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THE ROLE OF AFROCENTRIC FEATURES IN MENTAL HEALTHCARE UTILIZATION
AND COUNSELOR PREFERENCES IN BLACK COLLEGE STUDENTS

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science
at Virginia Commonwealth University

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Abstract

THE ROLE OF AFROCENTRIC FEATURES IN MENTAL HEALTHCARE UTILIZATION AND COUNSELOR PREFERENCES IN BLACK COLLEGE STUDENTS

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A thesis proposal submitted in partial fulfillment of the requirements for the degree of Master of Science at Virginia Commonwealth University

Virginia Commonwealth University
2017

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Though mental health issues are prevalent in Black young adults, they underutilize mental healthcare services. This research examined the role of feature-based discrimination in mental healthcare (under)utilization. Study 1, a secondary analysis of the National Longitudinal Study of Adolescent to Adult Health, provided no evidence supporting a link between skin tone and mental healthcare utilization, when controlling for depression diagnosis. However, when controlling for depression symptoms, there was a trend such that Black young adults with darker, as opposed to lighter, skin tone utilized healthcare less. Study 2, an experimental study with 33 Black college students, showed 73% of the sample preferred a Black counselor. Additionally, they preferred counselors with darker skin, wider nose, and thicker lips, compared to counselors with lighter skin, narrower nose, and thinner lips. These findings suggest the importance of taking into account Afrocentric features and its social consequences when assessing health-related behaviors in Black Americans.

The Role of Afrocentric Features in Mental Healthcare Utilization and Counselor Preferences in Black College Students

Though mental health issues are prevalent among young adults, they tend to underutilize mental healthcare services even when the services are available to them free of charge or at low cost (Blanco et al., 2008; Broman, 2012). This is particularly true of Black Americans (Broman, 2012; Wang et al., 2005): as compared to White Americans, Black Americans have less positive attitudes toward mental healthcare services, perceive more barriers to mental healthcare services, and are less likely to utilize mental healthcare services (Ault-Brutus, 2012; Neighbors, 1985; Thurston & Phares, 2008). There are multiple reasons as to why Black young adults underutilize mental healthcare services. However, one major factor is perceived discrimination and its associated mistrust in mental healthcare providers who are not Black Americans (i.e., non-Black mental healthcare providers) due to concerns about receiving unfair treatment and lack of shared-cultural understanding (Jacobs, Rolle, Ferrans, Whitaker, & Warnecke, 2006; Whaley, 2001). In fact, this is not only limited to mental healthcare services—Black Americans generally prefer seeing Black healthcare providers (Coleman, Wampold, & Casali, 1995; Thompson, Bazile, & Akbar, 2004; Townes, Chavez-Korell, & Cunningham, 2009). Thus, researchers, clinicians, and the government have recently been making efforts to increase the number of Black healthcare providers, including mental healthcare providers (e.g., psychiatrists, therapists, counselors), in the United States.

Efforts to increase the number of Black mental healthcare providers are crucial for increasing the likelihood that Black young adults to utilize mental healthcare services. However, recent social psychology research examining Afrocentric features provides evidence that Black Americans often experience two forms of bias—category-based and feature-based bias (Blair &

Judd, 2011; Blair, Judd, & Fallman, 2004), implying that merely increasing the number of Black mental healthcare providers will not be sufficient to eliminate racial disparities in mental healthcare utilization. The present research aims to systematically examine the role of feature-based bias in the mental healthcare utilization of Black young adults by conducting two studies: (1) a secondary analysis of cross-sectional data collected from a nationally representative sample of Black young adults, and (2) an experimental study with a sample of Black Virginia Commonwealth University (VCU) students.

Prevalence of Mental Health Issues in Black Americans and Public Health Challenges

Mental health issues are prevalent in Black Americans. For example, a secondary analysis of the National Survey of American Life has shown that although lifetime prevalence of major depressive disorder (MDD) was greater in White Americans (17.9%) than in Black Americans (10.4%), the persistence of MDD was greater for Black Americans compared to White Americans (Williams et al., 2007). These findings suggest that depressive episodes of Black Americans are more immobilizing, more persistent, and appear to be more resistant to treatment (Breslau et al., 2006; Williams et al., 2007). Additionally, a more recent report published by U.S. Department of Health and Human Services in 2014 has revealed that Black Americans are 20 percent more likely than White Americans to report serious psychological distress [U.S. Department of Health and Human Services (U.S. DHHS): Office of Minority Health, 2014]. They are also more likely to report having feelings of sadness, hopelessness and worthlessness compared to White Americans (U.S. DHHS: Office of Minority Health, 2014).

Though mental health issues are prevalent and pervasive in the Black American population, there is abundant evidence showing that Black Americans are more likely than White Americans to delay or fail to seek mental healthcare services (Alegría, Canino, Vera, & Ortega,

2002; Sussman, Robins, & Earls, 1987; Wang et al., 2005). For example, Neighbors (1985) conducted a cross-sectional survey study examining the utilization of health and mental healthcare services in Black Americans across the country. 1,322 respondents reported that they experienced a personal problem that took them to the brink of a nervous breakdown. However, only 55% of those respondents ($n = 631$) reported using professional help. Of those 55% that used professional help, only 9.4% ($n = 59$) reporting going to a mental health center, and 15% ($n = 94$) contacted a psychiatrist or psychologist (Neighbors, 1985).

In another study, Simning and colleagues (2012) examined the mental healthcare need and healthcare service utilization in older adults residing in public housing. The majority (61%) of the sample self-identified as Black American. Participants were asked to attend a 90-minute psychiatric research interview conducted in the apartment of the participant or at another private location (Simning, van Wijngaarden, Fisher, Richardson, & Conwell, 2012). Mental health treatment was deemed needed if a participant had syndromal anxiety and/or depression, subsyndromal anxiety and/or depression, poor self-reported mental health, or needed to see a mental healthcare provider in the 6 months prior to the psychiatric research interview. Based on the criteria, 31% of the public housing residents were determined as having a need for mental health treatment. However, only 46% percent of residents considered to have a mental healthcare need received any treatment.

Keyes and his colleagues (2008) examined disparities in mental healthcare utilization for mood disorders, alcohol use disorders, and anxiety disorders between White and Black adults. Results suggested that White adults were more likely than Black adults to have received treatment for both mood disorders and anxiety disorders (Keyes et al., 2008). Finally, Andrea Ault-Brutus (2012) explored the change in racial disparities in mental healthcare utilization from

1990 to 2003. She found that the Black-White disparity in mental healthcare utilization increased from Time 1 (1990-1992) to Time 2 (2001-2003).

