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The role of ethnic identity in symptoms of anxiety and depression in African Americans

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Abstract

Ethnic identity has been identified as a factor contributing to resilience and coping in African Americans. Ethnic identity includes positive feelings of ethnic affirmation and belonging, appreciation for one's ethnic identity, and increased ethnic behaviors. This study examines the role of ethnic identity in symptoms of anxiety and depression. Participants were an adult student and community sample (N=572), administered the Beck Anxiety Inventory (BAI), Center for Epidemiologic Studies of Depression Scale (CES-D), State Trait Anxiety Inventory – state portion (STAI-S), and Multigroup Ethnic Identity Measure (MEIM). Compared to European Americans, African Americans reported significantly greater depression and more negative state anxiety, as well as higher levels of ethnic identity. For African Americans, higher ethnic identity was correlated to reduced anxiety and depression, whereas this was not true for European Americans. Findings support the proposition that a strong, positive ethnic identity may serve a protective role among African Americans by moderating the relationship between discriminatory experiences and psychological well-being. An Afrocentric perspective may also contribute to reduced anxiety due to a greater emphasis on a present versus future-oriented worldview. Clinical implications and directions for future research are discussed.

Keywords

ethnic identity; ethnic differences; African Americans; affect; mood disorders; anxiety disorders

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1 Introduction

In the United States, it is estimated that 28.8% suffer from an anxiety disorder at some point in their lives (Kessler et al., 2005). Due to the increasing recognition that mental disorders affect various populations differently, there is a growing interest in the study of these disorders cross-culturally. This has led to an increase in minority mental health research, including several large-scale studies that have specifically examined mental disorders in African Americans and other underrepresented populations (Zhang and Snowden, 1999; Breslau et al., 2005; Williams et al., 2007; Himle et al., 2009). Epidemiological studies consistently find that disadvantaged minorities report an equal or decreased incidence of most anxious and depressive disorders; researchers have suggested differential recall, selective non-response, measurement bias, and differential experience of pathological symptoms as possible explanations for these paradoxical findings, yet none of these provide a completely satisfactory explanation (Breslau, et al., 2005; Williams et al., 2007; Himle et al., 2009).

Ethnic minorities may be at risk of psychopathology due to distress over experiences of racism, stress over unequal treatment, and anxiety about future experiences of discrimination (i.e., Johnson, 2006; Soto et al., 2011). One factor that may confer resilience against psychopathology is the construct of ethnic identity. Ethnic identity consists of a sense of commitment and belonging to an ethnic group, positive feelings about the group, and behaviors that indicate involvement with the ethnic group (Phinney, 1992; Roberts et al., 1999; Avery et al., 2007). Established models conceptualize ethnic identity development as a process facilitated by examination of one's membership in an ethnic group (Cross, 1978; Helms, 1984; Phinney, 1990), and an individual's ethnic identity can be characterized by the stage or status of his or her exploration. Those who have given little thought or exploration of their ethnic identity are said to be in an *unexamined* stage, and may hold a negative view of their ethnic group. Those who have gone through a stage of *searching* and have developed a clear meaning of and appreciation for their ethnic background are described as being in an *achieved* or *integrated* stage (Phinney, 1990).

Unsurprisingly, studies have shown that ethnic identity is generally stronger and more salient among African Americans and other ethnic minorities than among European Americans (Phinney, 1992; Roberts et al., 1999). One reason is related to the nature of ethnic identity, as it becomes salient and meaningful only when two or more ethnic groups come into prolonged contact (Phinney, 1990). In the United States, "Whiteness" is considered normative; as such, European Americans are less likely to be regularly reminded of their race or ethnicity as compared to African Americans (McDermott and Samson, 2005).

