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OC symptoms in African American young adults: The associations between racial discrimination, racial identity, and obsessive-compulsive symptoms

Henry A. Willis*, Enrique W. Neblett Jr.

University of North Carolina, Chapel Hill, United States

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ABSTRACT

Although studies illustrate the role of racial discrimination as a risk factor for increased psychiatric symptoms for African American young adults, none has explored the link between racial discrimination and obsessive-compulsive (OC) symptoms within such a sample. Racial identity has been shown to moderate the association between racial discrimination and psychiatric symptoms; yet, no studies have investigated its protective role in the context of OC symptoms. This study examined the association between racial discrimination and OC symptom distress over time, as well as how racial identity moderates this relationship. Participants were 171 African American young adults who completed measures of racial discrimination, racial identity, and OC symptom distress. Latent profile analysis revealed three patterns of racial identity: *Multiculturalist*, *Race-Focused*, and *Humanist*. Racial discrimination frequency at Time 1 was positively associated with OC symptom distress one year later for the Race-Focused racial identity group, but unrelated to OC symptom distress for the Multiculturalist and Humanist groups. Results support the notion that racial discrimination is a risk factor, and specific patterns of racial identity are vulnerability and protective factors, in the development and maintenance of OC symptoms. These findings have the potential to transform assessment and treatment of OC symptoms within African American samples.

1. Introduction

Obsessive-Compulsive Disorder (OCD) is clinically characterized as the manifestation of obsessions and/or compulsions (American Psychiatric Association, 2013). Past clinical research of OCD has largely focused on the biological risk factors associated with the etiology and treatment of this disorder and its symptoms (Milad & Rauch, 2012). While this approach has been vital to understanding the characteristics of these symptoms within European American OCD patients, the field has not sufficiently investigated cross-cultural differences in OC symptom presentation, especially factors associated with the etiology of OC symptoms within African Americans (Williams & Jahn, 2016). For instance, given the history of segregation in the U.S., researchers have suggested that African Americans may over-emphasize attitudes regarding cleanliness on measures of OCD to compensate for negative cultural stereotypes (Williams & Turkheimer, 2007). Moreover, epidemiological surveys demonstrate that African Americans suffer from OCD at nearly identical rates as other racial/ethnic groups, and that OCD among African Americans is very persistent and associated with high overall mental illness severity and functional impairment (Himle et al., 2008). Yet, because African Americans are grossly unrepresented in clinical trials, behavioral treatment centers, and studies among many of the institutions at the forefront of OCD research, it is unclear whether recent advancements in our understanding of this disorder and its symptoms can be effectively applied to this population (Williams, Proetto, Casiano, & Franklin, 2012).

One factor that may uniquely affect OC symptoms within African American patients is racial discrimination (Williams & Jahn, 2016). These experiences are a source of stress for this population, and a large body of research supports a link between racial discrimination and negative mental health (Paradies, 2006; Priest et al.et al., 2013). Researchers have noted that experiences of racial discrimination are traumatic for African Americans, and given that traumatic life experiences have been linked to the onset of OC symptoms (Cromer, Schmidt, & Murphy, 2007), race-related traumatic experiences during childhood/adolescence may spur the development of obsessions and/or compulsions. Burgeoning research supports the notion that there is a link between experiences of racial discrimination and OCD symptoms within African Americans (Williams et al., 2017).

Previous research suggests that ethnic/racial identity may protect against the negative mental health impact of racial discrimination for African Americans (e.g., Bynum, Best, Barnes, & Burton, 2008; Sellers,

* Correspondence to: Department of Psychology & Neuroscience, Davie Hall Room 243E, UNC Chapel Hill, Chapel Hill, NC 27599, United States.
E-mail address: henry.willis@unc.edu (H.A. Willis).

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Caldwell, Schmeelk-Cone, & Zimmerman, 2003; Sellers & Shelton, 2003; Smith & Silva, 2011). For instance, African Americans who reported having a stronger, more stable, ethnic identity also reported being more psychologically healthy in the form of lower anxiety and depressive symptoms (Sawyer, Williams, Chasson, Davis, & Chapman, 2015). A recent model of OC symptoms proposes that racial discrimination is a risk factor, while racial identity is a protective factor against the development and maintenance of this disorder and its symptoms within African American young adults (Williams & Jahn, 2016), but these relations are untested. Furthermore, most prior studies are cross-sectional, and employ a unidimensional/variable-centered approach, which does not take into account the complexity of racial identity and how various dimensions of identity combine to buffer against race-related stress over time. This study longitudinally examined: (1) the effects of racial discrimination on OC symptom distress; and (2) the moderating role of patterns of racial identity on the relationship between racial discrimination and subsequent OC symptoms.

2. Theoretical framework: A sociocultural model of obsessive-compulsive disorder

Williams and Jahn (2016) developed a sociocultural model of OCD that may serve as a useful foundation in understanding how sociocultural factors, such as racial discrimination and racial identity, may affect OC symptom severity and distress within African American youth.

According to the model, Barlow (2002) model of OCD etiology, while useful in its conceptualization of intrusive thoughts, impulses, or images (obsessions) and their effect on neutralizing compulsions, does not shed light on how OC symptom development and maintenance are affected by cultural factors. Evidence suggests that culture affects the symptoms of OCD. For example, Lewis-Fernández et al. (2011) found that the sociocultural characteristics of the settings in which OC symptoms arise seem to shape the content of the disorder (i.e., in Brazil, aggressive obsessions seem predominant, reflecting the rise of urban violence in the area). Unfortunately, little is known about how cultural/societal factors that are unique to African Americans in the U.S. (i.e., the history of slavery, police brutality, and the experience of racial discrimination) affect the development of OC symptoms within this population. Although genetics and biological/psychological vulnerabilities (i.e., Barlow, 2002) may explain the genesis of OC symptoms, it cannot be denied that culture plays a role in shaping and exacerbating the development, expression, and severity of obsessions and compulsions.

2.1. Sociocultural risk and protective factors

Williams and Jahn (2016) argue that racial discrimination, which several studies have shown to be linked to negative psychological outcomes (e.g., Priest et al., 2013; Williams & Mohammed, 2009), may be a sociocultural risk factor that uniquely affects the development and maintenance of OC symptoms within African American youth. At the same time, though African American youth may be susceptible to specific risk factors, there are several cultural protective mechanisms that may converge to promote resiliency against the development and maintenance of this disorder. Given the link between racial identity and positive mental health outcomes for African American youth (Sawyer et al., 2015; Smith & Silva, 2011), and evidence that racial identity moderates the relationship between racial discrimination and psychiatric symptoms (i.e., Banks & Kohn-Wood, 2007), Williams and Jahn (2016) proposed that racial identity may reduce or protect against the deleterious effects of various sociocultural risk factors (e.g., racial discrimination) that exacerbate OC symptoms and severity. Taken together, in an effort to establish the validity of Williams and Jahn (2016) model, as well as progress our understanding of how sociocultural factors affect OC symptom maintenance and severity within African Americans, there is a need to uncover the impact of racial discrimination on OC symptoms and explore the moderating role of racial identity.

