel good about my cultural or ethnic background.	[0]	[1]	[2]	[3]

E21	15	*Check the number that gives the best answer to each question.* My race/ethnicity is:	[1] Asian, Asian-American, or Oriental [2] Black or African-American [3] Hispanic or Latino/a (of any race) [4] White, Caucasian or European (not Hispanic) [5] Native American/American Indian/Eskimo/Aleut. [6] Middle Eastern/East Indian/Pakistani [7] Mixed; parents are from two different groups (specify): [8] Other (write in):_____

X01	16	How much of your free time do you spend exclusively with people from your own ethnic group?	None [ ]	Some [ ]	Half [ ]	Most [ ]	All [ ]

Please answer the following questions about your tendency to worry or doubt. There are no right or wrong answers and no trick questions. Work quickly and do not think too long about the exact meaning of the questions.

		Rate your replies as follows:	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
M09	17	I do not worry unduly if I accidentally bump into somebody.	[0]	[1]	[2]	[3]
M13	18	I use only an average amount of soap.	[0]	[1]	[2]	[3]
M16	19	I do not take a long time to dress in the morning.	[0]	[1]	[2]	[3]
M17	20	I am not excessively concerned about cleanliness.	[0]	[1]	[2]	[3]
M21	21	I am not unduly concerned about germs and diseases.	[0]	[1]	[2]	[3]
M27	22	I do not use a great deal of antiseptics.	[0]	[1]	[2]	[3]
M26	23	I take rather a long time to complete my washing in the morning.	[0]	[1]	[2]	[3]
M29	24	Hanging and folding my clothes at night does not take up a lot of time.	[0]	[1]	[2]	[3]
X02	25	When I go out I am usually not concerned about my appearance.	[0]	[1]	[2]	[3]
X03	26	I would hate to wear the same clothes two days in a row.	[0]	[1]	[2]	[3]
X05	27	I would love to own a furry pet.	[0]	[1]	[2]	[3]
X04	28	I can't stand to be in my home if it's messy.	[0]	[1]	[2]	[3]
Y03	29	I am extremely concerned about spreading germs to other people.	[0]	[1]	[2]	[3]
X08	30	I am afraid others will think I am untidy.	[0]	[1]	[2]	[3]
X10	31	It's very important that my working environment be orderly.	[0]	[1]	[2]	[3]
X11	32	I would be equally happy with a used item over a new one in most circumstances.	[0]	[1]	[2]	[3]
X13	33	I prefer to buy clothing at a discount store.	[0]	[1]	[2]	[3]

		Rate your replies as follows:	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
X16	34	I do not care to spend a great deal of time with animals.	[0]	[1]	[2]	[3]
X14	35	I am very concerned about how my hair looks.	[0]	[1]	[2]	[3]
L19	36	I make sure my clothes look clean and neat, no matter what I am doing.	[0]	[1]	[2]	[3]
X18	37	I only eat well-cooked meats because undercooked meat may be contaminated.	[0]	[1]	[2]	[3]
X19	38	I do not spend much money on hair products.	[0]	[1]	[2]	[3]

The following statements refer to thoughts and behaviors which may occur to everyone in everyday life. For each statement, choose the reply which best seems to fit you and the degree of disturbance which such thoughts or behaviors may create.

		Rate your replies as follows:	not at all	a little	some-what	a lot	very much
P01	39	I feel my hands are dirty when I touch money.	[0]	[1]	[2]	[3]	[4]
P02	40	I think even slight contact with bodily secretions (perspiration, saliva, urine, etc.) may contaminate my clothes or somehow harm me.	[0]	[1]	[2]	[3]	[4]
P03	41	I find it difficult to touch an object when I know it has been touched by strangers or by certain people.	[0]	[1]	[2]	[3]	[4]
P04	42	I find it difficult to touch garbage or dirty things.	[0]	[1]	[2]	[3]	[4]
P05	43	I avoid using public toilets because I am afraid of disease and contamination.	[0]	[1]	[2]	[3]	[4]
P06	44	I avoid using public telephones because I am afraid of contagion and disease.	[0]	[1]	[2]	[3]	[4]
P07	45	I wash my hands more often and longer than necessary.	[0]	[1]	[2]	[3]	[4]
P08	46	I sometimes have to wash or clean myself simply because I think I may be dirty or "contaminated."	[0]	[1]	[2]	[3]	[4]
P09	47	If I touch something I think is "contaminated," I immediately have to wash or clean myself.	[0]	[1]	[2]	[3]	[4]
P10	48	If an animal touches me, I feel dirty and immediately have to wash myself or change my clothing.	[0]	[1]	[2]	[3]	[4]

<questions 1-16 will appear here in half of the surveys>

Follow-up questions

		Please check only one answer:	Do not have condition	Thought or been told I might have	Told by doctor or other professional that I do have
Z02c	49	Have you ever suspected or been told by a health care professional that you have obsessive-compulsive disorder (OCD)?	[1]	[2]	[3]

Z01 50 Please list any other mental health conditions (such as anxiety, depression, or "nerves") for which you have consulted a health care professional. _____

Thank you for your participation!

Appendix B: Laboratory Study Protocol

The following is the two-part protocol administered to participants in Study 2. The first portion (pages B-2 to B-13) is a set of self-administered questionnaires. The remainder (pages B-14 to B-21) is orally administered by the experimenter and includes a semi-structured interview for OCD symptoms. The experimenter reads one of three introduction scripts, shown on page B-14, prior to the self-administered portion.

Informed Consent Agreement

Page 1 of 1
Project Title: Clinical Variables in the Assessment of Anxiety

Please read this consent agreement carefully before you decide to participate in the study.

Purpose of the research study: The purpose of the study is to determine which methods are effective in accurately screening for anxiety (*i.e.* a person's tendency to worry or doubt).

What you will do in the study: You will complete a packet consisting of questionnaires about your tendency to worry or doubt, feel anxious and depressed, experience unwanted thoughts, and your identification with others like yourself. You will also be asked a few questions about worries you may experience, and what you do about your worries. A few participants have been randomly selected to participate in an optional interview about their experiences and thoughts regarding the questionnaires. At the end of the study you will be given additional information about the study and the option to request that your data be removed from the analysis and destroyed.

Time required: You will spend about 50 minutes in this study. If you are selected for an interview, it will take approximately an additional hour and a half.

Risks: Although most participants will find the questions straightforward, some may find a few of the questions unpleasant or embarrassing.

Benefits: There are no direct benefits to you of participating in this research study. The study may help us to better assess anxiety.

Confidentiality: The information that you give in the study will be handled confidentially. Your information will be assigned a code number. The list connecting your name to this number will be kept in a locked file and/or secure database. When the study is completed and the data have been analyzed, this list will be destroyed. Your name will not be used in any report. Unless you need participation credit for a course, you may fill out this survey using your first name only. Subjects selected for an interview will be audio or video taped. Your tape will be reviewed by research assistants, transcribed, summarized and then erased after the study is complete.

Voluntary participation: Your participation in the study is completely voluntary.

Right to withdraw from the study: You have the right to withdraw from the study at any time without penalty. You will still receive full credit (or payment, *where applicable*) for the study.

How to withdraw from the study: If you want to withdraw from the study, tell the experimenter. There is no penalty for withdrawing. You will still receive full credit (or payment, *where applicable*) for the experiment. You will be given additional information about the study and the option to request that your data be destroyed.

Payment: *Psychology students:* You will receive no payment for completing the questionnaires; instead you will receive 1-hour participation credit. If you were selected for an interview, you will receive additional participation credit equal to the amount of time spent in the interview, plus $10. *Others:* You will receive $25 for completing the questionnaires. If you were selected for an interview, you will receive an additional $35.

Who to contact if you have questions about the study:

Principal Investigator: Monnica T. Williams, M.A.
University of Virginia, Department of Psychology
P.O. Box 400400, Gilmer Hall, Room 331 D/E
Charlottesville, VA 22904-4400
Telephone: (434) 982-5586, email: mt4h@virginia.edu

Faculty Advisor: Eric Turkheimer, Ph.D.
University of Virginia, Department of Psychology
P.O. Box 400400, Gilmer Hall, Room 313/320
Charlottesville, VA 22904-4400
Telephone: (434) 982-4732

Who to contact about your rights in the study: Dr. Luke Kelly, Chairman, Institutional Review Board for the Behavioral Sciences, 314 Madison Hall, University of Virginia, Charlottesville, VA 22904. Tel: (434) 924-3606

Agreement: I agree to participate in the research study described above. [consent]

Signature: _____ **Date:** _____
You will receive a copy of this form for your records.