These findings from cross-sectional studies are consistent with the findings from national surveys. For example, a report published by the U.S. General Commission in 1999 has shown racial/ethnic minorities tended to have less access to mental healthcare services and are less likely to get the care they need (U.S. DHHS, 1999). In an analysis of the 1990-1992 National Comorbidity Survey, Alegría and her colleagues (2002) also found that Black Americans who were not categorized as poor socioeconomic status were still less likely to receive specialty care, such as mental healthcare, than their White counterparts (Alegría et al., 2002). These results suggest that, regardless of socioeconomic status, Black Americans are less likely than White Americans to utilize mental healthcare services.

Taken together, prior research strongly suggests that, despite the prevalence of mental health issues in Black Americans, disproportionately high rates of Black Americans do not fully utilize the mental healthcare services. The question becomes, “Why are so few Black Americans seeking help from mental healthcare professionals?” Several reasons for underutilization of healthcare services by young adults have been identified in the previous literature, such as the cost of obtaining healthcare coverage, difficulty navigating the adult healthcare system, and the stigma of behavioral health and substance abuse problems (Institute of Medicine & National Research Council, 2015). However, particularly for young adults enrolled in college, many of them have access to free of charge or low cost physical and mental healthcare services on campus. Despite the availability of such easy access to mental healthcare services, college students have been found to still underutilize the healthcare; this is particularly true for young Black adults (Broman, 2012). This suggests that there are other important psychological factors

that prevent Black young adults from seeking help from proper health professionals. Health disparities and social psychology research suggest that one potentially important factor that contributes to underutilization of healthcare services in Black Americans may be perceived discrimination and its associated lack of trust in physicians.

Perceived Discrimination, Trust in Physicians, and Healthcare Utilization

Previous research has provided evidence to support that perceived discrimination can adversely impact Black patients' satisfaction with and trust in physicians, which further can impact healthcare utilization. For example, Benkert and colleagues (2006) found that Black patients' perceptions of racial discrimination were negatively correlated with patients' satisfaction. Further analysis indicated that the relationship between patient perceptions of racial discrimination and satisfaction with their physicians was mediated by trust in their physicians (Benkert, Peters, Clark, & Keves-Foster, 2006). In other words, Black patients who reported higher, as opposed to lower, levels of perceived racial discrimination in their lives in general had less trust in their physicians, leading to lower satisfaction with their physicians.

In a secondary data analysis of the Survey on Disparities in Quality of Health Care, Lee and collaborators (Lee, Ayers, & Kronenfeld, 2009) investigated the relationship between perceived provider discrimination, healthcare utilization, and health status. They found that Black Americans reported more perceived provider discrimination and poor health compared to White Americans. They also found that individuals with greater perceptions of provider discrimination were less likely to utilize healthcare services when they needed. Given that Black Americans were more likely than White Americans to report greater amount of perceived discrimination, they also would be less likely to use necessary healthcare services.

Burgess and colleagues (2008) also examined the relationship between perceived discrimination and underutilization of medical and mental healthcare in nationally representative sample of Black, White, Hispanic and Asian individuals. They found that 11.7% of White Americans reported having experienced major discrimination in the past 12 months, while 43.7% of U.S.-born Blacks reported a major discrimination. Additionally, they found that 6.9% of U.S.-born Blacks (compared to 1.2% of White Americans) had experienced discrimination in the healthcare setting in the past 2 months. General perceived discrimination (from any source) was associated with a greater likelihood of underutilization for both White Americans and Black Americans. Additionally, for U.S.-born Blacks, the likelihood of underutilization was greater among those participants who reported experiencing everyday discrimination (but not major discrimination or discrimination specifically in the healthcare setting) “very frequently” or “somewhat frequently” (Burgess, Ding, Hargreaves, van Ryn, & Phelan, 2008). The results suggest that discrimination does not have to occur in the medical setting to negatively affect the utilization of healthcare services.

These findings are consistent with experimental social psychology research showing that Black Americans often report concerns about being the subject of prejudice or discrimination when interacting with non-Black individuals (Shelton, 2003; Shelton & Richeson, 2006). Consequently, Black Americans often choose to avoid interracial interactions (Mendoza-Denton et al., 2002; Shelton & Richeson, 2005; 2006). Therefore, if Black Americans think that their medical interactions will be interracial, it follows that they may choose to avoid or delay seeking medical care to avoid potentially discriminatory medical interactions.

Lack of Diversity in the Medical Field

Prior research examining patients' preferences for their physician has provided evidence that many patients prefer, regardless of race, to see same-race physicians for their medical care (Garcia, Paterniti, Romano, & Kravitz, 2003; Gerbert et al., 2003; LaVeist & Nuru-Jeter, 2002; Saha, Taggart, Komaromy, & Bindman, 2000). Patients who are of the same race/ethnicity as their physicians are more likely to use needed health services, less likely to postpone obtaining care, and use health services more often, compared to patients whose regular doctors are of a different race (LaVeist, Nuru-Jeter, & Jones, 2003). The researchers conclude that this relationship occurs because of the acceptance and cultural sensitivity the patients feel from same-race medical professionals (Earl, Alegria, Mendieta, & Linhart, 2011). Consistent with this argument, research has shown that Black Americans tend to prefer to see Black physicians because they believe that Black physicians and they have a shared cultural understanding, resulting in higher levels of perceived trust in physicians (Chen, Fryer, Phillips, Wilson, & Pathman, 2005; Saha et al., 2000).

Thus, it is generally accepted by researchers, policy makers, and government officials that system-wide interventions need to be implemented to increase the number of Black healthcare professionals in order to begin to reduce Black-White disparities in healthcare utilization (Reede, 2003). There have been many efforts to increase the number of medical students and health researchers from underrepresented backgrounds (Lee & Franks, 2009; Department of Health and Human Services, 2014). For example, at the institutional level, many medical schools have been making explicit efforts to recruit students from underrepresented social groups in order to increase diversity within their programs, such as the University of California-San Francisco (UCSF) and Stanford Medical schools (Lee & Franks, 2009). However,

Lee and Franks (2009) found that the only 20-30% of incoming medical students at UCSF and Stanford have been from underrepresented groups over approximately 40 years, suggesting that they have to try even harder to match the diversity of the country (Lee & Franks, 2009; White, 2010). They argue that the difficulty recruiting medical students from underrepresented groups is most likely due to inequalities in the education system, which prevent diverse students from even getting to the level necessary to apply to medical schools and other health-science programs. Thus, they highlighted the need to act on multiple levels to reduce the disparities from kindergarten to university settings. The federal government is also making strong efforts to increase health researchers from underrepresented groups. Such efforts include the National Institute of Health (NIH) training grants (T32) and pre-doctoral grants (F31- Diversity) specifically tailored for individuals from social groups defined by the NIH as underrepresented populations, including racial and ethnic minorities. They also provide medical training institutions with strategies and resources for recruiting and retaining racial and ethnic minority students and fellows (Department of Health and Human Services, 2014; National Institute of General Medical Sciences [NIGMS], 2016).