2.2. Racial discrimination and mental health outcomes

Racial discrimination has been conceptualized to operate on three different levels: institutionalized (defined as inequitable access to products, services, and opportunities based on race), personally-mediated (defined as the experience of prejudice or discrimination), and internalized racism (defined as the acceptance of negative stereotypes or beliefs by the stigmatized group about their own race; e.g., Berman & Paradies, 2010; Jones, 2000). The perception of racial discrimination by African Americans as a result of interactions with their environment is an example of personally-mediated racism, and it has been shown that this type of racism results in psychological and physiological stress responses, also referred to as race-related stress (Clark, Anderson, Clark, & Williams, 1999). In exploring the effects of perceptions of racial discrimination, researchers have examined the frequency of perceptions of discrimination, as well as the event-specific outcomes of these experiences (specifically, the extent to which the individual was distressed or bothered by the event), as both have unique effects on psychological outcomes (Sellers & Shelton, 2003).

Large-scale studies suggest that African Americans experience more racial discrimination than any other minority ethnic/racial group in the U.S. (e.g., Chou, Asnaani, & Hofmann, 2012). Furthermore, there is already a large body of research that supports a link between perceived experiences of racial discrimination and negative mental health outcomes (e.g., Paradies, 2006). A recent systematic review by Priest and colleagues (2013) investigating the relationship between perceived racism and health outcomes in youth between the ages of 12 and 18 found that over 50% of the studies exploring the association between racism and mental health in racial and ethnic minority youth reported statistically significant associations between perceived racism and negative mental health outcomes, behavioral problems, and reductions in positive mental health outcomes (Priest et al., 2013). With respect to anxiety disorders, in a large, national survey of 3570 African American adults, racial discrimination was shown to be a significant predictor of Generalized Anxiety Disorder (GAD; Soto, Dawson-Andoh, & BeLue, 2011). Although the role of racial discrimination in the development of OC symptoms has not been sufficiently studied, it has been found that experiences of racial discrimination contributed significantly to reported OC symptoms for African American adults (Klonoff, Landrine, & & Ullman, 1999; Williams et al., 2017). Finally, experiences of racial discrimination have been likened to traumatic experiences for African Americans (Butts, 2002). Given that traumatic life experiences have been linked to the onset of OC symptoms (Cromer et al., 2007), race-related traumatic experiences of discrimination during childhood/adolescence may spur the development of obsessions and/or compulsions by depleting cognitive resources that are needed to manage obsessions and/or compulsions (Williams et al., 2017).

2.3. Racial identity as a protective factor

Fortunately, not all African Americans who experience racial discrimination are subject to its negative effects. Researchers have noted that racial identity, which can be defined as the significance and qualitative meaning that race has in the self-concepts of African Americans, may serve as a protective factor against race-related stress. For instance, several studies have illustrated that racial identity is positively associated with positive well-being within African American samples (Smith & Silva, 2011). Certain dimensions and profiles of racial identity, such as feeling positively about one's race, have also been shown to buffer against the psychological effects of race-related stress and are associated with better physical and mental health outcomes (Banks && Kohn-Wood, 2007; Neblett, Banks, Cooper, && Smalls-Glover, 2013; Neblett & Carter, 2012; Seaton, 2009; Sellers, Copeland-Linder, Martin,

&& L'Heureux Lewis, 2006). Racial identity may act as a buffer against race-related stress by enhancing youth's self-concept and cognitive-appraisal processes, as well as facilitating their development of adaptive coping styles (Neblett, Rivas-Drake, & Umaña-Taylor, 2012).

2.4. Conceptualization of racial identity

The Multidimensional Model of Racial Identity (MMRI) is a particularly useful conceptualization of racial identity that could highlight how racial identity protects against the deleterious effects of racial discrimination to inhibit the development of OC symptoms. The MMRI consists of four dimensions that refer to the significance and qualitative meaning race has in African Americans' self-concepts: *salience*, *centrality*, *regard*, and *ideology*. *Salience* (not measured in this study) measures the extent to which individuals' races are relevant to their self-concepts during a specific moment, whereas *centrality* corresponds to the extent to which individuals define themselves according to their race over time and across situations (Sellers, Smith, Shelton, Rowley, & Chavous, 1998). Both salience and centrality measure the significance individuals attach to being African American.

In contrast, *regard,* which measures the extent to which individuals feel positively about their race, and *ideology,* which measures individuals' beliefs, attitudes, or opinions about how they feel people from their race should act, both refer to the perceptions one has about the meaning of being Black or African American (Sellers et al., 1998). Racial regard consists of two sub-dimensions: *public regard* and *private regard*. Public regard refers to the extent individuals feel that others view African Americans positively or negatively. Private regard measures the extent to which individuals feel positively or negatively about being African American and about other African Americans. Finally, Sellers et al. (1998) describe ideology as consisting of four sub-dimensions: (1) an *assimilationist* philosophy (which stresses the similarities between African Americans and American society); (2) a *humanist* philosophy (which refers to the view that all humans, regardless of racial/ethnic background, are similar); (3) an *oppressed minority* philosophy (which emphasizes the commonalities between the oppression that African Americans face and the oppression experienced by other groups); and (4) a *nationalist* philosophy (characterized by views that the African American experience is unique from that of other groups).

Previous studies exploring the link between racial discrimination and psychological outcomes have shown that the dimensions of the MMRI are useful when investigating the protective role of racial identity (e.g., Banks & Kohn-Wood, 2007; Neblett & Carter, 2012; Seaton, 2009; Sellers, Copeland-Linder, Martin, & L'Heureux Lewis, 2006). Sellers et al. (2006) found that African American adolescents with low public regard were at the greatest risk of experiencing racial discrimination, but protected against the impact of racial discrimination on psychological functioning. Furthermore, private regard has been shown to buffer the effects of racial discrimination on anxiety symptoms (Bynum et al., 2008). Similarly, it has been shown that African American youth with high levels of racial centrality and low public regard report lower depressive symptoms and appear to be protected against the effects of perceived racism (Seaton, 2009). Conversely, Banks and Kohn-Wood (2007) found that the relationship between racial discrimination and depression was stronger for African American adolescents who reported lower levels of racial centrality and private regard, and higher levels of assimilationist and humanist ideologies. These results suggest that racial identity can either protect against or exacerbate the impact of race-related stress on psychiatric outcomes.

2.5. Limitations of existing research

Although preexisting limitations in OCD research within African American samples led to the development of the sociocultural model of OCD for African American youth by Williams and Jahn (2016), the incorporation of sociocultural factors has not acquired an evidence base to support the relationships put forth by the authors. Given that the average age of onset for OCD is around the age of 19 (Himle et al., 2008; Ruscio, Stein, Chiu, && Kessler, 2010), and that epidemiological studies report that by late adolescence, OCD has a lifetime prevalence of 2%–3% (Zohar, 1999), it is imperative that we begin to explore OC symptoms, as well as the impact of these sociocultural risk and protective factors, within African American late adolescent populations.

Furthermore, there have only been a handful of studies that have explored the associations between racial discrimination, racial identity, and OC symptoms (i.e., Klonoff et al., 1999; Worrell, Andretta, & Woodland, 2014), but these studies have either been cross-sectional or conducted with niche samples (i.e. at-risk youth). Longitudinal analyses of OC symptoms within African American youth must be performed in order to determine if racial discrimination and racial identity are associated with the development and maintenance of these symptoms.