IRB Project # 2003-0262-00
Approved from 10/9/03 to 8/25/04

This questionnaire is designed to measure your tendency to worry or doubt and how you identify with others. It will take about thirty minutes to complete. Please answer the following questions as honestly as possible.

[DEMO] Background and Demographics

SubjName	1	Name *(last name optional)*	_____
School	2	University/Institution *(optional)*	_____
StudentID	3	Student ID No. *(if applicable)*	_____
Age	4	Age	_____
Gender	5	Sex	[ ] Male [ ] Female
Education EducationMom EducationDad	6	Highest Educational Level	Self / Mother / Father [ ] [ ] [ ] 8th Grade or Less [ ] [ ] [ ] Some High School [ ] [ ] [ ] High School Graduate or GED [ ] [ ] [ ] Some College or 2 Year Degree [ ] [ ] [ ] College Graduate (4 year degree) [ ] [ ] [ ] Graduate Degree [ ] [ ] Unknown
MaritalStatus	7	Marital Status	[ ] Never Married/Single (living alone) [ ] Never Married/Single (living with parents) [ ] Married [ ] Cohabiting (living with boyfriend/girlfriend) [ ] Divorced [ ] Separated [ ] Widowed
Occupation	8	Occupational Status	[ ] Full-time employment (30 hours/week or more) [ ] Part-time employment (less than 30 hours/week) [ ] Unemployed, seeking work [ ] Unemployed, not seeking work [ ] Retired
StudentStatus	9	Student Status	[ ] Full-time student [ ] Part-time student [ ] Not a student
Religion1	10a	Religion or Faith	[ ] Atheist [ ] Agnostic [ ] Catholic [ ] Jewish [ ] Muslim [ ] Protestant [ ] Other
Religion2	10b	Please specify your	religion/faith: _____
State	11	State	_____ Country: _____
Zip	12	Zip Code	_____ *(for demographic purposes)*
Found	13	How did you hear about this study?	[ ] Email [ ] Mail (US Postal Service) [ ] Flyer/Poster [ ] Experimentrix (UVa Psych Subject Pool) [ ] Phone Call [ ] Friend/Word of Mouth [ ] Other: _____

[MEIM] One important aspect of personal identity is ethnic identification. Please answer the following questions about your ethnic identification and related beliefs.

E00	1	In terms of ethnic group, I consider myself to be:	(fill in)			
		Check the box to indicate how much you agree or disagree with each statement.	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
E01	2	I have spent time trying to find out more about my own ethnic group, such as its history, traditions, and customs.	[0]	[1]	[2]	[3]
E02	3	I am active in organizations or social groups that include mostly members of my own ethnic group.	[0]	[1]	[2]	[3]
E03	4	I have a clear sense of my ethnic background and what it means for me.	[0]	[1]	[2]	[3]
E04	5	I like meeting and getting to know people from ethnic groups other than my own.	[0]	[1]	[2]	[3]
E05	6	I think a lot about how my life will be affected by my ethnic group membership.	[0]	[1]	[2]	[3]
E06	7	I am happy that I am a member of the group I belong to.	[0]	[1]	[2]	[3]
E07	8	I sometimes feel it would be better if different ethnic groups didn't try to mix together.	[0]	[1]	[2]	[3]
E08	9	I am not very clear about the role of my ethnicity in my life.	[0]	[1]	[2]	[3]
E09	10	I often spend time with people from ethnic groups other than my own.	[0]	[1]	[2]	[3]
E10	11	I really have not spent much time trying to learn more about the culture and history of my ethnic group.	[0]	[1]	[2]	[3]
E11	12	I have a strong sense of belonging to my own ethnic group.	[0]	[1]	[2]	[3]
E12*	13	I understand what my ethnic group membership means to me, as related to my own group and other groups.	[0]	[1]	[2]	[3]
E13*	14	To learn more about my ethnic background, I have often talked to other people about my ethnic group.	[0]	[1]	[2]	[3]
E14	15	I have a lot of pride in my ethnic group and its accomplishments.	[0]	[1]	[2]	[3]
E15	16	I don't try to become friends with people from other ethnic groups.	[0]	[1]	[2]	[3]
E16	17	I participate in cultural practices of my own group, such as special food, music, or customs.	[0]	[1]	[2]	[3]
E17	18	I am involved in activities with people from other ethnic groups.	[0]	[1]	[2]	[3]
E18	19	I feel a strong attachment towards my own ethnic group.	[0]	[1]	[2]	[3]
E19	20	I enjoy being around people from ethnic groups other than my own.	[0]	[1]	[2]	[3]
E20	21	I feel good about my cultural or ethnic background.	[0]	[1]	[2]	[3]
E24'	22	I accept myself as a member of my ethnic group.	[0]	[1]	[2]	[3]
E25'	23	Most of the time I don't see myself as a typical member of my ethnic group.	[0]	[1]	[2]	[3]
E26'	24	I identify myself as a member of my ethnic group.	[0]	[1]	[2]	[3]

E21 25 *Check the number that gives the best answer to each question.*

My race/ethnicity is:

[1] Asian, Asian-American, or Oriental
[2] Black or African-American
[3] Hispanic or Latino/a (of any race)
[4] White, Caucasian or European (not Hispanic)
[5] Native American/American Indian/Eskimo/Aleut.
[6] Middle Eastern/East Indian/Pakistani
[7] Mixed; parents are from two different groups
[8] Other (write in):_____

E22	26	My father's race/ethnicity is *(use numbers on previous page)*	_____
E23	27	My mother's race/ethnicity is *(use numbers on previous page)*	_____
X00	28	Were you born in the United States?	yes [ ] no [ ]
		(a) If not, how many years have you lived in the U.S.? _____	
		(b) Country of origin _____	

X01	29	How much of your free time do you spend exclusively with people from your own ethnic group?	None [ ]	Some [ ]	Half [ ]	Most [ ]	All [ ]

Please answer the following questions about your tendency to worry or doubt. There are no right or wrong answers and no trick questions. Work quickly and do not think too long about the exact meaning of the questions.

		[MOCI]	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
M01 (P06)	1	I avoid using public telephones because of possible contamination.	[0]	[1]	[2]	[3]
M02 (P33)	2	I frequently get nasty thoughts and have trouble getting rid of them.	[0]	[1]	[2]	[3]
M03	3	I am more concerned about honesty than most people.	[0]	[1]	[2]	[3]
M04 (P30)	4	I am often late because I can't seem to get through everything on time.	[0]	[1]	[2]	[3]
M05 (P10)	5	I don't worry unduly about contamination if I touch an animal.	[0]	[1]	[2]	[3]
M06 (P20)	6	I frequently have to check things (e.g., gas or water taps, doors, etc.) several times.	[0]	[1]	[2]	[3]
M07	7	I have a very strict conscience.	[0]	[1]	[2]	[3]
V01	8	I have never seen the moon.	[0]	[1]	[2]	[3]
M08	9	I find that almost every day I am upset by unpleasant thoughts that come into my mind against my will.	[0]	[1]	[2]	[3]
M09	10	I do not worry unduly if I accidentally bump into somebody.	[0]	[1]	[2]	[3]
M10	11	I usually have serious doubts about the simple everyday things I do.	[0]	[1]	[2]	[3]
M11	12	Neither of my parents was very strict during my childhood.	[0]	[1]	[2]	[3]
M12	13	I tend to get behind in my work because I repeat things over and over again.	[0]	[1]	[2]	[3]
M13	14	I use only an average amount of soap.	[0]	[1]	[2]	[3]
M14	15	Some numbers are extremely unlucky.	[0]	[1]	[2]	[3]
M15 (P25)	16	I do not check letters over and over again before mailing them.	[0]	[1]	[2]	[3]
M16	17	I do not take a long time to dress in the morning.	[0]	[1]	[2]	[3]
M17	18	I am not excessively concerned about cleanliness.	[0]	[1]	[2]	[3]
M18	19	One of my major problems is that I pay too much attention to detail.	[0]	[1]	[2]	[3]
M19 (P05)	20	I can use well-kept toilets without any hesitation.	[0]	[1]	[2]	[3]
M20	21	My major problem is repeated checking.	[0]	[1]	[2]	[3]
M21	22	I am not unduly concerned about germs and diseases.	[0]	[1]	[2]	[3]
M22	23	I do not tend to check things more than once.	[0]	[1]	[2]	[3]
M23	24	I do not stick to a very strict routine when doing ordinary things.	[0]	[1]	[2]	[3]
M24 (P01)	25	My hands do not feel dirty after touching money.	[0]	[1]	[2]	[3]
M25	26	I do not usually count when doing a routine task.	[0]	[1]	[2]	[3]
M26	27	I take rather a long time to complete my washing in the morning.	[0]	[1]	[2]	[3]
M27	28	I do not use a great deal of antiseptics.	[0]	[1]	[2]	[3]

		[MOCI]	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
M28	29	I spend a lot of time every day checking things over and over again.	[0]	[1]	[2]	[3]
M29 (P16)	30	Hanging and folding my clothes at night does not take up a lot of time.	[0]	[1]	[2]	[3]
M30	31	Even when I do something very carefully I often feel that it is not quite right.	[0]	[1]	[2]	[3]
V02	32	I've become convinced that parts of my body keep falling off.	[0]	[1]	[2]	[3]
Y14	33	I worry that others may try to take advantage of me.	[0]	[1]	[2]	[3]

Below is a list of some of the ways you may have felt or behaved. Please indicate how often you have felt this way during the past week by checking the appropriate space.