These interventions are crucial first steps toward increasing the number of medical students and health researchers from underrepresented groups in order to eliminate racial disparities in healthcare utilization. However, they require lots of time to have sizeable results because racial/ethnic minorities are grossly underrepresented in both physical and mental healthcare professionals currently. For example, in 2010 Census, 12.2% of the US population self- identified as Black/African-American. However, in the same year, only 5.8% of physicians and surgeons self-identified as Black/African Americans (Humes, Jones, & Ramirez, 2011; U.S Bureaus of Census & Labor Statistics, 2010). In the same report by the U.S. Bureau of Census &

Labor Statistics, it is documented that only 3.9% of psychologists and 2.6% of therapists, identified as Black/African-Americans. Consequently, though the precise numbers vary depending on the sources of the statistics, approximately 80-90% of Black Americans see non-Black physicians (primarily White or Asian physicians) when they seek healthcare services (Chen et al., 2005; LaVeist & Carroll, 2002; Stevens, Shi, & Cooper, 2003; Traylor, Schmittiel, Uratsu, Mangione, & Subramanian, 2010). Additionally, and more importantly, simply increasing the number of Black healthcare professionals would not be sufficient to fully reduce the disparities in healthcare utilization, according to the recent social psychological research on Afrocentric features.

Social Psychology Research of Category- vs. Feature-Based Bias

When people meet a stranger for the first time, they tend to form impression of that person very quickly based on the limited amount of information. According to the major conceptual models of impression formation, such as Dual Process Model (Brewer, 1988) and Continuum Model of Impression Formation (Fiske & Neuberg, 1990), people first quickly classify others into culturally meaningful social groups based on the readily visible physical features. Although which social groups are important vary greatly based on the specific circumstances, they tend to be race and gender in the United States. Once the individual was categorized into a certain social group, then people form their impressions of that individual based on the group membership, not on the characteristics of the individual, resulting in category-based bias (Brewer, 1988). Only when able (i.e., having enough cognitive resources) and motivated (i.e., willing to override the category-based judgments), do people attempt to pay attention to individuating information and form impressions of others based on the characteristics of the individual (Fiske & Neuberg, 1990).

Recent social psychology research of Afrocentric features, however, provides strong evidence that people use visible physical features to not only categorize others, but also spontaneously and simultaneously make inferences about individuals within a certain social category (Blair & Judd, 2011; Maddox, 2004). For example, research has shown that Black Americans with stronger Afrocentric features are considered to have more traits that are stereotypical of Black Americans than those with weaker Afrocentric features (Blair, Judd, Sadler, & Jenkins, 2002; Blair, Chapleau, & Judd, 2005). Afrocentric features are physical features that signal African ancestry, such as darker skin and eyes, wider nose, thicker lips, and coarse hair. Osborne and Davies (2013) found that witnesses that saw a Black person accused of a stereotypically Black crime (e.g., suspected pimp) were more likely to remember the person having more Afrocentric features compared to the Black person that committed a stereotypically White crime (e.g., internet hacker).

Similarly, Blair et al. (2005) examined the effects of Afrocentric features on judgments of Black faces in the presence of additional information (prior aggressive or non-aggressive behavior). Participants were provided with information about prior aggression and photographs of 64 Black Americans in four independent circumstances. Participants were then asked to predict the aggression level of the Black American in a fifth, unknown circumstance. They found that targets with stronger Afrocentric features were rated more likely to behave aggressively in the fifth circumstance, compared to those with weaker Afrocentric features. This effect occurred even after controlling for the level of aggression described in the first four circumstances. Additionally, it has also been shown that these biased judgments based on Afrocentric features could not be reduced even when participants were informed about the nature of feature-based

biases and explicitly instructed to suppress them (Blair et al., 2004). These findings suggest that the effects of feature-based biases are rather robust (Blair, 2006; Blair et al., 2004).

Research has also shown that Afrocentric features also impact people's affective reactions toward and evaluations of Black Americans. For example, Hagiwara and colleagues (Hagiwara, Kashy, & Cesario, 2012) have shown that White Americans responded more negatively toward Black men with darker skin tone than toward Black men with lighter skin tone at both the implicit and explicit levels. Above and beyond this skin tone effect, White Americans also reacted more negatively toward Black men with stronger Afrocentric facial features (i.e., thicker lips and wider nose), as opposed to weaker Afrocentric facial features. These findings were also replicated in a study in which researchers found that people evaluated faces more positively when they were Eurocentric and lighter skin tones compared to when they were Afrocentric and darker skin tones (Stepanova & Strube, 2012). Additionally, Black Americans with more Eurocentric features are deemed more attractive, which is associated with higher levels of competence (Breland, 1998).

Research also provides evidence that Black Americans with stronger Afrocentric features are treated more negatively than those with weaker Afrocentric features (Hall, Williams, Penhollow, Rhoads, & Hunt, 2015; Hersch, 2011). For example, Kahn and Davies (2011) found that White participants were more likely to mistakenly shoot unarmed Black men with stronger Afrocentric features than unarmed Black men with weaker Afrocentric features or White men during an online task. Another study has shown that Black Americans with stronger Afrocentric features were found to have fewer friends of other races compared to Black Americans with weaker Afrocentric features (Hebl, Williams, Sundermann, Kell, & Davies, 2012). The same study has also shown that requests for friendship made to people of other races by Black

Americans with stronger Afrocentric features were more likely to be rejected than those made by Black Americans with weaker Afrocentric features (Hebl et al., 2012). Finally, in the criminal justice system, some research has shown that when a case involves a White victim, the stronger a Black defendant's Afrocentric features, the more likely that person is to have harsher sentence and be sentenced to death (Eberhardt, Davies, Purdie-Vaughns, & Johnson, 2006).

One important aspect of feature-based bias is that it is not only perpetuated by White Americans, but can also operate within the Black American community (Blair et al., 2002; Maddox & Gray, 2002; Maddox, 2004). For example, Maddox and Gray (2002) found that Black Americans with stronger Afrocentric features are perceived, evaluated, and treated more negatively by both outgroup and ingroup members. More specifically, both Black and White participants notice variations in skin tone and use the information to sort Black Americans into subcategories based on skin tone (Maddox & Gray, 2002). Additionally, participants in this study described Black Americans with darker skin tone using more negative and stereotypic traits and Black Americans with lighter skin tone using more positive and counterstereotypic traits. Kahn and Davies (2011) have also found that Black Americans were more likely to accidentally shoot unarmed Black men with stronger Afrocentric features compared to Black men with weaker Afrocentric features. The reverse was also true; Black Americans were more likely to not shoot armed Black men with weaker Afrocentric features compared to Black men with stronger Afrocentric features. Taken together, feature-based bias is at least (if not more) as prevalent and pervasive as category-based bias and can happen even within the Black community.