Finally, most studies examining racial identity as a protective factor have taken a variable-centered approach, examining only the relationship between certain dimensions of the MMRI (Sellers et al., 1998) and psychological/health outcomes (i.e. Neblett & Carter, 2012; Sellers et al., 2006). This approach to understanding the impact of racial identity is inconsistent with the multidimensional nature of the MMRI, and does not illustrate the complexity and dimensionality of individuals' racial identity beliefs, attitudes, and behaviors. As a result, there is an urgent need for studies to take a profile-analytic approach that explores how all dimensions of racial identity interact to affect mental health outcomes when attempting to explore racial identity as a moderator.

3. Current study

Given the above limitations, this study sought to (1) longitudinally examine the effects of racial discrimination on OC symptom distress; and (2) explore the moderating role of patterns of racial identity on the relationship between racial discrimination and subsequent OC symptoms within a nonclinical sample of African American young adults. Our use of a nonclinical sample as a suitable analogue for clinical OC symptoms is predicated on the assumptions that (a) obsessional and compulsive phenomena are prevalent in both clinical and non-clinical populations, (b) obsessions and compulsions are thematically similar across both populations, and (c) obsessions and compulsions are associated with the same developmental and maintenance factors in clinical and nonclinical individuals. Research to date demonstrates that these assumptions are all met (e.g., Abramowitz et al., 2014). Additionally, using a non-clinical sample reduces the chance that treatment effects interfere with our exploration of the associations under investigation.

Consistent with Williams and Jahn's model of OCD development and maintenance, we hypothesized that specific patterns of racial identity at Time 1 would be associated with decreased reports of OC symptom distress at Time 2, and that these patterns of racial identity would moderate the relationship between racial discrimination and OC symptoms. More specifically, consistent with Seaton (2009), a racial identity pattern or profile characterized by high racial centrality, high private regard, and low public regard was expected to buffer against the effects of racial discrimination on OC symptoms. It could be that these racial identity dimensions equip African American youth with more positive attitudes about their race, and a higher self-esteem, which in turn aids them in managing the anxiety that accompanies the maintenance of obsessions and compulsions. In contrast, consistent with both Banks and Kohn-Wood (2007) and Seaton (2009), it is also expected that a racial identity profile characterized by low private regard, low racial centrality, and high assimilationist and humanist ideologies may exacerbate the relationship between racial discrimination and OC symptoms. It could be that African American youth with this type of profile do not feel strongly about African Americans, and have a stronger desire to connect to mainstream American cultural values. Given the cultural characterization of the superiority of European

American culture (Williams & Williams-Morris, 2000), this set of attitudes may lead to more anxiety provoking intrusive thoughts and/or cognitions or behaviors to reduce the anxiety associated with these thoughts.

4. Method

4.1. Participants

Participants were African American first-year students who participated in a longitudinal study of health and life experiences at a mid-size, public, southeastern, predominantly-White university in the United States. To be eligible to participate, students had to be a college student at the university where the study was conducted, be at least 18, and self-identify as African American. Data collection was conducted in three waves, with approximately eight months between each wave of data collection, but this study's sample utilized the initial (Time 1) and third wave (Time 2) of data because at Time 2, participants' mean age was 19.5, which coincides with the emergence of OC symptoms for young adults found in previous studies (Himle et al., 2008; Ruscio et al., 2010). The first wave was comprised of 171 students (69% female, mean age = 18.3). The second wave of data was comprised of 130 students (74% female; mean age = 19.5). Students who participated in both waves did not differ in gender composition, age, parent educational attainment, racial discrimination, or reports of OC symptoms from those who dropped out after the first wave, suggesting no systematic relation between study variables and participant attrition.

4.2. Procedures

Following university Institutional Review Board approval, participants were recruited through a list of incoming African American students provided by the university registrar's office. Students were contacted via email and asked to participate in a longitudinal study examining the impact of stressful life experiences on mental and physical health in African American college students. Eligible participants completed a battery of online and paper and pencil questionnaires including the measures in the present study in survey administrations lasting approximately one hour. These measures assessed demographics, health history and current health, mood and feelings, stress and coping, and life experiences. Participants completed the same battery of questionnaires during subsequent waves of data collection and were not tracked between data collection points. African American research assistants administered the online questionnaires at each time point. Participants received payment of $15 for participating in each wave of data collection.

5. Measures

5.1. Demographic information

Study participants reported demographic data, which were used as covariates in the analyses. This information consisted of gender, age, race/ethnicity, and mothers' highest level of educational attainment (1 = *Elementary School* to 7 = *Graduate or professional degree*). Past research suggests that parental educational attainment may be a more accurate measure of SES (Almeida, Neupert, Banks, & Serido, 2005; Grzywacz, Almeida, Neupert, & Ettner, 2004). As a result, parental educational attainment was utilized as an indicator for SES.

5.2. Racial discrimination

The Daily Life Experiences Scale (DLE; Harrell, 1994) is a subscale that is a part of Harrell (1994) Racism and Life Experiences scale. As a whole, this self-report scale is used to assess past experiences with racial discrimination. However, the Time 1 measure was used as the primary indicator of racial discrimination to model the effects of prior discrimination on subsequent reports of OC symptom distress. The DLE subscale is a self-report measure of the frequency and bother associated with 18 independent microaggressions participants have experienced due to their race. For racial discrimination frequency, responses on the DLE are rated from 0 = *never* to 5 = *once a week or more*, with higher scores corresponding to more frequent experiences of racial discrimination (Time 1: $\alpha = 0.92$). For racial discrimination bother, participants were asked to indicate how much they were bothered by reported experiences of discrimination from 0 = *has never happened* to 5 = *bothers me extremely* (Time 1: $\alpha = 0.97$), with higher scores corresponding to higher levels of distress by racial discrimination experiences. Previous studies have illustrated the DLE to have reliable and valid psychometric properties within similar samples of African American young adults (e.g., Harrell, 1994; Neblett & Carter, 2012; Neblett, Bernard, & Banks, 2016; Seaton, Upton, Sellers, Neblett, & Hammond, 2011). These earlier studies have shown that the DLE has adequate internal consistency (producing Cronbach alpha's ranging from 0.90 to 0.94) and criterion validity.

5.3. Racial identity

The current study utilized a shortened version of the Multidimensional Inventory of Black Identity (MIBI-S; Martin, Wout, Nguyen, Sellers, & Gonzalez, 2008) to assess racial identity. In regards to racial identity, participants' scores at Time 1 on the MIBI-S measure were used as the primary index of racial identity in the study as we wished to evaluate how initial levels of racial identity would attenuate or exacerbate the subsequent consequences of prior racial discrimination experiences on OC symptom distress. Responses on the MIBI-S are rated from 1 = *strongly disagree* to 7 = *strongly agree*, with responses assessing the three stable dimensions of racial identity: centrality, regard, and ideology. The *Centrality* scale, which consists of four items, measures the extent to which being African American is central to participants' definitions of themselves (i.e., "In general, being Black is important to my self-image"; Time 1: $\alpha = 0.70$). Higher scores on this scale relate to the belief that race is an important aspect in defining one's self. Next, as noted above, the *Regard* scale is composed of two subscales assessing both Public and Private Regard. The *Public Regard* subscale consists of four items that measures the extent to which participants feel that other ethnic/racial groups have positive feelings toward African Americans (i.e., "Overall, Blacks are considered good by others"; Time 1: $\alpha = 0.85$), whereas the *Private Regard* subscale measures the extent to which participants have positive feelings toward African Americans in general (i.e., "I feel good about Black people; Time 1: $\alpha = 0.85$) and consists of three items. Higher scores on the Private Regard subscale relate to the belief that the respondent has more positive feelings toward other African Americans and being an African American, whereas lower scores on the Public Regard subscale demonstrates a view that other ethnic/racial groups have a more negative view of African Americans.