Research has shown ethnic identity to be associated with a number of psychological variables. Much of the previous research on the psychological correlates of ethnic identity has focused on children and adolescents because the process of developing an ethnic identity is thought to typically begin in adolescence. Among adolescents, achieved identity has been found to be positively associated with self-esteem, coping, sense of mastery, and optimism; conversely, loneliness and depression have been negatively related to ethnic identity (Roberts et al., 1999). Research examining ethnic identity development across the lifespan suggests that an achieved ethnic identity may serve as a protective factor against psychological distress among adults as well. For instance, a comparison of Dominican, Puerto Rican, and African American adults showed that ethnic identity was positively associated with self-esteem in all three groups (Lorenzo-Hernandez and Ouellette, 1998). In a study conducted in The Netherlands, non-Western immigrants who exhibited psychosis were more likely to have a negative ethnic identity compared to matched controls (Veling et

al., 2010). Although, a study conducted in the U.K. by Reininghaus and colleagues (2010) found that ethnic minorities with psychosis were more likely to report strong ethnic identity compared to ethnic minority controls, and that the association between ethnic identity and psychosis was not found among White British individuals. The authors explain that the contrast in findings of the two studies may be due to methodological differences between the studies, and possibly that the impact of ethnic identity on risk for psychosis may vary depending on group and setting (Reininghaus et al., 2010).

Among African American adults, being in an unexamined stage or holding negative views of being African American has been found to be associated with poorer psychological well-being and lower self-esteem, and greater symptoms of depression (Pyant and Yanico, 1991; Munford, 1994; Yip, Seaton, and Sellers, 2006; Walker et al., 2008; Settles et al., 2010). Thus, degree of ethnic identity varies widely among African Americans, and the available evidence suggests that a strong, positive ethnic identity may serve as a protective factor against poor psychological health for this group.

Previous research on ethnic identity and mental health have generally utilized either global measures of psychological distress (Carter, 1991; Caldwell et al., 2002; Sellers et al., 2003; Franklin-Jackson and Carter, 2007), or have primarily focused on depressive symptoms (Pyant and Yanico, 1991; Yip et al., 2006; Settles et al., 2010). In their comprehensive review of anxiety psychopathology in African Americans, Hunter and Schmidt (2010) hypothesize that ethnic identity serves a protective role against anxiety as well. The present study aims to investigate the connection between ethnic identity and symptoms of anxiety in addition to depression. This is significant given the prevalence of anxiety disorders in the United States and the paucity of research on anxiety disorders among African Americans (Neal and Turner, 1991; Hunter and Schmidt, 2010; Williams et al., 2010). It is hypothesized that higher levels of ethnic identity will be correlated to lower anxiety and depression in African Americans but not European Americans.

2 Method

2.1 Sample

Data was collected from 2004–2005. Community participants were recruited through direct mail, telephone solicitation, and flyers, and students were recruited via the University of Virginia psychology department student subject pool. When conducting research on minority groups, it is often necessary to oversample to ensure enough minorities are included to provide adequate statistical power for comparisons. Therefore, we intentionally attempted to recruit a greater proportion of African Americans, and as a result the ethnic composition of the final sample was not representative of the national population. Using census data, neighborhoods were selected that were demographically approximately 50% African American in composition. Contact information for a random sample of both European American and African American residents in these areas was purchased from a professional organization that specialized in providing contact information for survey research. Personalized mailings advertising the study were then sent to the identified individuals. Non-responders received a second mailing, and if there was still no response, this was followed by phone call from a research assistant or the PI inviting the person to participate in the study.

Participants self-identified their racial group as “Black/African American” or “White/Caucasian.” Excluded were participants whose racial identification did not fit into one of the aforementioned categories, and those who reported having lived in the US for less than five years. The final sample included 572 participants, whose demographic characteristics are shown in Table 1. Community participants were included in this study to increase the

generalizability of the findings, as university student samples tend to be somewhat homogenous in terms of age and socioeconomic status.

2.2 Measures

As part of a larger battery of measures, participants were administered one measure of general anxiety, one measure of depression, two measures of situational affect, and one measure of ethnic identity. Measures were administered to participants individually by a diverse staff of research assistants. Details of the measures are described below.

2.2.1 Beck Anxiety Inventory—The Beck Anxiety Inventory (BAI; Beck, 1990) measures subjective, somatic, and panic-related symptoms, including both physiological and cognitive components. The BAI has demonstrated good internal consistency in both African Americans (Cronbach's $\alpha = 0.88$) and European Americans ($\alpha = 0.86$) (Chapman and Woodruff-Borden, 2009). In addition, the results of a confirmatory factor analysis showed a factor structure that fit both groups, suggesting that the BAI is an appropriate measure of anxiety symptoms to be used among African Americans (Chapman et al., 2009). The internal consistency for the BAI in the current sample was excellent ($\alpha = 0.91$).