Feature-Based Bias and Healthcare Utilization in Black Americans

Findings from prior social psychological research of Afrocentric features suggest that Black Americans may not blindly prefer seeing any Black healthcare providers over White

healthcare providers (Maddox & Gray, 2002; Blair, Judd & Fallman, 2004). Specifically, Black Americans may perceive Black healthcare providers with stronger Afrocentric features to be less competent than Black healthcare providers with weaker Afrocentric features. Alternatively, Black Americans with stronger Afrocentric features may expect to be treated unfairly by Black healthcare providers with weaker Afrocentric features. Thus, they may prefer to be treated by Black healthcare providers with the similar degree of Afrocentric features.

There is some evidence supporting these predictions. Kelly and Greene (2010) provided the literature review of the role of Black female counselors' skin tone, hair texture, and hairstyle in the therapeutic relationships. They suggest that Black therapists should be aware of how they could be perceived by their Black female clients. On the one hand, Black female clients with lighter skin tone than their Black therapists may perceive themselves to be superior, devalue the therapists, or expect the therapists to resent them because of the therapist's jealousy of their lighter skin (Kelly & Greene, 2010). On the other hand, Black female clients with darker skin tone than their Black female therapists may expect the mental healthcare providers to feel superior to them or presume that the therapists cannot understand what their lives are like as Black women with dark skin tone. Kelly and her colleague (2010) also discuss similar assumptions about Black female clients and therapists based on the texture and style of their hair (afro vs. relaxed). Tummala-Narra also explored the historical perspective on how Black clients may come to question their racial authenticity or sense of the belonging to the Black community as well as consequent emotional experiences (e.g., guilt, shame, or pride) because of their skin tone (Tummala-Narra, 2007). Overall, these reviews indicate that the concordance/discordance in Afrocentricity between Black patients and Black healthcare providers may impact patients'

satisfaction, trust, and healthcare utilization. However, empirical research examining these associations is still limited.

The Overview of the Present Studies

The overarching goal of the present research was to examine the role of feature-based bias in Black Americans' health-seeking attitudes and healthcare utilization. This research particularly focused on mental healthcare utilization in young adults, particularly college students, for two reasons. First, most serious psychological disorders are diagnosed during late adolescence and early adulthood (de Girolamo, Dagani, Purcell, Cocchi, & McGorry, 2011; Kessler et al., 2005). College students are particularly vulnerable to mental and physical illness due to substantial stress that originates from living in a new place, meeting new friends, and striking the delicate balance of work, school and their social lives. Second, many college students are required to seek medical help on their own for the first time (as opposed to adolescents in middle and high schools whose parents seek medical help on behalf of them). College students are away from their family for long periods of time, and it is imperative that they learn the skills necessary to navigate their own healthcare services in order to address their medical needs in a timely manner. Thus, they are encouraged to be both proactive and independent in seeking medical help on and off-campus.

In order to achieve the overarching research goal, I conducted two studies and address the following three specific research questions: (1) Is there a significant association between individuals' strength of Afrocentric features and use of mental healthcare services in a nationally representative sample of young Black adults?; (2) Is there a significant association between individuals' strength of Afrocentric features and use of mental healthcare services in a sample of Black College students?; and (3) Do Black college students prefer to see a Black mental

healthcare professional who shares similar strength of Afrocentric features more than other Black mental healthcare professionals?

The first research question was addressed by conducting a secondary analysis of the National Longitudinal Study of Adolescent to Adult Health (Add Health). In this correlational study, I examined whether patient-reported skin tone (one important Afrocentric feature) was associated with self-reported mental healthcare utilization. I hypothesized that individuals with lighter skin tone would be more likely to utilize mental healthcare services compared to individuals with darker skin tone.

The second and third research questions were addressed by conducting an experimental study. In this study, Black students at VCU were asked to complete both a survey, designed to assess their attitudes and behaviors related to healthcare utilization, and a computer task, designed to assess student preference of counselors by manipulating counselors' physical facial features. It was hypothesized that: (1) Black students with weaker Afrocentric features would be more likely to have utilize mental healthcare services compared to Black students with stronger Afrocentric features; (2) Black students would have a greater preference to seek help from Black counselors than White counselors; and (3) Black students would have the greatest preference to see Black counselors with Afrocentric features that are similar to their own, compared to those that are dissimilar.

Study 1: Secondary Data Analysis

The overall goal of Study 1 was to address the first research question of the present study: Is there a statistically significant association between individuals' strength of Afrocentric features and mental healthcare utilization in a nationally representative sample of young Black adults? To address this research question, I conducted a secondary data analysis of the National

Longitudinal Study of Adolescent to Adult Health (Add Health). Add Health is a nationally representative sample of American adolescents who were in the 7th to 12th grade at the time of the initial recruitment. The data were collected at four different time periods between the years of 1994-2008. Wave 1 contains data collected between 1994 and 1995. Wave II contains data collected in 1996. Wave III contains data collected between August 2001 and April 2002, and Wave IV contains data collected in 2008 (Harris & Udry, 2016). Add Health asks a range of questions regarding adolescents' social, economic, psychological, and physical well-being, while also examining the context in which adolescences are getting their education, living, working, and playing.

Add Health was selected for the current secondary analysis for three reasons. First, it had a relatively large sample of Black Americans. Second, the participants reached young adulthood by Wave III, which is the targeted population of the present research. Third, Add Health was the only national survey that obtained information about skin tone and mental healthcare utilization from each participant (as opposed to other surveys, such as the General Social Survey and the Collaborative Psychiatric Epidemiology Surveys, that assessed skin tone and mental healthcare utilization at different time points from different sets of participants).

Participants

The Add Health initial sample (i.e., Wave I) consists of 15,170 students from 80 high schools and 52 middle schools in the United States that were selected with unequal probability of selection. The Add Health incorporated systematic sampling methods and implicit stratification to ensure the sample was representative of US schools regarding region of the country, urbanicity, size and type of school, and race/ethnicity. The current study exclusively focused on the data collected in Wave III. During wave III, 75% of the 6,504 participants from Wave I that

completed an in-home interview were re-interviewed ($n = 4,882$, women = 53.9%, $M_{\text{age}} = 21.82$ years old, $SD = 1.81$). The target population of the current secondary analysis were those individuals who self-identified as Black or African-American and provided data on both skin tone and healthcare utilization ($n = 1,211$, women = 56.5%, $M_{\text{age}} = 21.82$ years old, $SD = 1.86$). Participants who did not provide both skin tone data and healthcare utilization information were excluded from the present secondary analysis.