		[CESD]	Rarely or none of the time (Less than 1 day)	Some of a Little of the Time (1-2 days)	Occasionally or a Moderate Amount of the Time (3-4 days)	Most or All of the Time (5-7 days)
CEDS01	1	I was bothered by things that usually don't bother me.	[0]	[1]	[2]	[3]
CEDS02	2	I did not feel like eating; my appetite was poor.	[0]	[1]	[2]	[3]
CEDS03	3	I felt that I could not shake off the blues even with help from my family or friends.	[0]	[1]	[2]	[3]
CEDS04	4	I felt that I was just as good as other people.	[0]	[1]	[2]	[3]
CEDS05	5	I had trouble keeping my mind on what I was doing.	[0]	[1]	[2]	[3]
CEDS06	6	I felt depressed.	[0]	[1]	[2]	[3]
CEDS07	7	I felt that everything I did was an effort.	[0]	[1]	[2]	[3]
CEDS08	8	I felt hopeful about the future.	[0]	[1]	[2]	[3]
CEDS09	9	I thought my life had been a failure.	[0]	[1]	[2]	[3]
CEDS10	10	I felt fearful.	[0]	[1]	[2]	[3]
CEDS11	11	My sleep was restless.	[0]	[1]	[2]	[3]
CEDS12	12	I was happy.	[0]	[1]	[2]	[3]
CEDS13	13	I talked less than usual.	[0]	[1]	[2]	[3]
CEDS14	14	I felt lonely.	[0]	[1]	[2]	[3]
CEDS15	15	People were unfriendly.	[0]	[1]	[2]	[3]
CEDS16	16	I enjoyed life.	[0]	[1]	[2]	[3]
CEDS17	17	I had crying spells.	[0]	[1]	[2]	[3]
CEDS18	18	I felt sad.	[0]	[1]	[2]	[3]
CEDS19	19	I felt that people disliked me.	[0]	[1]	[2]	[3]
CEDS20	20	I could not get "going."	[0]	[1]	[2]	[3]

[CSUP]

		Rate your replies as follows:	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
X02	1	When I go out I am usually not concerned about my appearance.	[0]	[1]	[2]	[3]
X03	2	I would hate to wear the same clothes two days in a row.	[0]	[1]	[2]	[3]
Y01	3	Bothersome thoughts have caused difficulty in work or school.	[0]	[1]	[2]	[3]
X04	4	I can't stand to be in my home if it's messy.	[0]	[1]	[2]	[3]
X05	5	I would love to own a furry pet.	[0]	[1]	[2]	[3]
Y02	6	I worry a great deal about contracting a life-threatening illness.	[0]	[1]	[2]	[3]
X06	7	I worry that someone will point out minor mistakes I may have made.	[0]	[1]	[2]	[3]
X07	8	I have to work harder than most people to prove myself.	[0]	[1]	[2]	[3]
Y03	9	I am extremely concerned about spreading germs to other people.	[0]	[1]	[2]	[3]
X08	10	I am afraid others will think I am untidy.	[0]	[1]	[2]	[3]
X09	11	I worry that I will not be treated as well as others.	[0]	[1]	[2]	[3]
Y04	12	When driving I never worry that I may have hit a person unknowingly.	[0]	[1]	[2]	[3]
X10	13	It's very important that my working environment be orderly.	[0]	[1]	[2]	[3]
X11	14	I would be equally happy with a used item over a new one in most circumstances.	[0]	[1]	[2]	[3]
Y05	15	I am bothered by skin problems (i.e. itching, rash, redness, etc.)	[0]	[1]	[2]	[3]
X12	16	I often feel others are expecting me to do something bad.	[0]	[1]	[2]	[3]
X13	17	I prefer to buy clothing at a discount store.	[0]	[1]	[2]	[3]
Y06	18	Persistent worries have not caused problems in close relationships.	[0]	[1]	[2]	[3]
X14	19	I am very concerned about how my hair looks.	[0]	[1]	[2]	[3]
X15	20	I get very annoyed when people rearrange or move my things.	[0]	[1]	[2]	[3]
Y07	21	I fear that I may have caused a fatal tragedy.	[0]	[1]	[2]	[3]
X16	22	I do not care to spend a great deal of time with animals.	[0]	[1]	[2]	[3]
X17	23	Usually I expect to be criticized.	[0]	[1]	[2]	[3]
L19	24	I make sure my clothes look clean and neat, no matter what I am doing.	[0]	[1]	[2]	[3]
X18	25	I only eat well-cooked meats because undercooked meat may be contaminated.	[0]	[1]	[2]	[3]
X19	26	I do not spend much money on hair products.	[0]	[1]	[2]	[3]
Y08	27	I have been known to rescue valuable items from wastebaskets.	[0]	[1]	[2]	[3]
X20	28	I choose not to expend too much energy worrying about what others think of me.	[0]	[1]	[2]	[3]
X21	29	I am happy with the way I look.	[0]	[1]	[2]	[3]
L47	30	I find it difficult to throw things away.	[0]	[1]	[2]	[3]
X22	31	The medical establishment is trustworthy.	[0]	[1]	[2]	[3]
X23	32	I would consider visiting a psychiatrist about my worries.	[0]	[1]	[2]	[3]
Y09 (P13)	33	I often ask people to repeat themselves because I'm not sure I heard it right the first time.	[0]	[1]	[2]	[3]
Y10 (P46)	34	When I look down from a high place I get very afraid I might throw myself off.	[0]	[1]	[2]	[3]
Y11	35	I am continually troubled by blasphemous or sacrilegious thoughts.	[0]	[1]	[2]	[3]
Y12	36	I am bothered by many unwanted and inappropriate sexual thoughts.	[0]	[1]	[2]	[3]
Y13	37	I keep many long lists.	[0]	[1]	[2]	[3]
V03	38	I have had nothing to eat or drink for the past year.	[0]	[1]	[2]	[3]
V04	39	Sometimes I get angry.	[0]	[1]	[2]	[3]

A number of statements which people use to describe themselves are given below. Read each statement and then check the appropriate box to the right of the statement to indicate how you feel RIGHT NOW, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement, but give the answer which seems to describe your present feelings best.

		[STAI-S] Rate your replies as follows:	not at all	somewhat so	moderately	very much so
SS01	1	I feel calm.	[0]	[1]	[2]	[3]
SS02	2	I feel secure.	[0]	[1]	[2]	[3]
SS03	3	I feel tense.	[0]	[1]	[2]	[3]
SS04	4	I feel strained.	[0]	[1]	[2]	[3]
SS05	5	I feel at ease.	[0]	[1]	[2]	[3]
SS06	6	I feel upset.	[0]	[1]	[2]	[3]
SS07	7	I am presently worrying over possible misfortunes.	[0]	[1]	[2]	[3]
SS08	8	I feel satisfied.	[0]	[1]	[2]	[3]
SS09	9	I feel frightened.	[0]	[1]	[2]	[3]
SS10	10	I feel comfortable.	[0]	[1]	[2]	[3]
SS11	11	I feel self-confident.	[0]	[1]	[2]	[3]
SS12	12	I feel nervous.	[0]	[1]	[2]	[3]
SS13	13	I am jittery.	[0]	[1]	[2]	[3]
SS14	14	I feel indecisive.	[0]	[1]	[2]	[3]
SS15	15	I am relaxed.	[0]	[1]	[2]	[3]
SS16	16	I feel confident.	[0]	[1]	[2]	[3]
SS17	17	I am worried.	[0]	[1]	[2]	[3]
SS18	18	I feel confused.	[0]	[1]	[2]	[3]
SS19	19	I feel steady.	[0]	[1]	[2]	[3]
SS20	20	I feel pleasant.	[0]	[1]	[2]	[3]

When choosing an answer, think about what you are like most of the time. Try to avoid using the middle rating, but indicate whether you usually disagree or agree with the statements about your own beliefs and attitudes.