The Ideology scale is comprised of four subscales: assimilationist, humanist, oppressed minority, and nationalist. The *Assimilationist* subscale, composed of four items, assesses the extent to which participants emphasize the similarities between African Americans and mainstream America (i.e. "Blacks should strive to be full members of the American political system"; Time 1: $\alpha = 0.72$). The *Humanist* subscale, composed of four items, measures the extent to which respondents emphasize the similarities among individuals of all races (i.e. "Blacks should judge Whites as individuals and not as members of the White race"; Time 1: $\alpha = 0.62$). The *Oppressed Minority* subscale, also consisting of four items, measures the extent to which respondents emphasize the similarities between African Americans and other ethnic/racial minority groups (i.e. "The racism Blacks have experienced is similar to that of other minority groups"; Time 1: $\alpha = 0.73$). Finally, the *Nationalist* subscale, which consists of four items, measures the extent to which

participants emphasize the uniqueness of being African American (i.e. "Whenever possible, Blacks should buy from other Black businesses"; Time 1: $\alpha = 0.58$). Previous studies have illustrated the construct and predictive validity for the MIBI in large African American college samples (Banks & Kohn-Wood, 2007; Seaton, 2009; Sellers, Rowley, Chavous, Shelton, & Smith, 1997), with reliability analyses in previous studies producing Cronbach's alphas that range from 0.61 to 0.81.

5.4. Obsessive-compulsive symptoms

The Symptom Checklist 90-Revised (Derogatis & Unger, 2010; SCL-90-R) was used to assess the OC symptoms of participants. The SCL-90-R is a commonly utilized 90-item self-report measure designed to screen for a range of psychopathological symptoms of distress (Schmitz, Hartkamp, & Franke, 2000). Participants were asked to indicate how much each item from the list of problems had distressed or bothered them during the past 7 days (0 = *not at all* to 4 = *extremely),* with higher scores corresponding to increased levels of psychiatric conditions. The SCL-90-R consists of 9 subscales (i.e., Somatization, Obsessive–Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism); however, the current study focused on the *obsessive-compulsive disorder* subscale (i.e. "Having thoughts about sex that bother you a lot"*;* Time 1: $\alpha = 0.83$; Time 2: $\alpha = 0.84$). Previous research suggests that the SCL-90 is a valid measure to assess psychological distress and anxiety symptoms within African American samples (e.g., Ayalon & Young, 2009; Chapman, Petrie, & Vines, 2012).

6. Results

6.1. Preliminary analyses: Missing data, racial discrimination experiences, racial identity variables, and OC symptoms

The percentage of missing values ranged from nearly 0 for some demographic variables to 1.8% for maternal educational attainment to as high as 24% for Time 2 OCD symptom distress (due to attrition). Only 76% of the sample would have been available for analysis under the traditional listwise deletion method. Data are primarily missing due to item nonresponse and participant attrition. We addressed the problem of missing data using the "state of the art" multiple imputation (MI) technique including all analysis variables under the assumption that missing values are missing at random (Schafer & Graham, 2002). SPSS 24's MI analysis generated 5 imputed datasets. Analyses run on each dataset were pooled according to Rubin (1987) rules. Imputed values compared reasonably to observed values, and results using listwise deletion are similar to MI, so imputed results for hypothesis testing are presented.

Preliminary analyses consisted of examining means and standard deviations among experiences with racial discrimination at Time 1, racial identity variables (Time 1), and OC symptom distress at Time 2 (Table 1). On average, African American college students reported experiencing each of 18 racial discrimination experiences on the subscale at least "once" in the past year at Time 1 ($M = 1.36$; $SD = 0.93$). On average, participants reported being bothered "a little" by these experiences in the past year ($M = 1.9$, $SD = 1.21$).

With respect to racial identity, participants reported, on average, high levels of assimilationist ideology, and moderate levels of private regard, humanist ideology, oppressed minority ideology, and centrality at Time 1. Participants scored below the midpoint, on average, for nationalist ideology and public regard at Time 1. This suggests that overall, participants did not emphasize the uniqueness of being African American nor did they feel that others viewed African Americans positively. Finally, in regards to OC symptoms, participants on average reported being bothered "a little bit" by these symptoms at both Time 1 ($M = 1.05$, $SD = 0.74$) and Time 2 ($M = 1.16$, $SD = 0.80$).

Next, we examined the zero-order correlations among racial identity and discrimination (Time 1) and OC symptom distress (Time 2; see also Table 1). Both the frequency of ($r = 0.41$, $p < .001$) and distress caused by ($r = 0.3$, $p = .001$) racial discrimination were positively associated with OC symptom distress. None of the racial identity dimensions were significantly related to OC symptom distress at the bivariate level.

6.2. Racial identity profile analysis

Latent profile analysis (LPA) implemented by the Latent Gold program (Vermunt & Magidson, 2005) was used to determine racial identity profiles from the sample. LPA is a model-based cluster analysis that provides statistical criteria for selecting a plausible cluster solution among alternatives (Magidson & Vermunt, 2004). First, model fits and comparisons were assessed using the likelihood ratio chi-squared statistic (L^2). Next, the percent reduction in L^2 is used in conjunction with the Bayesian information criterion (BIC), an index of model fit and parsimony. In general, a model with the largest association explained (i.e., the greatest reduction in L^2) and the lowest BIC value is preferred. Finally, Latent Gold provides a diagnostic statistic, the bivariate residual (BVR), to assess the bivariate relationships among indicators (Magidson & Vermunt, 2004). By allowing local dependence among indicators, more parsimonious models can be estimated.

Using the data that from the MIBI-S subscales measured at Time 1, latent class models (ranging from 1 to 6 clusters) were estimated. Summary statistics of these six models can be found in Table 2. Of the six potential models that emerged, the three-cluster model appeared to be the most appropriate and parsimonious solution. Although the four-cluster, five-cluster, and six-cluster models showed a slightly further reduction in L^2 than the three-cluster model, these models also had larger BICs suggesting that they are not as parsimonious as the three-cluster model. Next, the BVRs for each variable pair of the three-cluster model were examined for local dependence. The centrality/private regard racial identity pair had a substantially large BVR (6.46). As a result, a three-cluster model with the direct effect of between centrality and private regard was then estimated and provided a more parsimonious model with a better fit. We adopted this model as our final cluster solution.

Next, the raw and standardized means of each racial identity variable were used to describe and label the clusters (Fig. 1). The first cluster was labeled *Multiculturalist* ($n = 58$, 34% of sample). This cluster was characterized by scores slightly lower than the sample mean on public regard and humanist ideology, and high scores relative to the sample mean (approximately 0.5 SD above the mean) on assimilationist ideology, centrality, and private regard. With respect to raw means, this cluster had relatively high scores on the centrality, private regard, assimilationist, and oppressed minority subscales. The second cluster was labeled *Race-Focused* ($n = 58$, 34% of sample) and was characterized by scores above the sample mean on the centrality and nationalist subscales. In terms of raw means, the Race-Focused cluster had relatively high scores, compared to the other two groups, on the nationalist subscale, and the lowest scores on the public regard, assimilationist, humanist, and oppressed minority subscales. The third and smallest cluster was labeled *Humanist* ($n = 55$, 32% of sample), and was characterized by high scores relative to the sample mean on the humanist subscale, scores near the mean on the public regard and oppressed minority subscales, and scores below the mean on the assimilationist, nationalist (0.5 SD below the mean), and centrality (approximately 1 SD below the mean) subscales. With respect to raw means, this cluster had a relatively high score on the humanist subscale, and the lowest scores on the centrality, private regard, and nationalist subscales.