2.2.2 Center for Epidemiologic Studies Depression Scale—The CES-D is a widely-used measure of depression that has demonstrated good internal consistency in samples of predominantly European Americans (Radloff, 1977). In a study of older African Americans, the CES-D was found to have good internal consistency, with $\alpha = 0.86$ (Foley et al., 2002). It should be noted that researchers have questioned the validity of the factor structure of the CES-D among African Americans, as it has been shown that African Americans tend to report more physical complaints in response to questions about depression (Brown et al., 1996). However, studies have found support for the validity of the four-factor structure across different samples of African Americans, those of low socioeconomic status (Nguyen et al., 2004), and African American women (Makambi et al., 2009; Rozario and Menon, 2010). In the current study, items were scored from 0 to 3, with higher numbers corresponding to greater agreement. The internal consistency for the CES-D in the current sample was excellent ($\alpha = 0.91$).

2.2.3. State-Trait Anxiety Inventory—This scale has been used to measure anxiety related to evaluation apprehension (STAI; Spielberger et al., 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. The state portion of the STAI (STAI-S) was administered to participants, and items were scored from 1 to 4, with higher numbers corresponding to greater agreement. The STAI has shown low to moderate internal consistency among African Americans and European Americans ($\alpha = 0.68$ and $\alpha = 0.56$ respectively; Chapman and Woodruff-Borden, 2009). In the current sample, the internal consistency for the STAI was excellent ($\alpha = 0.93$).

2.2.4. Ethnic Identity Measure—Phinney's Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992) is suitable for use with any ethnic group. Included are subscales for determining feelings of affirmation and belonging, ethnic identity achievement, and ethnic behaviors. The scale for ethnic identity was determined using the 12-item revision by Roberts et al. (1999), validated in adolescents of various ethnic groups. The MEIM has also been validated in a nationally representative sample of African American and European American adults, ages 18–35, with excellent reliability ($\alpha = 0.91$; Duque et al., 2011). In the

current study, items were scored from 1 to 4, with higher numbers corresponding to greater agreement, and the MEIM demonstrated adequate internal consistency ($\alpha = 0.76$).

2.3 Procedure

All participants provided informed consent in writing. Participants completed paper and pencil versions of the measures described as part of a larger battery. Measures were provided by an interviewer who explained the procedure to participants and remained nearby in the room for the duration of the experiment. Participants 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 University of Virginia's Center for Survey Research. All study procedures were carried out in compliance with the University of Virginia's Institutional Review Board.

3 Results

3.1 Demographic Comparisons

T tests and chi square tests were conducted to determine if the African American and European American participants significantly differed on demographic measures with respect to age, gender, marital status, and education. Results indicated that African Americans tended to be older ($t[556]=4.15, P<0.001$), female gender ($\chi^2[1]=15.70, P<0.001$), married ($\chi^2[3]=29.18, P<0.001$), and having achieved a higher education level ($\chi^2[2]=8.41, P=0.015$). Although the number of African Americans in the current sample were significantly less than the European Americans, chi square tests revealed significant differences between race and source of data, with significantly more African Americans being from the community as compared to the European American sample, $\chi^2 = 28.9, P<0.001$. Source of participant was examined in subsequent analyses (detailed below).

As such, partial correlations were conducted with the utilized anxiety and depression measures along with participant age, gender, marital status, and highest education achieved while controlling for participant racial group. After controlling for racial group, participant age, gender, marital status, and highest education achieved were not significantly correlated with measures of anxiety and depression; accordingly these demographic variables were not included in subsequent analyses.

3.2 Racial differences in anxious and depressive symptoms

Additional t-tests were conducted to determine if the African American and European American participants significantly differed on ethnic identity as well as measures of depression and anxiety. Table 2 includes mean scores by group, and as indicated African American participants scored significantly higher on ethnic identity, state anxiety, and depression scores. No significant differences emerged on the BAI. College students and community participants were also compared on demographic variables as well as on measures of ethnic identity, depression, and anxiety. As expected, the community participants were significantly older ($t[558] = 36.5, p = 0.000$). No significant differences emerged between the student and community sample on gender ($\chi^2 = 0.005, p = 0.943$). Demographic comparisons between the student and community samples on education and marital status did not appear warranted given the nature of the two samples.