		[OBQ] Choose the answer that best describes how you think:	disagree very much	disagree a little	neither agree nor disagree	agree moder-ately	agree very much
obq06	1	I often think things around me are unsafe.	[0]	[1]	[2]	[3]	[4]
obq09	2	I am much more likely to be punished than are others.	[0]	[1]	[2]	[3]	[4]
obq16	3	Things that are minor annoyances for most people seem like disasters to me.	[0]	[1]	[2]	[3]	[4]
obq30	4	Bad things are more likely to happen to me than to other people.	[0]	[1]	[2]	[3]	[4]
obq39	5	Avoiding serious problems (for example illness or accidents) requires constant effort on my part.	[0]	[1]	[2]	[3]	[4]
obq40	6	Small problems always seem to turn into big ones in my life.	[0]	[1]	[2]	[3]	[4]
obq50	7	If I do not take extra precautions, I am more likely than others to have or cause a serious disaster.	[0]	[1]	[2]	[3]	[4]
obq52	8	I believe the world is a dangerous place.	[0]	[1]	[2]	[3]	[4]
obq61	9	I am more likely than other people to accidentally cause harm to myself or others.	[0]	[1]	[2]	[3]	[4]
obq68	10	Even when I am careful, I often think that bad things will happen.	[0]	[1]	[2]	[3]	[4]
obq72	11	Harmful events will happen unless I am very careful.	[0]	[1]	[2]	[3]	[4]
obq79	12	Even ordinary events in my life are full of risk.	[0]	[1]	[2]	[3]	[4]
obq80	13	When things go too well for me, something bad will follow.	[0]	[1]	[2]	[3]	[4]
obq82	14	When anything goes wrong in my life, it is likely to have terrible effects.	[0]	[1]	[2]	[3]	[4]
obq02	13	Having control over my thoughts is a sign of good character.	[0]	[1]	[2]	[3]	[4]

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Use the following scale to record your answers.

Indicate to what extent you GENERALLY feel this way, that is how you feel ON AVERAGE.

		[PANASg]	Use the following scale to record your answers:	very slightly or not at all	a little	moderately	quite a bit	extremely
PAN01g	1	interested		[0]	[1]	[2]	[3]	[4]
PAN02g	2	distressed		[0]	[1]	[2]	[3]	[4]
PAN03g	3	excited		[0]	[1]	[2]	[3]	[4]
PAN04g	4	upset		[0]	[1]	[2]	[3]	[4]
PAN05g	5	strong		[0]	[1]	[2]	[3]	[4]
PAN06g	6	guilty		[0]	[1]	[2]	[3]	[4]
PAN07g	7	scared		[0]	[1]	[2]	[3]	[4]
PAN08g	8	hostile		[0]	[1]	[2]	[3]	[4]
PAN09g	9	enthusiastic		[0]	[1]	[2]	[3]	[4]
PAN10g	10	proud		[0]	[1]	[2]	[3]	[4]
PAN11g	11	irritable		[0]	[1]	[2]	[3]	[4]
PAN12g	12	alert		[0]	[1]	[2]	[3]	[4]
PAN13g	13	ashamed		[0]	[1]	[2]	[3]	[4]
PAN14g	14	inspired		[0]	[1]	[2]	[3]	[4]
PAN15g	15	nervous		[0]	[1]	[2]	[3]	[4]
PAN16g	16	determined		[0]	[1]	[2]	[3]	[4]
PAN17g	17	attentive		[0]	[1]	[2]	[3]	[4]
PAN18g	18	jittery		[0]	[1]	[2]	[3]	[4]
PAN19g	19	active		[0]	[1]	[2]	[3]	[4]
PAN20g	20	afraid		[0]	[1]	[2]	[3]	[4]

Indicate to what extent you feel this way RIGHT NOW, that is at THIS PRESENT MOMENT.

		[PANASn]	Use the following scale to record your answers:	very slightly or not at all	a little	moderately	quite a bit	extremely
PAN01n	1	interested		[0]	[1]	[2]	[3]	[4]
PAN02n	2	distressed		[0]	[1]	[2]	[3]	[4]
PAN03n	3	excited		[0]	[1]	[2]	[3]	[4]
PAN04n	4	upset		[0]	[1]	[2]	[3]	[4]
PAN05n	5	strong		[0]	[1]	[2]	[3]	[4]
PAN06n	6	guilty		[0]	[1]	[2]	[3]	[4]
PAN07n	7	scared		[0]	[1]	[2]	[3]	[4]
PAN08n	8	hostile		[0]	[1]	[2]	[3]	[4]
PAN09n	9	enthusiastic		[0]	[1]	[2]	[3]	[4]
PAN10n	10	proud		[0]	[1]	[2]	[3]	[4]
PAN11n	11	irritable		[0]	[1]	[2]	[3]	[4]
PAN12n	12	alert		[0]	[1]	[2]	[3]	[4]
PAN13n	13	ashamed		[0]	[1]	[2]	[3]	[4]
PAN14n	14	inspired		[0]	[1]	[2]	[3]	[4]
PAN15n	15	nervous		[0]	[1]	[2]	[3]	[4]
PAN16n	16	determined		[0]	[1]	[2]	[3]	[4]
PAN17n	17	attentive		[0]	[1]	[2]	[3]	[4]
PAN18n	18	jittery		[0]	[1]	[2]	[3]	[4]
PAN19n	19	active		[0]	[1]	[2]	[3]	[4]
PAN20n	20	afraid		[0]	[1]	[2]	[3]	[4]

Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by that symptom during the past month, including today, by marking the corresponding space in the column next to each symptom.

		[BAI] **Rate your replies as follows:**	Not at all	Mildly but it didn't bother me much	Moderately -- it wasn't pleasant at times	Severely - it bothered me a lot
BAI01	1	Numbness or tingling	[0]	[1]	[2]	[3]
BAI02	2	Feeling hot	[0]	[1]	[2]	[3]
BAI03	3	Wobbliness in legs	[0]	[1]	[2]	[3]
BAI04	4	Unable to relax	[0]	[1]	[2]	[3]
BAI05	5	Fear of worst happening	[0]	[1]	[2]	[3]
BAI06	6	Dizzy or lightheaded	[0]	[1]	[2]	[3]
BAI07	7	Heart pounding/racing	[0]	[1]	[2]	[3]
BAI08	8	Unsteady	[0]	[1]	[2]	[3]
BAI09	9	Terrified or afraid	[0]	[1]	[2]	[3]
BAI10	10	Nervous	[0]	[1]	[2]	[3]
BAI11	11	Feeling of choking	[0]	[1]	[2]	[3]
BAI12	12	Hands trembling	[0]	[1]	[2]	[3]
BAI13	13	Shaky / unsteady	[0]	[1]	[2]	[3]
BAI14	14	Fear of losing control	[0]	[1]	[2]	[3]
BAI15	15	Difficulty in breathing	[0]	[1]	[2]	[3]
BAI16	16	Fear of dying	[0]	[1]	[2]	[3]
BAI17	17	Scared	[0]	[1]	[2]	[3]
BAI18	18	Indigestion	[0]	[1]	[2]	[3]
BAI19	19	Faint / lightheaded	[0]	[1]	[2]	[3]
BAI20	20	Face flushed	[0]	[1]	[2]	[3]
BAI21	21	Hot/cold sweats	[0]	[1]	[2]	[3]

The following statements refer to thoughts and behaviors which may occur to everyone in everyday life. For each statement, choose the reply which best seems to fit you and the degree of disturbance which such thoughts or behaviors may create.