6.3. Cluster group differences in demographic and racial discrimination variables

Analyses were conducted in order to assess whether cluster groups

Table 1
Intercorrelations, means, standard deviations for key study variables (N = 171).

	1	2	3	4	5	6	7	8	9	10	11
1. RD Frequency Time 1	–										
2. RD Bother Time 1	0.784**	–									
3. OC Symptoms Time 1	0.385**	0.326**	–								
4. OC Symptoms Time 2	0.411**	0.302**	0.478**	–							
5. Centrality	0.217**	0.342**	0.164*	0.091	–						
6. Private regard	− 0.065	0.105	− 0.081	− 0.149	0.573**	–					
7. Public regard	− 0.317**	− 0.283**	− 0.146	0.151	− 0.027	0.317**	–				
8. Assimilationist	− .037	0.072	0.07	0.036	0.208**	0.255**	0.116	–			
9. Humanist	− .15	− 0.219**	− 0.036	0.041	− 0.270**	− 0.125	0.201**	0.178*	–		
10. Minority	0.108	0.071	0.009	0.121	0.002	0.069	0.156*	0.190*	0.274**		
11. Nationalist	0.258**	0.334**	0.111	0.068	0.391**	0.216**	− .026	− 0.021	− 0.356**	–	
Mean	1.36	1.90	1.05	1.16	4.7	5.77	3.18	6.17	5.56	5.06	3.48
S.D.	0.93	1.21	0.74	0.80	1.29	1.17	1.14	0.83	0.99	1.22	0.97

Note. RD = Racial Discrimination. OC = Obsessive-Compulsive.
* $p < .05$.
** $p < .01$.

differed by age, gender, or primary caregiver's educational attainment. Results suggested no significant cluster differences in gender (χ^2 [2, N = 171] = 1.46], p = .48), age (F [2, 168] = 0.33, p = .72), or mother's educational attainment (F [2, 165] = 0.47, p = .63).

Next, two separate analyses of covariance (ANCOVA) were utilized in order to assess cluster differences in college student experiences of and distress caused by racial discrimination experiences at Time 1. Gender, age, and mother educational attainment were included in each model as covariates. There was a significant main effect of cluster membership on the frequency of racial discrimination experiences (F [2, 160] = 4.931, p = .008) as well as the distress caused by racial discrimination (F [2, 159] = 9.50, $p < .001$) at Time 1. Post-hoc analyses revealed that the Humanist cluster reported less racial discrimination (M = 1.06, SE = 0.13) as compared to the Multiculturalist (M = 1.49, SE = 0.13) and Race-Focused (M = 1.64, SE = 0.13) clusters. The Humanist cluster was also bothered significantly less by racial discrimination experiences (M = 1.35, SE = 0.16), as compared to the Multiculturalist (M = 2.34, SE = 0.17) and Race-Focused (M = 2.02, SE = 0.16) clusters at Time 1.

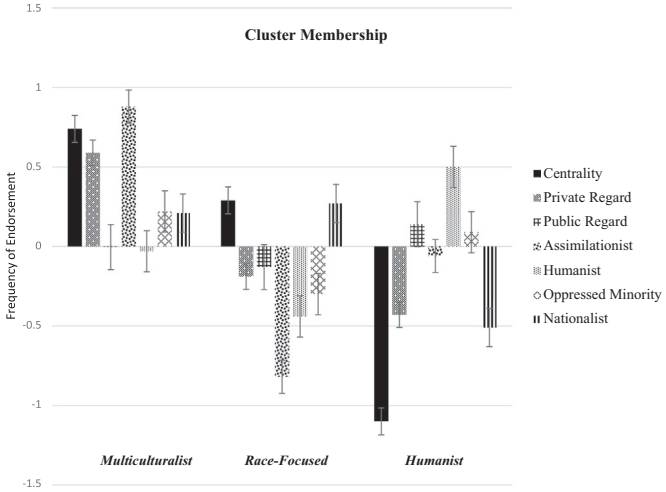

Fig. 1. Summary of racial identity groups using standardized means.

6.4. Relations between racial discrimination experiences, racial identity, and OC symptoms

To investigate the role of racial discrimination frequency and bother as sociocultural risk factors, and patterns of racial identity as a sociocultural protective factor in the context of OC symptom development and maintenance within African American late adolescents, general linear model (GLM) analyses of variance (ANOVA) were estimated with OC symptom distress at Time 2 as the dependent variable. Due to the high correlation between racial discrimination frequency and bother (r = 0.78), two separate ANOVAs were conducted in order to examine the moderating effect of racial identity in the association between racial discrimination frequency and bother and OC symptoms. Age, gender, mother's highest level of education completed, and baseline levels of psychological distress (as measured by the Global Severity Index score on the SCL-90-R; Derogatis, 2000) were included as covariates. The Time 1 measure of OC symptom distress was also entered as a covariate in each model. Furthermore, racial discrimination frequency and bother at Time 1 (in separate models) and cluster group membership were included in the model as main effects. Finally, separate interaction terms were created between racial discrimination frequency at Time 1 and the cluster group membership variables, and between racial discrimination bother at Time 1 and the cluster group membership variables. All key study variables were mean-centered and the interaction

Table 2
Model fit statistics from latent class analyses of racial identity subscales (N = 171).

Model	*BIC (LL)*	*L^2*	*df*	*Bootstrap p-Value*	*% Reduction in L^2*	*Maximum BVR*
With direct effects						
One-class	3393.91	1541.35	150	0.00	0.0	63.77
Two-class	3333.12	1439.43	142	0.10	6.6	16.37
Three-class	3333.24	1398.41	134	0.10	9.3	6.46
Four-class	3341.68	1365.72	126	0.06	11.4	6.78
Five-class	3357.06	1339.96	118	0.04	13.1	4.93
Six-class	3379.07	1320.84	110	0.04	14.3	4.84
With direct effects						
Three-class with direct effect between Centrality and Private Regard	3307.65	1336.83	127	0.07	13.3	1.05

Note. BIC(LL) = Log-likelihood based Bayesian information criterion, L^2 = Likelihood ratio chi-square, BVR = Bivariate residuals.

Table 3
Raw and Standardized Means of Racial Identity Subscales at Time 1 by Racial Identity Cluster (N = 171).