The community-dwelling participants scored significantly higher on measures of ethnic identity ($t[458]=1.986, P=0.048$). As such, the African American participants and European American participants were examined separately to determine whether significant

differences emerged within groups. Results from t-tests indicated no significant differences in measures of ethnic identity, depression, and anxiety in either the African American sample or the European American sample. This suggests that significant differences between the African American and European American participants appear to be accounted for by racial grouping.

Bivariate correlations were conducted to determine the relationship among utilized variables in the African American and European American samples separately. As indicated in Table 3, significant relationships between ethnic identity, STAI-S, BAI, and CES-D emerged in the African American sample. In the European American sample, ethnic identity was only significantly correlated with the BAI in the positive direction ($r=0.134$, $P<0.01$), although the affective measures were significantly correlated with each other, as expected. Given that ethnic identity was significantly correlated with all three affective measures in the African American sample as opposed to one measure in the European American sample, these differences were further explored by comparing the differences in Pearson correlations. Using a Fisher r-to-z transformation, significant group differences were found between the correlations of ethnic identity to measures of affectivity in the STAI-S ($z=2.82$, $P=0.005$), the BAI ($z=-3.13$, $P=0.002$), and CES-D ($z=-3.17$, $P=0.002$).

3.3 Predicting anxious and depressive symptoms from ethnic identity

In order to maximize variance, three linear regressions were conducted for the African American and European American samples respectively. Ethnic identity served as the independent variable in each regression with scores from the STAI-S, BAI, and CES-D serving as the dependent variables in the specified order. The overall model for the first regression was significant, $F(147)=19.55$, $P<0.001$). Ethnic identity accounted for 11% of the variance in STAI-S scores in the African American sample. The second model predicting BAI scores from ethnic identity was also significant, $F(147)=4.18$, $P=0.043$, with ethnic identity accounting for 3% of the variance in BAI scores in the African American sample. Additionally, the third model which included ethnic identity predicting depression scores as measured by the CES-D was significant, $F(145)=10.85$, $P=0.001$, with ethnic identity accounting for 6% of the variance in depression scores. These results suggest that African Americans who report lower scores of ethnic identity endorse higher scores on measures of anxiety and depression than those who report higher scores of ethnic identity.

A similar statistical procedure was conducted in the European American sample with ethnic identity predicting scores from the STAI-S, BAI, and CES-D respectively. The first model yielded a non-significant result in the prediction of scores from the STAI-S, $F(413)=3.05$, $P=0.081$. The second model with ethnic identity predicting scores from the BAI was significant, $F(413)=7.56$, $P=0.006$. Ethnic identity accounted for approximately 2% of the variance in BAI scores. The third model utilizing ethnic identity as a predictor of depression scores on the CES-D was non-significant, $F(413)=0.54$, $P=0.464$. These results indicate that ethnic identity scores in European American adults do not adequately predict anxiety and depression scores as measured by the STAI-S and CES-D. However, higher ethnic identity scores in European Americans appears to predict increased anxiety as measured by the BAI.

Results indicate that ethnic identity is differentially related to symptoms of anxiety and depression based on ethnic/racial group, and this relationship is particularly significant in African Americans.

4 Discussion

4.1 Ethnic Differences in Depression and Anxiety

The African Americans in this study experienced significantly greater state anxiety and depressive symptoms than European Americans, however differences in somatic and cognitive anxiety, as measured by the BAI, were not significantly different. The anxiety findings are somewhat different than the results found by other investigators, who note lower levels of state anxiety and somatic/cognitive anxiety among African Americans in a student sample (Carter et al., 2001; Chapman and Woodruff-Borden, 2009). For example, Chapman and Woodruff-Borden (2009) found the opposite pattern of means in their study, in which European Americans had higher mean STAI-S scores than African Americans (35.47 and 32.88, respectively), as well as higher BAI scores (11.00 and 8.90, respectively). It is not clear why this different pattern emerged, although it may be related to the setting in which the study was conducted, as African Americans may be more anxious about participating in research in an unfamiliar setting (Williams et al., in press).