[PADU]

		Rate your replies as follows:	not at all	a little	somewhat	a lot	very much
P01	1	I feel my hands are dirty when I touch money.	[0]	[1]	[2]	[3]	[4]
P02	2	I think even slight contact with bodily secretions (perspiration, saliva, urine, etc.) may contaminate my clothes or somehow harm me.	[0]	[1]	[2]	[3]	[4]
P03	3	I find it difficult to touch an object when I know it has been touched by strangers or by certain people.	[0]	[1]	[2]	[3]	[4]
P04	4	I find it difficult to touch garbage or dirty things.	[0]	[1]	[2]	[3]	[4]
P05	5	I avoid using public toilets because I am afraid of disease and contamination.	[0]	[1]	[2]	[3]	[4]
P06	6	I avoid using public telephones because I am afraid of contagion and disease.	[0]	[1]	[2]	[3]	[4]
P07	7	I wash my hands more often and longer than necessary.	[0]	[1]	[2]	[3]	[4]
P08	8	I sometimes have to wash or clean myself simply because I think I may be dirty or "contaminated."	[0]	[1]	[2]	[3]	[4]
P09	9	If I touch something I think is "contaminated," I immediately have to wash or clean myself.	[0]	[1]	[2]	[3]	[4]
P10	10	If an animal touches me, I feel dirty and immediately have to wash myself or change my clothing.	[0]	[1]	[2]	[3]	[4]
P11	11	When doubts and worries come to my mind, I cannot rest until I have talked them over with a reassuring person.	[0]	[1]	[2]	[3]	[4]
P12	12	When I talk, I tend to repeat the same things and the same sentences several times.	[0]	[1]	[2]	[3]	[4]
P13	13	I tend to ask people to repeat the same things to me several times consecutively, even though I did understand what they said the first time.	[0]	[1]	[2]	[3]	[4]
P14	14	I feel obliged to follow a particular order in dressing, undressing, and washing myself.	[0]	[1]	[2]	[3]	[4]
P15	15	Before going to sleep, I have to do certain things in a certain order.	[0]	[1]	[2]	[3]	[4]
P16	16	Before going to bed, I have to hang up or fold my clothes in a special way.	[0]	[1]	[2]	[3]	[4]
P17	17	I feel I have to repeat certain numbers for no reason.	[0]	[1]	[2]	[3]	[4]
P18	18	I have to do things several times before I think they are properly done.	[0]	[1]	[2]	[3]	[4]
P19	19	I tend to keep on checking things more often than necessary.	[0]	[1]	[2]	[3]	[4]
P20	20	I check and recheck gas and water taps and light switches after turning them off.	[0]	[1]	[2]	[3]	[4]
P21	21	I return home to check doors, windows, drawers, etc., to make sure they are properly shut.	[0]	[1]	[2]	[3]	[4]
P22	22	I keep on checking forms, documents, checks, etc. in detail to make sure I have filled them in correctly.	[0]	[1]	[2]	[3]	[4]
P23	23	I keep on going back to see that matches, cigarettes, etc. are properly extinguished.	[0]	[1]	[2]	[3]	[4]
P24	24	When I handle money, I count and recount it several times.	[0]	[1]	[2]	[3]	[4]
P25	25	I check letters carefully many times before posting them.	[0]	[1]	[2]	[3]	[4]

		[PADU] Rate your replies as follows:	not at all	a little	somewhat	a lot	very much
P26	26	I find it difficult to make decisions, even about unimportant matters.	[0]	[1]	[2]	[3]	[4]
P27	27	Sometimes I am not sure I have done things which in fact I know I have done.	[0]	[1]	[2]	[3]	[4]
P28	28	I have the impression that I will never be able to explain things clearly, especially when talking about important matters that involve me.	[0]	[1]	[2]	[3]	[4]
P29	29	After doing something carefully, I still have the impression I have either done it badly or not finished it.	[0]	[1]	[2]	[3]	[4]
P30	30	I am sometimes late because I keep on doing certain things more often than necessary.	[0]	[1]	[2]	[3]	[4]
P31	31	I invent doubts and problems about most of the things I do.	[0]	[1]	[2]	[3]	[4]
P32	32	When I start thinking of certain things, I become obsessed with them.	[0]	[1]	[2]	[3]	[4]
P33	33	Unpleasant thoughts come into my mind against my will and I cannot get rid of them.	[0]	[1]	[2]	[3]	[4]
P34	34	Obscene or dirty words come into my mind and I cannot get rid of them.	[0]	[1]	[2]	[3]	[4]
P35	35	My brain constantly goes its own way, and I find it difficult to attend to what is happening round me.	[0]	[1]	[2]	[3]	[4]
P36	36	I imagine catastrophic consequences as a result of absent-mindedness or minor errors which I make.	[0]	[1]	[2]	[3]	[4]
P37	37	I think or worry at length about having hurt someone without knowing it.	[0]	[1]	[2]	[3]	[4]
P38	38	When I hear about a disaster, I think it is somehow my fault.	[0]	[1]	[2]	[3]	[4]
P39	39	I sometimes worry at length for no reason that I have hurt myself or have some disease.	[0]	[1]	[2]	[3]	[4]
P40	40	I sometimes start counting objects for no reason.	[0]	[1]	[2]	[3]	[4]
P41	41	I feel I have to remember completely unimportant numbers.	[0]	[1]	[2]	[3]	[4]
P42	42	When I read I have the impression that I have missed something important and must go back and reread the passage at least two or three times.	[0]	[1]	[2]	[3]	[4]
P43	43	I worry about remembering completely unimportant things and make an effort not to forget them.	[0]	[1]	[2]	[3]	[4]
P44	44	When a thought or doubt comes into my mind, I have to examine it from all points of view and cannot stop until I have done so.	[0]	[1]	[2]	[3]	[4]
P45	45	In certain situations, I am afraid of losing my self-control and doing embarrassing things.	[0]	[1]	[2]	[3]	[4]
V05	46	I do not like anyone I know.	[0]	[1]	[2]	[3]	[4]
P46	47	When I look down from a bridge or a very high window, I feel an impulse to throw myself into space.	[0]	[1]	[2]	[3]	[4]
P47	48	When I see a train approaching, I sometimes think I could throw myself under its wheels.	[0]	[1]	[2]	[3]	[4]
P48	49	At certain moments, I am tempted to tear off my clothes in public.	[0]	[1]	[2]	[3]	[4]
P49	50	While driving, I sometimes feel an impulse to drive the car into someone or something.	[0]	[1]	[2]	[3]	[4]
P50	51	Seeing weapons excites me and makes me think violent thoughts.	[0]	[1]	[2]	[3]	[4]
P51	52	I get upset and worried at the sight of knives, daggers, and other pointed objects.	[0]	[1]	[2]	[3]	[4]

[PADU]

		Rate your replies as follows:	not at all	a little	some-what	a lot	very much
P52	53	I sometimes feel something inside me which makes me do things which are really senseless and which I do not want to do.	[0]	[1]	[2]	[3]	[4]
P53	54	Sometimes I feel the need to break or damage things for no reason.	[0]	[1]	[2]	[3]	[4]
P54	55	I sometimes have an impulse to steal other people's belongings, even if they are of no use to me.	[0]	[1]	[2]	[3]	[4]
P55	56	I am sometimes almost irresistibly tempted to steal something from the supermarket.	[0]	[1]	[2]	[3]	[4]
P56*	57	Sometimes I have an impulse to hurt defenseless children or animals, though I would never do it.	[0]	[1]	[2]	[3]	[4]
P57	58	I feel I have to make certain gestures or walk in a special way.	[0]	[1]	[2]	[3]	[4]
P58	59	In certain situations, I feel an impulse to eat too much, even if I am then ill.	[0]	[1]	[2]	[3]	[4]
P59	60	When I hear about a suicide or a crime, I am upset for a long time and find it difficult to stop thinking about it.	[0]	[1]	[2]	[3]	[4]
V06	61	Once in a while I think of things too bad to talk about.	[0]	[1]	[2]	[3]	[4]
P60	62	I invent useless worries about germs and diseases.	[0]	[1]	[2]	[3]	[4]
O01	63	I have saved up so many things that they get in the way.	[0]	[1]	[2]	[3]	[4]
O02	64	I get upset if objects are not arranged properly.	[0]	[1]	[2]	[3]	[4]
O04	65	I feel compelled to count while I am doing things.	[0]	[1]	[2]	[3]	[4]
O06	66	I find it difficult to control my own thoughts.	[0]	[1]	[2]	[3]	[4]
O07	67	I collect things I don't need.	[0]	[1]	[2]	[3]	[4]
O08	68	I repeatedly check doors, windows, drawers, etc.	[0]	[1]	[2]	[3]	[4]
O13	69	I avoid throwing things away because I am afraid I might need them later.	[0]	[1]	[2]	[3]	[4]
O15	70	I need things to be arranged in a particular order.	[0]	[1]	[2]	[3]	[4]
O16	71	I feel that there are good and bad numbers.	[0]	[1]	[2]	[3]	[4]

[FOLL] Follow-Up

Z01	1	Have you ever seen a doctor or other professional for concerns about anxiety or nerves?	[**yes**]	[**no**]

		Please check only one for each disorder:	Do not have condition	Thought or been told I might have	Told by doctor or other professional that I do have
Z02a	2a	Generalized Anxiety Disorder (GAD)	[1]	[2]	[3]
Z02b	2b	Social Anxiety Disorder or Social Phobia	[1]	[2]	[3]
Z02c	2c	Obsessive-Compulsive Disorder (OCD)	[1]	[2]	[3]
Z02d	2d	Panic Disorder	[1]	[2]	[3]
Z02e	2e	Post-Traumatic Stress Disorder	[1]	[2]	[3]
Z02f	2f	Depression	[1]	[2]	[3]
Z02e	2g	Specific Phobia	[1]	[2]	[3]

Z04'	4	If we have questions about any of your responses, may we contact you for more information?	[**yes**]	[**no**]
Z04		If so, please list your phone number here: _____		
Z05	5	Please list your email address here: _____		
Z06	6	Comments:		

Thank you for your participation!