Racial identity variable	*Multiculturalist*	*Race-focused*	*Humanist*
Raw means			
Racial centrality	5.65 (0.82)	5.07 (0.84)	3.3 (0.82)
Private regard	6.47 (0.66)	5.56 (1.13)	5.27 (1.28)
Public regard	3.17 (1.24)	3.02 (0.95)	3.34 (1.22)
Assimilationist	6.91 (0.18)	5.49 (0.66)	6.12 (0.78)
Humanist	5.53 (0.95)	5.12 (0.99)	6.05 (0.82)
Oppressed minority	5.33 (1.3)	4.7 (1.2)	5.17 (1.14)
Nationalist	3.68 (0.95)	3.74 (0.9)	2.98 (0.9)
Standardized means			
Racial centrality	0.74	0.29	− 1.1
Private regard	0.59	− 0.19	− 0.43
Public regard	− 0.004	− 0.13	0.14
Assimilationist	0.88	− 0.82	− 0.06
Humanist	− 0.03	− 0.44	0.50
Oppressed minority	0.22	− 0.30	0.09
Nationalist	0.21	0.27	− 0.51

terms were the cross-product terms of the centered discrimination variables at Time 1 and the cluster-group membership variable. Table 3

6.5. Covariates of OC symptoms outcomes

The first GLM ANOVA model included Time 1 racial discrimination frequency and explained 36% of the variance in OC symptom distress at Time 2 (see Table 4). Age was found to be a significant covariate in the model, in that older college students reported being distressed less by OC symptoms at Time 2 relative to baseline levels of OC symptom distress ($b = -0.32$, $p = .01$). Moreover, OC symptoms at Time 1 were significantly associated with OC symptoms at Time 2 ($b = 0.50$, $p = .001$). In terms of racial discrimination bother, the overall model explained 31% of the variance in OC symptoms (see Table 5). Age was again found to be a significant covariate, such that older college students reported being distressed less by OC symptoms at Time 2 ($b = -0.35$, $p = .01$), and initial reports of OC symptoms were associated with OC symptom distress at Time 2 ($b = 0.52$, $p = .001$). No other significant covariates were found within either model.

6.6. Racial discrimination as a risk factor for OC symptoms

Analyses revealed that after controlling for the covariates, individuals who experienced greater discrimination in the past year at Time 1 experienced higher levels of distress from OC symptoms at Time 2 ($b = 0.19$, $p = .02$), relative to baseline levels of OC symptom distress and overall psychological functioning. Racial discrimination bother ($b = 0.09$; *ns*) was not significantly associated with reports of OC symptom distress at Time 2.

6.7. Patterns of racial identity as protective resilience factors against OC symptoms development and maintenance

There were no main effects for cluster group membership in either the racial discrimination frequency ($p = .84$) or bother ($p = .69$) models. Yet, in the GLM examining the effects of racial discrimination frequency, there was a significant interaction between discrimination frequency and cluster group membership ($p = .049$; Fig. 2). The significant interaction was probed by conducting analysis of the simple slopes using the online computational tool by Preacher, Curran, and Bauer (2006). Analyses revealed that after controlling for the covariates, including baseline levels of OC symptom distress and psychological functioning, racial discrimination frequency at Time 1 had a significant positive relationship with OC symptom distress at Time 2 for college students in the Race-Focused cluster ($b = 0.27$, $p = .006$). In contrast, discrimination frequency at Time 1 was unrelated to OC symptoms at Time 2 for those in the Multiculturalist ($b = 0.20, p = .20$) and Humanist ($b = 0.07$, $p = .60$) clusters. Finally, analyses yielded no significant interaction between racial discrimination bother and racial identity as predictors of OC symptom distress at Time 2.

7. Discussion

This study examined the associations between experiences of racial discrimination, racial identity, and OC symptoms in African American college students attending a PWI. The first aim of this study was to longitudinally examine the effects of racial discrimination on OC symptom distress. Next, we sought to explore the moderating role of patterns of racial identity on the relationship between racial discrimination and OC symptom distress. Two key findings emerged from the data. First, African American young adults who experienced greater discrimination events at Time 1 had significantly higher levels of OC symptom distress at Time 2 (approximately one year later). Secondly, the association between the frequency of racial discrimination at Time 1 and OC symptom distress at Time 2 was only significant for those African American college students with a Race-Focused racial identity profile. These findings help to expand the state of a burgeoning literature and theoretical framework (i.e. Williams & Jahn, 2016; Williams et al., 2017) that seek to understand the impact of sociocultural risk and protective factors specific to African American youth (i.e. racial discrimination and racial identity, respectively) on the development of OC symptoms and OCD.

7.1. Racial discrimination as a risk factor for OC symptoms

Although a few previous studies have linked experiences of racial

Table 4
General linear model analysis of variance predicting obsessive-compulsive symptom distress at time 2 from racial discrimination frequency, racial identity, and control variables (N = 171).

Source	*df*	*B(SE)*	*Type III sum of squares*	*Partial Eta squared*	*F*	*p*
Corrected model	10	–	27.81	0.36	6.49	0.00
Intercept	1	6.3 (2.3)	3.36	0.06	7.84	0.01
Gender	1	0.06 (0.14)	0.07	0.001	0.162	0.69
Age	1	− 0.32 (0.12)	3.03	0.06	7.08	0.01
Mother's educational attainment	1	0.04 (0.04)	0.38	0.01	0.881	0.35
Global Severity Index (T1)	1	− 0.26 (0.23)	0.55	0.01	1.273	0.26
Discrimination Frequency (T1)	1	0.19 (0.08)	2.51	0.05	5.86	0.02
OC Symptoms (T1)	1	0.50 (0.15)	5.01	0.09	11.71	0.001
Cluster Group	2	–	0.16	0.003	0.181	0.84
Cluster x discrimination	2	–	2.65	0.05	3.09	0.05
Error	116		49.66			
Total	127		244.04			
Corrected Total	126		77.47			

Table 5
General linear model analysis of variance predicting obsessive-compulsive symptom distress at time 2 from racial discrimination bother, racial identity, and control variables ($N = 171$).

Source	*df*	*B(SE)*	*Type III Sum of Squares*	*Partial Eta Squared*	*F*	*p*
Corrected Model	10	–	23.61	0.31	5.13	0.00
Intercept	1	6.9 (2.4)	3.86	0.07	8.39	0.01
Gender	1	− 0.05 (0.14)	0.07	0.001	0.147	0.70
Age	1	− 0.35 (0.13)	3.41	0.06	7.41	0.01
Mother's Educational Attainment	1	0.02 (0.04)	0.09	0.002	0.19	0.66
Global Severity Index (T1)	1	− 0.17 (0.24)	0.23	0.004	0.49	0.49
Discrimination Bother (T1)	1	0.09 (0.06)	1.08	0.02	2.34	0.129
OC Symptoms (T1)	1	0.52 (0.15)	5.36	0.09	11.65	0.001
Cluster Group	2	–	0.34	0.006	0.37	0.69
Cluster x Discrimination	2	–	0.13	0.002	0.14	0.87
Error	115		52.92			
Total	126		239.58			
Corrected Total	125		76.53			

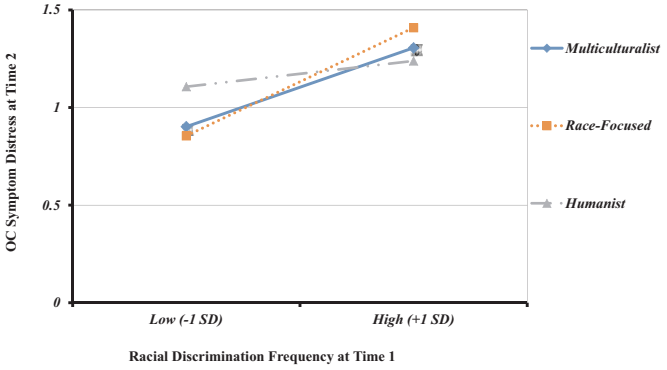

Fig. 2. Racial discrimination frequency and OC symptom distress by racial identity cluster group membership. This plot represents the relationship between racial discrimination frequency at Time 1 and OC symptom distress at Time 2 by cluster group membership. Racial discrimination was positively associated with OC symptom distress in the Race-Focused cluster, but unrelated to OC symptom distress in the Multiculturalist and Humanist clusters.