Previous investigators have suggested a CES-D score of 16 for the cut-off point for identifying those at high risk for depression (Radloff, 1977; Zich et al., 1990), thus the mean score of 17 among the African American sample could be an indication of distress. However, the levels of depression in the current study were within the range of means found in other studies that compared CES-D scores in samples of African American and European Americans. Kelly and colleagues (1999) found that African American undergraduates had greater scores on the CES-D than European Americans (21.73 and 19.43, respectively). Iwata and colleagues (2002) similarly found a pattern of slightly greater CES-D scores among African Americans than European Americans (14.01 and 12.97, respectively), although that sample had lower scores relative to the current study. Epidemiological studies find similar 12-month prevalence rates in between groups for a depression (Breslau et al., 2005; Williams et al., 2007).

4.2 Positive Ethnic Identity, Fewer Symptoms in African Americans

This study found that African Americans with lower levels of ethnic identity are experiencing somewhat greater amounts of cognitive and somatic anxiety, state anxiety, and depression. These findings are consistent with previous studies showing that higher levels of ethnic identity among certain groups of African Americans are associated with fewer symptoms of anxiety and depression, and overall lower psychological distress (Pyant and Yanico, 1991; Yip et al., 2006; Walker et al., 2008).

Also consistent with previous research was the finding that European Americans endorsed lower levels of ethnic identity compared to their African American counterparts, and the means on the MEIM in our sample were similar to means previously found in a college sample (African American = 3.30, European American = 2.71; Carter et al., 2001). Our findings support assertions that ethnic identity is less salient to European Americans (McDermott and Samson, 2005). A higher level of ethnic identity was not associated with lower levels of anxiety and depression among European Americans, rather higher ethnic identity was correlated with increased anxiety. One possible reason for this may be related to differences in Afrocentric versus Eurocentric worldviews about time. Eurocentric cultures tend to be more precise and future-oriented, whereas the Afrocentric perspective is more flexible and present-oriented (Akbar, 1991; Rubin and Belgrave, 1999). Anxiety is characterized as an attentive bias toward future possible threat over present moment experiences, and, in fact, many interventions for anxiety disorders, help relieve anxiety by teaching patients to shift their focus to the present (Borkovec, 2002). Therefore, a cultural

tendency toward future events could predispose European Americans to experience greater anxiety.

Another explanation for differences between the two groups may be related to the fact that African Americans are more likely to experience racial discrimination than European Americans; the stress from such discrimination has been shown to have negative implications for the mental health of African Americans (Broman, 1997; Soto et al., 2011). For example, Soto and colleagues found that experiencing racial discrimination was associated with significantly higher odds of lifetime generalized anxiety disorder among African Americans, but this was not the case for European Americans. The authors suggested that racial discrimination was more deleterious for African Americans due to the frequency of the experiences and realistic fears associated with minority status.

Ethnic identity is thought to play a role in moderating the relationship between discriminatory experiences and psychological well-being either by serving as a “buffer” against the harmful effects of discrimination, or by serving as a “lens” through which discriminatory experiences are perceived (Franklin-Jackson and Carter, 2007). Sellers and colleagues (2003) found some support for the “buffer” hypothesis, as greater experiences with racial discrimination was only associated with greater psychological distress among African Americans for who race was less central and salient to their identities. Franklin-Jackson and Carter similarly showed that African American young adults at the achieved ethnic identity stage endorsed greater levels of psychological health, despite also reporting more experiences with discrimination than individuals in less achieved stages. Thus, ethnic identity may serve as a protective factor against the negative effects of racial discrimination among African Americans but not European Americans, who generally experience less racial discrimination.

The current findings suggest that mental health clinicians should routinely take into consideration the patient’s level of ethnic identity when working with African American clients. In addition, clinicians may also encourage and support such clients in the exploration of their ethnic identities, as greater achievement of ethnic identity could improve overall psychological well-being. Such interventions might include discussions of what the client likes about his/her ethnic group, learning more about the achievements of the client’s ethnic group to bolster a sense of ethnic pride, rejection of pathological stereotypes, and increased involvement in traditional ethnic activities (*e.g.*, Kwaanza, Juneteenth activities, etc.)