Experimenter Name: Experimenter1 Date: Date1 Time: Time1

Experimenter Scripts

[script]
[*All read*.] Thank you for volunteering to participate in this study. Please answer the questions as honestly as possible. It may seem like some of the questions do not apply to you – do your best to respond to these anyway. Do not be concerned if some of the questions seem repetitive or unusual. Take your time and do not rush.

[1] **Script for Group 1:** *Anxiety-Reducing*
Nationwide studies have shown that some minority groups are less likely to suffer from certain anxiety disorders. Contrary to popular stereotypes, these groups also spend more time washing and grooming, and are less likely to use drugs and tobacco. We would like you to complete the following questionnaires to give us more insight into how these behaviors relate to reports of reduced anxiety. Your responses will not be evaluated individually, but added into the pool of replies from everyone in this study. After you complete the packet, please let me know. I will then ask you some questions related to your tendency to worry or doubt, which will be similar to the items in the written questionnaire.

[2] **Script for Group 2:** *Neutral/Control Group*
We are doing a study of clinical variables in the assessment of anxiety. After you complete the packet, please let me know. I will then ask you some questions related to your tendency to worry or doubt, which will be similar to the items in the written questionnaire.

[3] **Script for Group 3:** *Anxiety-Inducing*
Prior research has shown that people belonging to certain ethnic groups are more likely to give deviant answers in response to questions about washing, cleanliness, thoughts about harming others, and controlling impulses. We would like you to complete the following questionnaires to give us more insight about your thoughts and behaviors in these areas. We will be comparing your responses (along with responses from others in your ethnic group) to those from people in other ethnic and racial groups. These differences will be reported by racial group in scientific papers and forums (but your name will not appear). After you complete the packet, please let me know. I will review some of your responses and give you feedback. I will then ask you some questions related to your tendency to worry or doubt, which will be similar to the items in the written questionnaire.

Repeat script if participant does not appear to be paying attention.

Experimenter Check-List

Participant's Sex: M F Participant's Apparent Race: _____

Apparent mood: _____

_____

Did the participant have any questions: _____

_____

_____

Date2 Time2 Location

Date: _____ Appointment Time: _____ Location & Room: _____

Time Taken to Complete Written Measures: _____ minutes Handedness: RIGHT LEFT

Subject participated for: RESEARCH CREDIT FINANCIAL COMPENSATION ONLY

Subjects participated in: EXPERIMENT ONLY EXPERIMENT PLUS OPTIONAL INTERVIEW

Amount Paid: $_____ Voucher No. _____

Note any irregularities in administration: _____

_____

_____

Notes: _____

_____

_____

Experimenter Name: _____ [Experimenter2]

Experimenter Sex: M F Experimenter Race: _____

[SCID]

Obsessive-Compulsive Disorder Criteria

Scale:
? = Inadequate info
1 = Absent or false
2 = Subthreshold
3 = Threshold or True

1. Now I would like to ask you if you have ever been bothered by thoughts that didn't make any sense and kept coming back to you even when you tried not to have them?
If no obsessions, go to the next page.

A. **A.** Either obsessions or compulsions: Obsessions as defined by (1), (2), (3), and (4):

What were they?

_____

_____

_____

_____

(1) Recurrent and persistent thoughts, impulses, or images that are experienced, at some time during the disturbance as intrusive and inappropriate, and cause marked anxiety and distress.

F85 [?] [1] [2] [3]

If subject is not sure what is meant:
…Thoughts like hurting someone even though you really didn't want to or being contaminated by germs or dirt?

_____

_____

(2) The thoughts, impulses or images are not simply excessive worries about real-life problems.

F86 [?] [1] [2] [3]

When you had these thoughts, did you try hard to get them out of your head? (What would you try to do?)

_____

_____

_____

(3) The person attempts to ignore or suppress such thoughts or neutralize them with some other thought or action.

F87 [?] [1] [2] [3]

If unclear:
Where did you think these thoughts were coming from?

_____

_____

_____

(4) The person recognizes that the obsessional thoughts, impulses or images are a product of his or her own mind (not imposed from without as in thought insertion).

F88 [?] [1] [2] [3]

if present,
DESCRIBE CONTENT OF OBSESSION(S):

_____

_____

2. Was there ever anything that you had to do over and over again and couldn't resist doing, like washing your hands again and again, counting up to a certain number or checking something several times to make sure that you'd done it right…
If no, go to next page

What did you have to do?

_____

_____

_____

_____

If unclear and/or any compulsion reported:
…Why did you have to do (COMPULSIVE ACT)? What would happen if you didn't do it?

_____

_____

_____

_____

If unclear and/or any compulsion reported:
How many times would you (COMPULSIVE ACT)? How much time a day would you spend doing it?

_____

_____

_____

Obsessive-Compulsive Disorder Criteria

Compulsions as defined by (1) and (2):

(1) Repetitive behaviors (e.g. hand-washing, ordering, checking) or mental acts (e.g. praying, counting, repeating words silently) that the person feels driven to perform in response to an obsession, or according to rules that must be applied rigidly.

(2) The behaviors or mental acts are aimed at preventing or reducing distress or preventing some dreaded event or situation; However, these behaviors or mental acts either are not connected in a realistic way with what they are designed to neutralize or prevent, or are clearly excessive.

if present,
DESCRIBE CONTENT OF COMPULSION(S):

_____

_____

_____

Scale:
? = Inadequate info
1 = Absent or false
2 = Subthreshold
3 = Threshold or True

F89
[?] [1] [2] [3]

F90
[?] [1] [2] [3]

Check for obsessions/compulsions

*If **neither** obsessions **nor** compulsions, check here and begin debriefing.*

If either obsessions, compulsions or both, continue below:

F91
[_____] No obsessions or compulsions

Scale:
? = Inadequate info
1 = Absent or false
2 = Subthreshold
3 = Threshold or True

3. Have you (thought about [OBSESSIVE THOUGHTS]/done [COMPULSIVE ACTS]) more than you should have (or more than made sense)?

_____

_____

If no: How about when you first started having this problem?

_____

4. What effect did this (OBSESSION or COMPULSION) have on your life? Did [OBSESSION or COMPULSION] bother you a lot?

_____

_____

5. How much time do you spend (OBSESSION or COMPULSION)

_____

B. At some point during the course of the disorder, the person has recognized that the obsessions or compulsions are excessive and unreasonable.
F93
[_____] Check here "is with poor insight": i.e., for most of the time during the current episode, the person does not recognize that the obsessions or compulsions are unreasonable.

F92
[?] [1] [2] [3]

C. The obsessions or compulsions cause marked distress, are time-consuming (take more than an hour a day), or significantly interfere with the person's normal routine, occupational functioning, or usual social activities or relationships.

F94
[?] [1] [2] [3]

D. If another Axis I disorder is present, the content of the obsessions or compulsions is not restricted to it (e.g., preoccupation with food in the presence of an eating disorder, hair pulling in the presence of trichotillomania, concern with appearance in the presence of Body Dysmorphic disorder; preoccupation with drugs in the presence of a substance use disorder; preoccupation with having serious illness in the presence of Hypocondriasis; or guilty ruminations in the presence of Major Depressive Disorder.

F95
[?] [1] [2] [3]

continue to next page

If either obsessions, compulsions or both, continue below:

6. Just before you began having (OBSESIONS OR COMPULSIONS) were you taking any drugs or medications?

   _____

   _____

7. Just before the (OBSESSIONS OR COMPULSIONS) started, were you physically ill? (What did the doctor say?

   _____

   _____

8. During the past month, did the (OBSESSIONS OR COMPULSIONS) have any effect on your life or bother you a lot?

   _____

   _____

9. Have you ever been diagnosed with or suspected that you have a mental disorder or any kind? If so, what was the nature of the disorder?