discrimination to greater OC symptoms cross-sectionally (i.e. Klonoff et al., 1999; Williams et al., 2017), the present study is unique in that it reveals that the frequency of racial discrimination may lead to greater OC symptom distress *over time* for African American young adults, even after controlling for age, gender, socioeconomic status, and baseline levels of psychological distress. The current study suggests that longitudinally, more frequent experiences of racial discrimination may exacerbate the development and/or maintenance of OC symptoms, as it was a significant predictor of increases in OC symptom distress approximately one year following prior year reports of racial discrimination. These findings are consistent with burgeoning research (i.e., Williams et al., 2017) that suggests that experiences of racial discrimination may lead to or exacerbate obsessions and compulsions for African Americans. These results are in line with William and Jahn's (2016) sociocultural model of OC symptom development and maintenance for African American youth, in that perceived racism emerged as a sociocultural risk factor that led to greater OC symptom distress over time. These findings could have emerged because as past research has shown, exposure to stress increases the incidence of unwanted intrusive thoughts (Rachman, 1997). In the context of the current study and the sociocultural model of OCD symptoms, it could be that more frequent experiences of racial discrimination may be a source of stress that is unique to African American youth, and that these experiences may further exacerbate the frequency of intrusive thoughts. Additionally, more frequent experiences of racial discrimination may deplete cognitive resources that are needed to manage the stress that accompanies obsessions and/or compulsions, which may lead to increased OC symptom distress for African American young adults (Williams et al., 2017). In light of this possibility, future work should seek to understand the association between intrusive thoughts and racial discrimination experiences.

Contrary to our hypothesis and prior findings, the distress caused by racial discrimination experiences did not emerge as a significant predictor of later OC symptom distress. It could be that rather than affecting OC symptoms directly, the distress caused by these experiences may affect these symptoms in more complex ways. For instance, it could be that the distress caused by racial discrimination may cultivate beliefs hypothesized to maintain OC symptoms, such as an inflated sense of responsibility (ISR) for preventing or causing harm and the tendency to overestimate threat (Salkovskis, Shafran, Rachman, & Freeston, 1999). However, since the current study did not explore cognitive distortions such as ISR, future studies should explore the association between the distress caused by racial discrimination, cognitive distortions associated with OC symptoms, and the severity and distress of OC symptoms. Taken together, researchers and clinicians should continue to explore the association between perceived racism and OC symptoms and OCD as this experience may uniquely influence the development and maintenance of this disorder and its symptoms.

7.2. Racial identity as a protective factor

The second aim of this study was to explore if certain patterns of racial identity would moderate the association between racial discrimination and OC symptoms. Through the profile analysis, three patterns of racial identity that are consistent with profiles found in previous literature using a similar approach were uncovered (e.g., Banks & Kohn-Wood, 2007; Rowley, Chavous, & Cooke, 2003). Consistent with our initial hypotheses, racial identity profiles did moderate the association between the frequency of racial discrimination at Time 1 and OC symptom distress approximately one year later at Time 2. In line with Williams and Jahn's (2016) sociocultural model of OCD symptoms, both the Multiculturalist and Humanist racial identity patterns emerged as protective factors against perceived racism and later OC symptoms. In contrast, those within the Race-Focused cluster were at risk for increased OC symptom distress as a result of racial discrimination. These findings expand upon Williams and Jahn's theoretical model in that it suggests that when taking into account the complexity and multidimensionality of racial identity, not all patterns of racial identity beliefs are protective when exploring the association between perceived racism and the development and maintenance of OC symptoms.

To our knowledge, this is the first study to explore the moderating effect of racial identity profiles on the relationship between racial discrimination and OC symptoms over time. Conversely, studies that have taken a variable-centered approach to understanding the moderating effect of racial identity may shed light on how the differences between

the profiles above may either protect against or exacerbate the effects of discrimination on OC symptoms. For instance, consistent with previous research (i.e. Seaton, 2009), the Multiculturalist profile, which was characterized by high racial centrality, high private regard, and low public regard, did buffer against the effects of discrimination on OC symptoms. These dimensions have been shown to be protective against race-related stress (i.e. Sellers et al., 2003; Sellers et al., 2006; Sellers & Shelton, 2003). It could be that this combination of racial identity beliefs equips youth with higher levels of self-confidence, more positive attitudes about their race, and higher self-esteem, which may help these individuals cope with both the stress caused by discriminatory events, as well as the anxiety that accompanies intrusive thoughts.

Contrary to previous research (i.e. Banks & Kohn-Wood, 2007; Seaton, 2009), those with the Humanist racial identity profile, which was characterized by low private regard, low racial centrality, low nationalist ideology, and high humanist ideology were also protected against the effects of discrimination on OC symptom distress. Those in this group did not view race as central to their self-concept, placed a strong emphasis on the commonalities between all individuals, regardless of racial/ethnic background, and de-emphasized the importance of the Black experience. In the context of this study, it could be that when faced with frequent experiences of discrimination, individuals in this group may not have attributed the cause of these experiences to their race. Furthermore, given the de-emphasis of being African American for those with this profile, racial discrimination may not have had a significant impact on their self-concepts and self-esteem. Finally, although this group had the highest public regard scores out of the three clusters, those with this profile still had low public regard ($M = 3.34$). This could mean that low public regard, in combination with high humanist ideology, could be protective against the effects of discrimination on subsequent OC symptoms. Taken together, this pattern of racial identity may have made discriminatory events less stressful for those in this group, which may have protected against the development of factors that undergird OC symptoms, such as intrusive thoughts or ISR. This would also be consistent with the preliminary analyses that revealed that the Humanist group was bothered significantly less by racial discrimination experiences as compared to both the Multiculturalist and Race-Focused groups.

Surprisingly, the results suggest that the link between racial discrimination experiences and increased OC symptom distress was only significant for those within the Race-Focused group. Although this group had high levels of racial centrality, private regard, and nationalist ideology, and low levels of public regard, which have all been shown to be protective against race-related stress (i.e., Sellers & Shelton, 2003), those with this pattern of racial identity beliefs seem to be vulnerable to developing increased OC symptoms over time. When considering what aspects of this group's racial identity beliefs may increase vulnerability, it could be that this pattern of beliefs may place this group at risk for perceiving more frequent experiences of racial discrimination. For example, it has been found that higher levels of racial centrality and nationalist ideology are associated with increased perceptions of racial discrimination (Sellers & Shelton, 2003). Additionally, in an experimental study, it was found that higher levels of racial centrality may make individuals more likely to perceive ambiguous stimuli as racial discrimination (Shelton & Sellers, 2000). In the context of OC symptom development, threat overestimation has been linked to these symptoms (Shafran, Thordarson, & Rachman, 1996), so it could be that this pattern of beliefs may place African American individuals at risk for overestimating the threat of these perceived experiences of racial discrimination. As a result, those in the Race-Focused group may be at risk for perceiving more racial discrimination while overestimating the threat associated with these experiences, which then increases their vulnerability for developing increased OC symptoms over time.