4.3 Study Limitations

In terms of limitations, this study was correlational, and therefore it is possible that other factors are causing the observed relationship between ethnic identity and psychological well-being. It is possible that anxious and depressive symptoms impacted the participants’ actual or perceived levels of ethnic identity, although it is not clear by what mechanism this might occur. Furthermore, anxiety symptoms experienced by African Americans may not be completely captured by standard screening measures. In an ethnographic study of ECA data, unique African American idioms of distress fell into several diagnostic categories other than anxiety (Heurtin-Roberts et al., 1997). Therefore, it seems important that all psychopathology measures be carefully studied for ethnic group bias at the item level (Williams et al., 2005; Hambrick et al., 2010). Nonetheless, the measures utilized in this study had strong psychometric properties and had been previously validated in African American samples.

Additionally, the African Americans in the current sample were significantly older than the European Americans. Although partial correlations were not significant when controlling for participant race, it could be that ethnic identity is more prominent in older adults as opposed

to younger adults, which may partially explain differences some of the differences between European Americans and African Americans in the current sample. Although ethnic identity was higher overall in the African American sample, it is plausible to conclude that older individuals in general have a better sense of the construct due to more experiences in a changing, pluralistic society. Similarly, more African Americans were from the community as opposed to more European American participants being students. As aforementioned, one may presume that living in the community provides more unique experiences that make one more aware of ethnic identity, particularly for African American adults. Having an equal number of community and student participants across racial groups would be useful for future work in this area.

4.4 Conclusions and Future Directions

In conclusion, results of the study support the growing body of evidence showing that a strong, positive ethnic identity may be a factor in protecting African Americans against anxious and depressive symptoms. The study extended these findings to African American adults, as previous research has primarily examined ethnic identity among adolescents. Future studies should investigate ethnic identity among clinical samples to provide a better understanding of its potential role as a protective factor against the development of mental disorders.

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Table 1

<i>Participant Ethnicity/Race, Age, Gender, and Student Status Information</i>						
	Age (S.D.)	Male	Female	Student	Community	Total
Black	26.76 (14.14)	44	107	101	50	151
White	22.29 (9.94)	206	215	365	56	421
Total	23.46 (11.35)	250	322	466	106	572

<i>Participant Marital Status Information</i>					
	Single Living Alone	Single with Parents	Married/ Cohabiting	Divorced/ Separated/ Widowed	Total
Black	50	67	23	10	150
White	239	140	26	15	420
Total	289	207	49	25	570

<i>Highest Education Obtained</i>				
	HS Graduate/ GED or Less	Some College or Associate Degree	4 Year or Graduate Degree	Total
Black	56	73	9	138
White	123	213	59	395
Total	179	286	68	533

Black = African American, White = European American
 HS Graduate/GED = High School Diploma or Equivalent

Table 2

Comparisons on Clinical Measures by Ethnic/Racial Group

	Race	N	Mean	Std. Dev.	t	p	d
MEIM	Black	147	39.42	5.50	12.68	<0.001	1.23
	White	414	32.43	5.83			
STAI-S	Black	139	35.72	12.06	2.46	0.014	0.23
	White	412	33.28	9.39			
BAI	Black	151	12.07	9.50	1.19	0.233	0.11
	White	420	11.05	8.84			
CES-D	Black	150	16.99	11.25	3.93	<0.001	0.35
	White	420	13.41	8.91			

MEIM = Multigroup Ethnic Identity Measure, STAI-S = State-Trait Anxiety Inventory – state portion, BAI = Beck Anxiety Inventory, CES-D = Center for Epidemiologic Studies Depression Scale, Black = African American, White = European American

Table 3

Correlations between Ethnic Identity and Clinical Measures by Ethnic/Racial Group

	MEIM	STAI-S	BAI	CES-D
MEIM	-	-0.345**	-0.167*	-0.265**
STAI-S	-0.086	-	0.538**	0.756**
BAI	0.134**	0.507**	-	0.698**
CES-D	0.036	0.626**	0.588**	-

Pearson correlations for African Americans are shown above the diagonal and for European Americans below the diagonal.

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level.

MEIM = Multigroup Ethnic Identity Measure, STAI-S = State-Trait Anxiety Inventory – state portion, BAI = Beck Anxiety Inventory, CES-D = Center for Epidemiologic Studies Depression Scale

N ranged from 147–151 for African Americans and 413–420 for European Americans due to missing values.