Procedure

Wave III consisted of the collection of biological specimens and a computer-assisted personal interview (CAPI) in order to maintain confidentiality. The interviews lasted approximately 90 minutes, and all participant responses were recorded on laptop computers. The majority of interviews were conducted in the homes of the respondents. Those not conducted in the home of the respondents were conducted immediately outside of the respondent's residence, inside a parent's residence (if the respondent has a separate residence), immediately outside a parent's residence (if the respondent has a separate residence), in the interviewer's car, or another location.

Measures

The Add Health Wave III includes a total of 1,831 variables. In the following section, I include only the measures that were used in the secondary analysis.

Independent variable.

Respondent skin tone (Variable "H3IR17" in Add Health). Skin tone was assessed with one item: "*What is the respondent's skin color?*" Interviewers were instructed to provide their judgments by indicating whether the respondent's skin color appeared to be: black, dark brown, medium brown, light brown, or white.

Dependent variables.

Mental healthcare utilization (Variable “H3HS22” in Add Health). Mental Healthcare utilization was assessed by one item: “*In the past 12 months have you received psychological or emotional counseling?*” Respondents were instructed to answer yes or no.

Reasons for not seeking healthcare (Variables “H3HS8A” – “H3HS8O” in Add Health). This construct was assessed with the question: “*What kept you from seeing a health professional when you needed to?*” Respondents were instructed to select all reasons from the following list for each of the medical conditions they reported earlier in the interview: (1) Didn’t know who to go see; (2) Had no transportation; (3) No one was available to go along; (4) Parent or guardian would not go along; (5) Didn’t want parents to know; (6) Difficult to make an appointment; (7) Afraid of what the doctor would say or do; (8) Thought the problem would go away; (9) Couldn’t pay; (10) Didn’t have time; (11) Thought the doctor would tell your partner/husband or wife; (12) Too embarrassed; (13) Thought the doctor would report something to the police or other legal authorities; (14) Didn’t think the doctor could help; and (15) Other. The present secondary analysis exclusively focused on respondents’ answer (i.e., yes/no) to the 7th reason on the list (i.e., Variable: H3HS8G- “Afraid of what the doctor would say or do”) for their mental health issues.

Potential Control variables.

Age (Variable “CALCAGE3” in Add Health). Respondents were asked to confirm their birthdate. Age was calculated by subtracting the current year from the birth year the respondent reported. Age has been found to be associated with mental healthcare utilization (Shapiro et al., 1984; Wang et al., 2005).

Gender (Variable “BIO_SEX3” in Add Health). Gender was defined in this study as the respondent’s biological sex. Response options were male or female. Previous research suggests that women are more likely than men to seek healthcare services (Fleury, Ngui, Bamvita, Grenier, & Caron, 2014; Smith et al., 2013).

Income (Variable “H3EC3” in Add Health). Respondents’ income was assessed with the question: “*What is your best guess of your total household income before taxes?*” Response options were: 1) less than 10,000; 2) \$10,000 to \$14,999 3) \$15,000 to \$19,999; 4) \$20,000 to \$29,999; 5) \$30,000 to \$39,999; 6) \$40,000 to \$49,999 7) \$50,000 to \$74,999 8) \$75,000 or more. Higher income has been found to be associated with greater utilization of mental healthcare (Fleury, Grenier, Bamvita, & Caron, 2014; Wray, Dvorak, & Martin, 2013).

Education (Variable “H3ED1” in Add Health). Education was assessed with one question: What is the highest grade or year of regular school you have completed? Response options included all grade years from 6th grade to 5 or more years of graduate school. Prior research has shown that higher education is associated with greater mental healthcare utilization (Kim, Cho, Park, & Park, 2015).

Depression in Past 7 days (Variable “H3SP9” in Add Health). Mental health problems were assessed using several questions. The question of interest in this current analysis was: “*You were depressed, during the past seven days.*” Response options included: (0) Never or rarely; (1) Sometimes; (2) A lot of the time; 3) Most of the time and 4) all of the time. It has been suggested that those with higher instances of depression are more likely than those with lower instances of depression to seek healthcare services (Snell, Fernandes, Bujoreanu, & Garcia, 2014). Depression in the last 7 days was recoded into yes/no for the subsequent analyses.

Depression Diagnosis (Variable “H3ID15” in Add Health). In addition to examining respondents’ depression in the past 7 days, the current analysis also included whether respondents had a history of depression. This variable was assessed with the question: Have you ever been diagnosed with depression? Response options include: (0) No and (1) Yes.

Analysis Plan

Prior to running the main analyses, descriptive statistics were conducted, and the data were examined for missing data, distribution issues, and outliers. Scatterplots were generated to assess skewness, kurtosis, and linearity observed in the data. Each measure was checked for normality, linearity, and homoscedasticity. The nature of the relationships amongst the variables of interest were also assessed with a series of bivariate correlations. Factors that were significantly associated with either skin tone ratings and/or mental healthcare utilization were included in the main analyses as covariates.

Because the dependent variables were both dichotomous (i.e., yes/no), I conducted a logistic binomial regression analysis for each outcome. The first mental healthcare utilization item (Variable “H3HS22”) was coded as 0 (indicating no utilization) and 1 (indicating at least one instance of utilization), and the second item (Variables “H3HS8G”) was coded as 0 (indicating no concern about what the doctor would say) and 1 (indicating a concern about what the doctor would say). The control variables that were significantly associated with either skin tone ratings and/or mental healthcare utilization were entered in Step 1, and skin tone was entered in Step 2 of a logistic regression. The control variables included in Step 1 were: Gender, Education, Depression Diagnosis, and Depression in the last 7 days. The $\exp(B)$ value was used to assess the odds ratio of utilizing mental healthcare services as skin tone ratings increase by one unit.

Results

Descriptive Statistics

Examinations of skewness, kurtosis, and distribution figures indicated that all variables were normally distributed. Table 1 presents the means and frequency of each major variable included in the analysis. The interviewers reported that 85.1% of participants had a skin tone that was Black, Dark Brown, or Medium Brown, while 14.9% of participants had a skin tone that was Light brown or White. 94.3% of the sample reported an income of \$29,000 or lower, which likely reflects the respondents' ages (almost 80% were 23 or younger), and 52.4% of the sample reported having completed at least one year of college or more. Of the 1,211 Black respondents included in the current analysis, 326 (26.9%) people reported depressive symptoms in the past 7 days, yet only 78 (23.9%) of those people reported a depression diagnosis. This suggests that there may be barriers to depression diagnosis, one of which is lack of mental healthcare utilization. Table 2 presents mental health outcomes and mental healthcare utilization categorized by skin tone.