   (Indicate the disorder and whether or not the person was actually diagnosed with it or just suspects that they may have a problem).

   _____

   _____

   _____

E. Not due to the direct physiological effects of a substance (e.g. a drug of abuse, medication) or to a general medical condition.

(Medical conditions include certain central nervous system neoplasms. Substances include intoxication with central nervous system stimulants, e.g. cocaine, amphetamines.)

OBSESSIVE COMPULSIVE DISORDER CRITERIA A, B, C, D, and E are CODED "[3]"

Has met criteria for OCD in the past month.

Number of months prior to interview when last had a symptom of OCD.

Check one: F99, F100
[1] Mild: few current symptoms, minor impairments in social or occupational functioning.
[2] Moderate: current symptoms or impairments are between mild and severe.
[3] Severe: Many current symptoms in excess of those needed for diagnosis, or several severe symptoms, or extreme impairment.
[4] In Partial Remission: Full criteria met at one time, but only a few signs of OCD remain.
[5] In Full Remission: No current symptoms, but may be on medication for the disorder.
[6] Prior History: History of criteria having been met but individual is considered completely recovered.

Scale:
? = Inadequate info
1 = Absent or false
2 = Subthreshold
3 = Threshold or True

F96
[?] [1] [2] [3]

F97
[?] [1] [2] [3]

F98
[?] [1] [3]

F101
No. months _____

F102
Age at onset _____

If ANY obsessions OR compulsions are present, administer YBOCS (next page) →

[YBOCS] Check appropriate score. Choose only one number per item. Scores should reflect the composite effect of all obsessive-compulsive symptoms. Rate the average occurrence of each item during the prior week up to and including now.

Obsession Rating Scale *administer if any obsessions present*

YB1	**Time Spent on Obsessions**	0 hrs/day [0]	0-1 hrs/day [1]	1-3 hrs/day [2]	3-8 hrs/day [3]	8+ hrs/day [4]
YB2	**Interference from Obsessions**	None [0]	Mild [1]	Definite But Manageable [2]	Substantial Impairment [3]	Incapacitating [4]
YB3	**Distress From Obsessions**	None [0]	Little [1]	Moderate but Manageable [2]	Severe [3]	Near constant, disabling [4]
YB4	**Resistance to Obsessions**	Always Resists [0]	Much Resistance [1]	Some Resistance [2]	Often Yields [3]	Completely Yields [4]
YB5	**Control Over Obsessions**	Complete Control [0]	Much Control [1]	Some Control [2]	Little Control [3]	No Control [4]

Compulsion Rating Scale *administer if any compulsions present*

YB6	**Time Spent on Compulsions**	0 hrs/day [0]	0-2 hrs/day [1]	1-3 hrs/day [2]	3-8 hrs/day [3]	8+ hrs/day [4]
YB7	**Interference from Compulsions**	None [0]	Mild [1]	Definite But Manageable [2]	Substantial Impairment [3]	Incapacitating [4]
YB8	**Distress from Compulsions**	None [0]	Little [1]	Moderate but Manageable [2]	Severe [3]	Near Constant, Disabling [4]
YB9	**Resistance to Compulsions**	Always Resists [0]	Much Resistance [1]	Some Resistance [2]	Often Yields [3]	Completely Yields [4]
YB10	**Control over Compulsions**	Complete Control [0]	Much Control [1]	Some Control [2]	Little Control [3]	No Control [4]

Debriefing Script

Thank you for participating in this study. Please review the following forms and sign them. *(Give post experiment packet to subject.)*

The purpose of this study is to figure out why ethnic groups (blacks and whites) differ in their responses to screening tools for certain anxiety disorders, like obsessive-compulsive disorder. Your debriefing sheet talks more about this disorder.

IF SUBJECT RECEIVED ANXIETY-INDUCING INSTRUCTIONS: You should realize that no particular ethnic group has been proven to be more anxious or to have better cleaning/grooming habits than any other, and this is not believed to be a factor in the prevalence of anxiety disorders. *(Elaborate if necessary, explaining experimental manipulation.)*

Because we didn't tell you that this study was about obsessive-compulsive disorder, you have the option to have your data removed from the study *(point out deception form)*, but we hope you let us use your data. Your participation has been very helpful, and will aid us in developing better methods for diagnosing anxiety in minorities.

IF SUBJECT HAS OCD OR OTHER DISORDER: Here are some resources you may be interested in. *(Circle appropriate resources on participant's debriefing sheet.)*

Please do not discuss the details of this study with [your classmates or] others who might be signed up to participate.

[ ] *initial after reading*

Take signed Data Release Form for Deception Studies from subject.

Give payment voucher/gift certificate to community subjects.

Staple together:

1. *(1) Participant booklet*
2. *(2) Experimenter booklet*
3. *(3) Signed Data Release Form for Deception Studies*

Appendix C: Semi-Structured Interview Guide

INTERVIEW GUIDE

The interview guide is designed to be semi-structured so that there is flexibility for the interviewers to change the order in which the questions are asked within specific sections, and for additional questions as needed. The interviews are be conducted in a conversational tone and are meant to thoroughly explore relevant issues that emerge in the context of each individual interview, including issues that we did not previously anticipate in the interview guide.

INTRODUCTION AND CONSENT

Opening Statements

As we told you when we first approached you about participating in this study, we are interviewing black and white adults who reside in Charlottesville and Albemarle County. We are hoping to learn about your experiences, perceptions and interpretations of anxiety-related issues, particularly screening tools (like check-lists) for anxiety disorders and your experience using these. Your participation is important because it will contribute to efforts aimed at improving the mental health of the people in your community. Thank you very much for your time.

In the next one to two hours, I will ask you questions about your experiences, ideas and feelings. There is plenty of room for you to share your thoughts in your own words. During our conversation my role is to listen and to learn more about your life and personal experiences. I may ask you for more details about something you tell me. I am going to start by asking you a few general questions about you and your life. I will then ask you questions that are specifically about your experiences and perceptions about your participation in this study today.

Everything that you tell me will be completely confidential. I might make some notes as we talk to remind myself what I want to ask you later. I will audio or video tape the interview so that I can later review and remember everything that was said. If you wish to not answer any question, please simply say so and we will move on. If you wish to end the interview for any reason please let me know and we will do so immediately. If you want to end the interview it will not effect you receiving the

monetary incentive that we offered. If you need to use the bathroom or rest for a few minutes please let me know and we can take a short break.

Consent Procedures and Confidentiality:

Please read the informed consent form. (*Give interviewee a copy of the informed consent form and identify Monnica Williams as the PI and indicate her telephone number listed on the form*.) I am happy to answer any questions about this consent form or about the study. Please sign and date two copies of the consent form, one copy will be for you to take, the other will be kept in a locked filing cabinet in our office at the University of Virginia.

I will not mention your name when I discuss this interview with other members of the research team. Apart from me, only the lead project assistant will can connect the number assigned to your record with your name. This is in case we would like to contact you for a follow up interview. As soon as the follow-up interview is complete, or if we decide that no follow up is necessary, we will delete your name and contact information from our records.

The tapes and transcripts of your interview will not have your name or any information that can identify you and will be kept separate from your signed consent form. If you mention other people during the interview, please do not use their last names. First names are okay. Please also do not mention the names of places that could identify you, such as your place of work, or place of worship, instead refer to them as "the store where I work," or "the church I attend." If a last name or the name of a place that could identify you slips into the conversation, I will erase it when I review the tape. (*Note: If any names remain on the audio tapes, they will be deleted in transcription, and erase them in the tape at the time of transcription*).

I also want you to know that is we run into each other outside of here, I will never mention in front of others that you participated in an interview for this study. This will protect your privacy and not place you in an awkward position. Of course you can come up to me any time you see me and talk about the interview with me in any way you like.

BACKGROUND INFORMATION

Basic Information

Use a calm and conversational style, as opposed to a question and answer tone, and begin to develop rapport and ease the interviewee into the conversation. Long answers are not needed in this section, rather start with general questions that elicit narrative, such as "tell me a bit about you, where you are from, how old you are how long you have been living in Charlottesville/Albemarle county."

Follow-up questions may include the following:

a. Age: How old are you?

b. Number of Children: Do you have children?

(If so,) How many and what ages?

c. Origin: Were you born in this county?

(If so,) Were your parents born in this county?

(If not,) Where we you born?

How long have you lived here?

And, where were your parents born?

d. Migration Patterns: Have you ever lived in a city, in another area in Virginia, in another area in the south or up north?