Taken together, these findings are important in that they illustrate that certain patterns of racial identity beliefs may either be protective against or increase vulnerability for developing OC symptoms over time. In the context of the sociocultural model of OCD by Williams and Jahn (2016), it is important to consider racial identity as a multidimensional and complex construct, and that not all patterns of racial identity may be protective against sociocultural risk factors in the development and maintenance of OC symptoms. It is also important to note that patterns of racial identity beliefs are not pathological, but may interact with other processes to influence psychological symptoms. Future work should continue to explore how different dimensions of racial identity interact to impact OC symptom severity and distress among African American youth.

7.2.1. Clinical implications

In line with the sociocultural model of OCD (Willians & Jahn, 2016), the current study suggests that experiences of racial discrimination can lead to increased OC symptom distress, and that racial identity beliefs moderate this association. Consequently, these findings underscore the importance of considering the influence of sociocultural risk and protective factors specific to African Americans (i.e., racial discrimination and racial identity, respectively) on OC symptom development in the assessment and case conceptualization phases of treatment. If assessments included a deeper probing of racial discrimination and identity (e.g., using the measures of both employed in this study), they might be able to discern unique sources of stress or patterns of racial identity beliefs that sustain or exacerbate these symptoms, allowing for more complex case conceptualizations and a deeper understanding of how these symptoms are experienced by African American clients.

Additionally, the associations between racial discrimination, racial identity, and OC symptoms would have several implications for cognitive-behavioral therapy (CBT) for African American young adults. For instance, studies are able to repeatedly show that African Americans with OC symptoms do not receive evidence-based treatments (EBTs; Himle et al., 2008) for OCD and OC symptoms, so creating cultural adaptations of CBT that incorporate these sociocultural risk and protective factors may improve treatment outcomes for this group. In this context, during the psychoeducation phase of treatment and prior to exposure and response prevention (EXRP; which is a standard treatment for those with OC symptoms), clinicians should be willing to discuss and process experiences of racism with their clients, as this may help African American clients identify how this unique source of stress could be contributing to increases in intrusive, automatic thoughts.

Our findings also suggest that certain patterns of racial identity beliefs may buffer against, or increase vulnerability in light of, the effects of racial discrimination experiences. Additionally, researchers have theorized that racial identity may be protective and lead to better mental health outcomes for African American youth through enhancing their self-concepts and cognitive-appraising processes, as well as by facilitating their development of adaptive coping styles (Neblett et al., 2012). Clinicians could aim to target specific racial identity beliefs, and an important behavioral treatment goal during CBT could be increasing racial centrality and private regard attitudes. For instance, clinicians could collaborate with African American young adults to explore the meaning of race to their self-concepts, as well as identify African-centered organizations and activities on campus and in their communities in an attempt to increase clients' positive feelings towards being African American and towards other African Americans. This approach may improve the ability of African American clients to cope with the stress associated with intrusive thoughts, as well as sociocultural risk factors that may exacerbate OC symptoms (i.e. racial discrimination). Conversely, clinicians could also collaborate with the client to identify if certain racial identity beliefs may be increasing the influence of cognitive distortions or beliefs that are known to exacerbate OC symptoms (i.e. ISR, threat overestimation). In the end, these proposed cultural adaptations to CBT have the potential to increase the effectiveness of this EBT for this group, which could improve long-term outcomes for African Americans suffering from OC symptoms. Furthermore, the inclusion of cultural adaptations for CBT could also increase the

willingness among African Americans to seek and engage in EBTs for OC symptoms, thereby reducing the current disparities in OCD treatment among this population.

7.2.2. Study limitations and future directions

Few, if any, empirical studies have explored the impact of sociocultural risk and protective factors on OC symptoms within African American young adults. Although this study makes several important contributions to this burgeoning literature, there are limitations that must be noted. First, the findings may not generalize beyond the current sample. Given that our sample was nonclinical, drawn from a single geographic location, and comprised of majority females from a large PWI (predominately White institution), it is unclear how these findings would apply to African American emerging adults outside of this context, and those who are suffering from clinically significant levels of OC symptoms. Similarly, given that prior research has suggested that African American males may be more prone to experiencing racial discrimination (Priest et al., 2013), future studies should also seek to explore these associations in a more representative sample of African American young adults.

Furthermore, the measure used to assess OC symptoms only captures overall distress, and may not fully illustrate the range of OC symptom subtypes and severity that exists in this sample. As a result, it is difficult to determine what dimensions of OC symptoms are most influenced by both racial discrimination and racial identity. This is particularly important given that researchers have observed that African Americans clinically diagnosed with OCD reported more contamination OC symptoms than their white counterparts (e.g., Thomas, Turkheimer, & Oltmanns, 2000; Wheaton, Berman, Fabricant, & Abramowitz, 2013). Taken together, future studies should incorporate more comprehensive measures of OC and OCD symptoms, such as the Dimensional Obsessive-Compulsive Scale (DOCS; Abramowitz et al., 2010), to explore the associations between racial discrimination, racial identity, and OC dimensions such as contamination fear, responsibility for harm and mistakes, symmetry/incompleteness, and unacceptable thoughts within this population.

Finally, although our findings suggest that racial discrimination may lead to increased OC symptom distress, and that racial identity may either protect against or exacerbate the effects of racial discrimination, we are limited in our ability to assess what mechanisms are responsible for these associations. For instance, it could be that racial discrimination increases the frequency of intrusive thoughts, which exacerbates OC symptoms over time. Alternatively, racial identity may protect against beliefs and cognitive distortions that influence the development and maintenance of OC symptoms, such as ISR, threat overestimation, and misinterpretation of intrusive thoughts (i.e., Shafran et al., 1996). In light of this possibility, future studies should seek to understand the mediating role of these constructs within the relationship between racial discrimination, racial identity, and OC symptoms among African American young adults.

8. Conclusion

This study contributes to the burgeoning literature that seeks to explore the impact of sociocultural factors on OC symptoms within African American young adults. To our knowledge, few, if any studies have explored the impact of racial discrimination, or the moderating role of racial identity, on OC symptoms over time. The current study's findings provide support that racial discrimination, over time, is associated with increased OC symptom distress. Furthermore, the findings suggest that racial identity may protect against or exacerbate the effects of racial discrimination on subsequent OC symptom distress. Altogether, these findings provide preliminary empirical support for Williams and Jahn (2016) sociocultural model of OC symptom development and maintenance, in that racial discrimination and racial identity emerged as sociocultural risk and protective factors, respectively, for African American youth.

Additionally, the finding that different patterns or profiles of racial identity beliefs may protect against or exacerbate the effects of race-related stress on subsequent OC symptom distress of members within this group further supports utilizing a person-centered approach to exploring the role of racial identity in the lives of African American youth. This multidimensional approach illustrates that not all patterns of racial identity are protective, and that racial identity is an important individual factor that can affect the mental health trajectory of this population. Future work should continue expanding upon the current study, and elucidate which mechanisms sustain the association between racial discrimination, racial identity, and OC symptoms, as well as determine how sociocultural risk and protective factors associated with OC symptom development and distress can be incorporated into clinical research and treatment to produce positive psychological outcomes for African Americans suffering from these symptoms.

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