Table 3 presents correlations among main variables in Study 1. Consistent with previous research, there was a significant association between skin tone and education, such that individuals with lighter skin tone, compared to those with darker skin tone, were more likely to report higher education. Interestingly, the association between education and mental healthcare utilization was negative, indicating that individuals with greater education were less likely to utilize mental healthcare services. Mental healthcare utilization was also associated with gender and depression diagnosis. Specifically, consistent with previous research, women, compared to men, and those with a depression diagnosis, compared to those without a depression diagnosis, were more likely to utilize mental healthcare services.

Table 1. Demographic Characteristics of the Black Young Adults for Study 1

Characteristics	<i>M (SD) or N (%)</i>
Age	21.82 (1.86)
Gender	
Female	684 (56.5%)
Male	527 (43.5%)
Education (Highest Grade Completed)	
Did Not Complete High School	156 (12.8%)
Completed High School	421 (34.8%)
Completed some college	472 (39.0%)
Completed 4 years or more	145 (12.0%)
Completed at least 1 year of graduate school	16 (1.3%)
Income	
Less than \$10,000	116 (55.2%)
\$10,000 - \$14,999	35 (16.7%)
\$15,000-\$19,999	21 (10.0%)
\$20,000 - \$29,999	26 (12.4%)
\$30,000 - \$39,999	6 (1.0%)
\$50,000 - \$74,999	2 (0.5%)
\$75,000 or more	1 (1.4%)
Skin Tone	
Black	337 (27.8%)
Dark Brown	319 (26.3%)
Medium Brown	375 (31.0%)
Light Brown	164 (13.5%)
White	16 (1.3%)
Mental Healthcare Utilization	
No	1150 (95.0%)
Yes	61 (5.0%)
Afraid of what the doctor would say/do	
Not Marked	246 (89.5%)
Marked	29 (10.5%)
Depression Diagnosis	
No	1130 (93.5%)
Yes	78 (6.5%)
Depression Symptoms	
No	880 (73.0%)
Yes	326 (27.0%)

Table 2. Mental Health and Mental Healthcare Utilization by Skin Tone

Characteristics	<i>N</i> (%)
Mental Healthcare Utilization (% Yes)	
Black	10 (3.0%)
Dark Brown	20 (6.3%)
Medium Brown	20 (5.3%)
Light Brown	8 (4.9%)
White	3 (18.8%)
Depression in Last 7 days (% Yes)	
Black	88 (26.3%)
Dark Brown	95 (29.9%)
Medium Brown	89 (23.8%)
Light Brown	46 (28.0%)
White	8 (50.0%)
Depression Diagnosis (%Yes)	
Black	17 (5.0%)
Dark Brown	22 (6.9%)
Medium Brown	22 (5.9%)
Light Brown	15 (1.8%)
White	2 (12.5%)
Of those with Depression Diagnosis, Mental Healthcare Utilization (%Yes)	
Black	6 (35.3%)
Dark Brown	11 (50.0%)
Medium Brown	7 (31.8%)
Light Brown	5 (33.3%)
White	2 (100%)
Of those with Depression Symptoms, Mental Healthcare Utilization (%Yes)	
Black	6 (6.8%)
Dark Brown	10 (10.5%)
Medium Brown	8 (9.0%)
Light Brown	5 (10.9%)
White	2 (25.0%)
Of those with Depression Symptoms, Depression Diagnosis (%Yes)	
Black	11 (12.5%)
Dark Brown	13 (13.8%)
Medium Brown	12 (13.6%)
Light Brown	10 (21.7%)
White	2 (25.0%)

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Table 3. Correlations among all main variables for Study 1

	2	3	4	5	6	7	8	9
1. Age	-.073*	.164**	.263**	-.016	-.039	-.014	-.019	-.012
2. Gender	—	-.086**	.114	-.119**	-.057*	-.025	-.088**	-.047
3. Education		—	.106	.109**	-.079**	-.062	-.054	-.145**
4. Income			—	-.004	-.046	-.127	.106	-.085
5. Skin Tone (Interviewer-Reported)				—	.050	-.006	.046	.008
6. Mental Healthcare Utilization					—	.035	.421**	.124**
7. Afraid of what the doctor would say/do						—	.077	.004
8. Depression Diagnosis							—	.205**
9. Depression Symptoms								—

Note. * indicates $p < .05$, and *** indicates $p < .001$.

Main Hypothesis Testing

Logistic binominal regressions revealed that, when including the specified control variables (i.e., Gender, Education, Depression Diagnosis and Depression in the last 7 days), skin tone did not significantly predict mental healthcare utilization ($B = .180, SE = .137, p = .189$) or whether a participant would be afraid of what the doctor would do or say ($B = .008, SE = .183, p = .967$; see Table 4). However, in order to better understand the relation between skin tone and mental healthcare utilization in Black Americans, two follow-up analyses were conducted. The first follow-up analysis controlled for Gender, Education, and Depression Diagnosis (Table 5). This analysis examined whether individuals with lighter skin tone would utilize mental healthcare more or less than those with darker skin tone regardless whether they have been experiencing depressive symptoms in the past seven days. Neither the main effect of skin tone predicting mental healthcare utilization ($B = .180, SE = .137, p = .178$) nor being afraid of what the doctor would do/say ($B = .009, SE = .182, p = .959$) was significant, indicating that there is no evidence that skin tone predicts whether individuals utilize mental healthcare services above and beyond depression diagnosis ($B = 3.035, SE = .323, p < .001$). This suggests that once diagnosed with depression, there is no evidence that skin tone predicts mental healthcare utilization.

The second follow-up analysis controlled for Gender, Education and Depression in the past 7 days (Table 6). This analysis examined whether individuals with lighter skin tone would utilize healthcare more or less than those with darker skin tone regardless whether or not they have a diagnosed depression. The analysis revealed that above and beyond depressive symptoms, the main effect of skin tone predicting mental healthcare utilization was marginally significant ($B = .215, SE = .124, p = .082$). An examination of the odds ratio indicates that for every 1 unit

Table 4. Logistic Binomial Regression: Skin Tone Predicting Mental Healthcare Utilization controlling for Gender, Education, Depression Diagnosis and Depression Symptoms

	Mental Healthcare Utilization						Afraid of What the Doctor would do or say					
	B	S.E.	Wald	Exp (B)	95% C.I.for Exp (B)		B	S.E.	Wald	Exp(B)	95% C.I.for Exp (B)	
					Lower	Upper					Lower	Upper
Gender	-.304	.321	.895	.738	.393	1.385	-.167	.413	.163	.847	.377	1.902
Education	-.202	.086	5.487*	.817	.690	.968	-.108	.109	.985	.898	.725	1.111
Depression Diagnosis	3.035	.323	88.496***	20.796	11.050	39.136	.624	.532	1.376	1.867	.658	5.298
Depression Symptoms	.219	.321	.467	1.245	.664	2.337	-.198	.433	.210	.820	.351	1.917
Skin Tone	.180	.137	1.728	1.197	.915	1.566	.008	.183	.002	1.008	.704	1.441
Constant	-1.415	1.169	1.466	.243			-.695	1.485	.219	.499		

Note. * indicates $p < .05$, and *** indicates $p < .001$.