(If so,) Why did you return to Virginia?

e. Residence: Where do you live?

How long have you lived there?

Who do you live with?

(If she does not mention living with children, ask,) Where do your children live?

f. Employment: Are you currently working outside the home? Going to school? Staying home to care for children and, or elderly family members?

What kind of work do you do? What are you studying?

How long have you <had this job, not been working, been a student>?

How do you support yourself? (*Explore sources of support including government aid and support from family and extended family)*

g. Marital Status: Are you married? Divorced? Separated? Engaged? Living with a partner?

Is your husband/partner from this county?

(If not,) Where is he/she from?

EXPERIENCES WITH ILLNESS

The interviewer will ask a series of questions about events and experiences in the recent and distant past. This section will include questions that elicit information about experiences with biomedical health practitioners, religious and moral views on mental illness, alternative health seeking practices and individual experiences.

Experience of Help Seeking during Illness:

- Do you remember the first time you went to the doctor's office?
- Do you have any health problems?
- Besides the doctor of nurse, who helps you when you are not feeling well?
- Where is the doctor's office that you visit?
- Does your church offer services that help you feel better?
- Have you ever been healed by laying on of hands?

Mental Health Narratives

The interviewer will ask participants to narrate a recent experience with mental illness (anxiety or 'nerves'), with details about context, support and feelings. The interviewer will ask about the moral and symbolic meanings of the experience, as well as about the daily experience of illness. Questions may include:

- What do you think causes people to worry about things?
- Why do some people get sick (unable to work, etc.) from 'nerves' and not others?
- Do you know anyone who is sick from anxiety or nerves?
- Have you ever had a time when you couldn't stop thinking about things that worried you?
- What would you do if you couldn't stop thinking about things that worried you?
- Who would you talk to about these concerns (doctor, psychiatrist, pastor)?
- Had you ever heard of obsessive-compulsive disorder (before participating in this
- study)?
- What are the best ways to avoid getting too worried about things?
- If other people thought that you had <some anxiety disorder> do you think that it would make them look at you differently?
- Do you think <people in your ethnic group> can get what they need from doctors and mental health professionals?

EXPERIENCE WITH THE EXPERIMENT

The interviewer will ask a series of questions about the experience of participating in the actual study and feelings about individual questions that Blacks and Whites tend to answer differently.

Experience with the Experiment

- Before the survey, what kinds of questions did you think you would be asked?
- Did you think that the survey questions were appropriate to you?
- How did you think this information about you might be used?
- How did the instructions given by the experimenter make you feel?
- How comfortable were you with the experimenter?
- Were you concerned that your responses might reflect poorly on you or your ethnic/racial group?
- Do you think people from your ethnic/racial group might feel uncomfortable participating in a study like this one? Why or why not?
- What sorts of things might make them/you feel more comfortable?

Specific Items

There are several items on the screening tools that blacks and whites answer differently. I would like to go through some of these with you to understand why you answered them the way you did.

- Compared to other people, do you think you are more or less likely to 'check letters carefully many times before mailing them?' Why or why not?
- Compared to other people, do you think you are more or less likely to 'feel dirty after being touched by an animal?' Would you 'immediately have to wash or change clothing?' Why or why not?
- (Compared to other people,) do you think you are more or less likely to 'return home to check doors, windows, drawers, etc., to make sure they are properly shut?' Why or why not?
- (Compared to other people,) do you think you are more or less likely to 'be late sometimes because you keep on doing certain things more often than necessary?' Why or why not?
- (Compared to other people,) do you think you are more or less likely to 'have the impression that you have missed something important when you read and have to back and reread the passage at least two or three times?' Why or why not?

- (Compared to other people,) do you think you are more or less likely to 'be able to make difficult to make decisions, even about unimportant matters?' Why or why not?
- (Compared to other people,) do you think you are more or less likely to be bothered by obscene or dirty words that come into your mind?' Why or why not?
- Compared to other people, do you think you are more or less likely to feel unwanted impulses, such as "at certain moments, I am tempted to tear off my clothes in public?" Why or why not?
- When I say, "Compared to other people," who do you think of?
- Do you think people in <your ethnic group> might answer these questions differently than others?

STOP AUDIO/VIDEO TAPING

Thank the interviewee for her participation. Give her the monetary incentive/payment voucher and any reimbursement for travel.

Appendix D: Mean Scale Scores by Race

The following table reports mean scale scores by racial/ethnic group for Study 2. This table excludes people who met criteria for an OCD diagnosis, who lived in the Unites States for less than five years or who reported an racial/ethnic group other than those appearing in the table.

		ASIAN			BLACK			WHITE			HISPANIC		
Measure	**Variable**	**N**	**Mean**	**Std Dev**	**N**	**Mean**	**Std Dev**	**N**	**Mean**	**Std Dev**	**N**	**Mean**	**Std Dev**
PADUA INVENTORY TOTAL	PTOTAL	67	40.90	29.23	138	40.00	30.89	408	31.86	23.97	17	29.03	21.43
PI CONTAMINATION	PCONT1	67	9.51	7.57	138	10.86	8.01	407	5.89	5.57	17	6.59	5.14
PI CHECKING	PCHK2	67	13.52	11.03	138	13.36	12.68	408	10.60	9.76	17	8.73	7.45
PI MENTAL CONTROL	PMENT	67	17.22	13.88	138	15.94	14.17	408	14.09	11.84	17	11.22	12.56
PI IMPULSE CONTROL	PIMPUL	67	4.16	4.96	138	3.12	4.09	408	3.92	4.64	17	3.53	4.20
MOCI TOTAL	MTOTAL	67	32.69	11.01	136	34.77	11.28	407	28.17	11.54	17	29.64	12.03
MOCI CONTAMINATION	MCONT1	67	10.49	5.05	137	12.69	5.04	407	8.02	4.77	17	9.99	4.94
MOCI CHECKING	MCHK2	67	7.19	3.42	138	7.41	4.06	407	6.45	3.91	17	7.13	3.26
OCI TOTAL	OTOTAL	67	14.42	10.25	138	13.52	9.91	408	11.99	8.77	17	12.41	7.79
OCI WASHING	OWASH	67	2.18	2.42	138	2.56	2.67	406	1.31	1.70	17	1.29	1.86
OCI CHECKING	OCHECK	66	1.59	2.30	135	1.50	2.11	405	1.20	1.90	17	1.41	1.58
OCI HOARDING	OHOARD	67	3.24	3.10	138	2.63	2.81	408	2.85	2.78	17	3.18	3.45
OCI NEUTRALIZING	ONEUT	67	1.18	1.91	137	0.75	1.45	406	0.80	1.52	17	0.76	1.30
OCI OBSESSING	OOBSES	67	2.04	2.60	138	1.87	2.42	407	2.20	2.48	17	1.82	2.86
OCI ORDERING	OORDER	67	4.19	3.07	135	4.10	2.70	407	3.63	2.82	17	3.94	1.60
BECK ANXIETY INVENTORY	BAITOTAL	67	10.46	8.27	138	11.20	8.96	407	10.68	8.33	17	9.25	6.44
STATE-TRAIT INVENTORY	STOTAL	67	14.33	10.41	138	14.62	11.29	408	13.22	9.24	16	15.25	9.95
CESD DEPRESSION	CETOTAL	67	13.45	8.05	137	15.93	10.90	407	13.15	8.76	17	11.19	8.47
PANAS - IN GENERAL	PGTOTAL	67	21.69	8.42	138	23.51	10.21	408	21.19	8.95	17	23.45	8.37
PANAS - NOW	PNTOTAL	67	21.21	7.37	138	22.92	10.78	408	20.10	8.13	17	20.72	7.43
OBQ THREAT	OBQTHRET	58	13.40	10.59	128	14.12	11.54	374	11.19	10.32	16	13.88	10.31
MEIM TOTAL	EETHNIC	67	26.44	7.67	137	29.00	6.18	407	21.09	6.37	17	26.44	8.77
MEIM BELONGING	EBELNG	67	11.41	2.98	137	12.84	2.45	407	9.81	2.93	17	12.12	2.96
MEIM ID ACH	EIDACH	67	14.09	4.02	138	15.11	3.72	408	10.45	3.82	17	13.82	4.89
MEIM ETHNIC BEHAVIORS	EBEHAV	67	3.52	1.87	137	3.78	1.58	407	3.27	1.36	17	3.29	1.76
MEIM OTHER ORIENTATION	EOTHER	67	15.54	2.30	137	15.38	2.46	407	14.83	2.60	17	15.35	4.42