Table 5. Follow-up Analysis #1: Skin Tone Predicting Utilization controlling for Gender, Education, Depression Diagnosis

	Mental Healthcare Utilization						Afraid of What the Doctor would do or say					
	B	S.E.	Wald	Exp (B)	95% C.I.for Exp (B)		B	S.E.	Wald	Exp(B)	95% C.I.for Exp (B)	
					Lower	Upper					Lower	Upper
Gender	-.311	.321	.937	.733	.391	1.375	-.183	.413	.197	.833	.371	1.867
Education	-.214	.085	6.397*	.803	.684	.953	-.100	.107	.875	.905	.734	1.116
Depression Diagnosis	3.115	.304	104.795***	25.525	12.408	40.893	.550	.550	1.191	1.733	.646	4.652
Skin Tone	.180	.137	1.814	1.203	.919	1.573	.009	.182	.003	1.009	.706	1.442
Constant	-1.415	1.128	1.162	.296			-.871	1.429	.371	.419		

Note. * indicates $p < .05$, and *** indicates $p < .001$.

Table 6. Follow-up Analysis #2: Skin Tone Predicting Utilization controlling for Gender, Education, Depression Symptoms

	Mental Healthcare Utilization						Afraid of What the Doctor would do or say					
	B	S.E.	Wald	Exp (B)	95% C.I.for Exp (B)		B	S.E.	Wald	Exp(B)	95% C.I.for Exp (B)	
					Lower	Upper					Lower	Upper
Gender	-.523	.289	3.281†	.593	.337	1.044	-.202	.409	.245	.817	.367	1.820
Education	-.194	.077	6.381*	.823	.708	.957	-.115	.108	1.129	.892	.722	1.102
Depression Symptoms	.955	.270	12.494***	2.598	1.530	4.410	-.049	.407	.015	.952	.428	2.114
Skin Tone	.215	.124	3.3031†	1.240	.973	1.581	.011	.183	.004	1.011	.706	1.447
Constant	-1.141	1.030	1.226	.320			-.567	1.463	.150	.568		

Note. † indicates $p < .10$, * indicates $p < .05$, and *** indicates $p < .00$

increase in skin tone, the odds of utilizing mental healthcare services are 1.24 times more. As skin tone gets lighter, the odds of utilizing mental healthcare services increases. Furthermore, probability of mental healthcare utilization was computed for dark-skinned participant (1 standard deviation below), medium-skin tone participant (average) and light-skinned participant (1 standard deviation above). The results indicate that the probability of utilizing mental healthcare services is approximately 20% for dark-skinned participants [$e^{-1.36976} / (1 + e^{-1.36976})$], 24% for brown-skinned participants [$e^{-1.141} / (1 + e^{-1.141})$], and 29% for light-skinned participants [$e^{-0.91224} / (1 + e^{-0.91224})$]. Additionally, the same follow-up analysis predicting participant fear about what the doctor would say or do revealed that, above and beyond depressive symptoms, there was no main effect of skin tone ($B = .011, SE = .183, p = .952$). Taken together, these findings suggest that without a diagnosis of depression, skin tone may play a more important role in predicting whether they utilize mental healthcare services.

Study 2: Experimental Study

The goals of Study 2 were to examine (1) whether there is a significant association between individuals' strength of Afrocentric features and use of mental healthcare services in a sample of Black college students and (2) whether Black college students prefer to see a Black counselor who shares similar strength of Afrocentric features with them more than other Black mental healthcare professionals. It consisted of a survey and a computer task. During the computer task, which was designed to assess students' preference of counselors, race (Black vs. White), gender (Male vs. Female), and physical features (Skin tone: Dark vs. Light; Facial features: Strong vs. Weak Afrocentric facial features) of the counselors were experimentally manipulated.

Participants

A convenience sample of 33 self-identified Black college students (90.6% women, age $M = 22.81$, $SD = 9.174$ ¹) were recruited via the VCU Department of Psychology Research Participation System and flyers distributed to psychology classes, over the course of 8 months. VCU's campus is racially diverse — 19% of 4,090 VCU incoming first-years in Fall 2015 identified as Black/African-American. Eligibility criteria for this study was as follows: (1) must be at least 18 years of age; (2) must self-identify as Black or African-American; and (3) must score at least mild on the short version of the Depression Anxiety Stress Scale (DASS-21). Based on my screening about 189 students were eligible for the study.

Procedure

Interested participants completed a prescreening survey, which asked about participants age, race, and mental health. Eligible participants were contacted via email and invited to take part in the lab study. Participants reported to the lab individually and were greeted by an Asian experimenter. It was important that the experimenter be neither Black nor White to decrease any possibility of the skin tone, facial features, or race of the experimenter affecting the participants' preference for counselors. Using non-Black and non-white experimenters reduced the chance of participants being primed to skin tone or facial features of Black and White Americans. Then, the experimenter instructed participants to read the consent form carefully and answered any question participants had before they signed a consent form. After obtaining informed consent, experimenters explained to the participants the reason they were invited to our

¹ There were three participants over the age of 40. Gender proportion and mean age without those two participants are 90.6% women, age $M = 19.92$ ($SD = 3.309$).

lab. The cover story was used to disguise the true nature of the experiment. Specifically, participants were informed that our lab is participating in a multi-lab project (in collaboration with labs from Psychology, Education, Social Work, Nursing, Family Medicine, and Engineering) funded by the State of Virginia. The goal of the project is to develop a university-wide online platform allowing VCU students to talk to counselors on the Internet 24/7 because prior research has consistently shown that the majority of college students experience stress at least once during their college lives. VCU and the State of Virginia understand that providing students with psychological resources is essential for student success in higher education. Finally, participants were informed that the purpose of today's study is to listen to the students' opinions of the counselors who have been selected as the finalists after the several rounds of interviews and screenings. Participants were informed that we were interviewing counselors from all over the country to be a part of our new online platform and that their input is crucial to our hiring process. Thus, participants were encouraged to be as honest as possible.

After hearing the cover story, participants were directed to a website where they saw a list of 16 counselors and their educational backgrounds. After thoroughly reviewing the website, participants completed a survey designed to assess their preference of counselors. Participants were provided with one picture at a time with their bio, including their educational background, and asked to answer questions about the counselors' approachability, trustworthiness, and ability based on the bio. After rating each counselor, participants were asked to choose which of the 16 counselors they would like to see to explain their decisions. After answering questions regarding counselor preferences, participants completed a series of measures, including those that were designed to assess general demographic questions, whether they had experienced symptoms of

depression, anxiety or stress, and what services they have received (or were currently receiving) to address those symptoms.

Because the current study used deception, prior to the debriefing of participants, the experimenter probed to find out whether participants were aware of the goals of the current research study. Specifically, participants were asked what they thought the goal of the current research study was and whether they found anything unusual or confusing about the study. According to the probing forms completed by RAs, no participants expressed suspicion that warranted exclusion. Although there were a few participants who mentioned skin tone or hair texture, those who mentioned skin tone or hair texture were confused about why those questions were asked during the study. After the researcher determined whether the deception worked as intended, participants were debriefed. In the debriefing, it was first explained to the participants why the deception was necessary. Next, participants were informed about the true purpose of the study as well as the specific research questions the study addresses.

After the debriefing, participants were asked to participate in a feature assessment session in order to obtain their skin tone and facial feature information in later analyses. Specifically, participants were asked to make a neutral face, happy face, angry face for a photograph. These photographs were later used to assess Afrocentric facial features. This was done by obtaining four pieces of facial information (i.e., facial width and length, nose width, and lip thickness). Lip ratios was computed by dividing lip thickness (total length of lips from top to bottom lip) by overall face length, while nose ratios was computed by dividing nose width (total width from left side of nose to right side at the nostrils) by overall face width.

After the photo-taking session, in order to obtain objective measures of skin tone, we obtained luminosity values from the participants' faces using a portable spectrophotometer (the

HunterLab MiniScan EZ 4000L). Specifically, four readings were collected from the participant faces: both cheeks, forehead and chin. We computed an average luminosity from the four readings to obtain a single score representing skin tone. Higher luminosity values were indicative of lighter skin tone. Portable spectrophotometers have been used successfully in the previous studies (Borrell, Kiefe, Williams, Diez-Roux, & Gordon-Larsen, 2006; Krieger, Sidney, & Coakley, 1998).

At the end of the session, participants were thanked for their participation and asked to sign a picture release form. Completion time for the entire study was estimated to be about 60 minutes, but in actuality, most sessions lasted 30 to 45 minutes. Upon completion of the study, participants received 1.00 credits from SONA for participation in the current study.

Stimuli

Photographs used to represent the 16 counselors in the present study were obtained from the Chicago Face Database (Ma, Correll, & Wittenbrink, 2015). Specifically, in Step 1, I obtained all available faces for four social categories: Black men, Black women, White men, and White women. In Step 2, the average facial features within each of the four social categories was obtained. Specifically, first I measured four facial features within a given face: (1) face length, (2) face width, (3) lip thickness, and (4) nose width. Then, for each face, I computed a lip ratio (lip thickness/face length) and a nose ratio (nose width/face width). Finally, I computed *Ms* and *SDs* of lip and nose ratios for each of the four social categories. In Step 3, four faces were selected for each of the four social categories based on skin tone: two with the darkest skin tone, two with the lightest skin tone. In order to select the faces, I first obtained luminosity value from 12 different locations within a given face using Photoshop 6. Then, a single skin tone score was calculated by averaging the 12 luminosity values for each face. Then, faces with the two highest

and the lowest average scores were selected for the four social categories, resulting in a total of 16 pictures.

In Step 4, I manipulated facial features of the 16 selected pictures. Using Photoshop Cs6, I changed the noses and lips of the faces with the highest and lowest average skin tone scores from each of the four social groups (i.e., a total of eight faces) to create faces with strong Afrocentric facial features. Specifically, I changed a nose to $+1SD$ nose ratio and lips to $+1SD$ (by using the group M s and SD s within each social category, as opposed to a grand M and SD of all faces). Next, I changed the noses and lips of faces with the second highest and the second lowest average skin tone scores from each of the four social groups (i.e., a total of eight faces) to create faces with weak Afrocentric facial features. In order to create a face with weak Afrocentric features, I manipulated a nose to $-1SD$ nose ratio and lips to $-1SD$. This resulted in a final set of 16 faces that vary in race (Black vs. White), gender (Men vs. Women), skin tone (Dark vs. Light), and facial features (Strong vs. Weak Afrocentric features).

Measures

Independent variables

Participant Reported Skin Tone. In addition to the objective assessment of Afrocentricity described above, we obtained participants' self-reports of Afrocentricity via an adapted version of the Self-Report Skin Tone Measure (Reeder, Hammond, & Gray, 2010) as part of the computerized survey. The first item was "How would you describe your natural, untanned skin color at the end of winter? (Please circle only one number)." Responses to this item were recorded on a 5-point scale. Response options included: (1) Black; (2) Dark Brown; (3) Medium Brown; (4) Light Brown; and (5) White. This measure was adapted to match the response options to that of the Add Health Study in order to be consistent and to allow for the

comparison between Add health and the current study. There is evidence to suggest that the items used here are both valid and reliable (Reeder, Hammond & Gray, 2010). Participants were also asked to respond to an item: “In the past week (7 days) have you used a sun-bed or spray-on tan lotion?” Responses for this question were yes or no. This question was used to determine if any participant should be excluded from the analyses as use of a sun-bed/spray-on could bias the readings of the spectrophotometer. However, no participants reported using sun-bed or spray-on tan lotion.

Interviewer rated skin tone. Skin tone was also assessed with a question for the interviewer regarding the skin tone of the participant. The question was “What is the respondents’ skin color? Responses will include: (1) Black; (2) Dark Brown; (3) Medium Brown; (4) Light Brown; and (5) White. This question was directly from the Add Health Survey (Harris & Udry, 2016).

Luminosity. Skin tone was also assessed with a spectrophotometer. Higher luminosity values were indicative of higher light reflectance suggesting lighter skin tone.

Dependent variables.

Choice of counselor. Choice of counselor was assessed in two ways. First, students received a picture of each individual counselor and indicated the extent to which they agree with the statement the following statements: (1) This counselor seems approachable; (2) This counselor seems trustworthy; (3) This counselor seems that he/she would be able to relate to the issues I am having; (4) This counselor seems likeable and (5) I would be willing to seek help from this particular counselor. Responses were recorded on a five-point scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). A composite score for each counselor was computed by averaging the five scores, with higher numbers indicating more positive perceptions of the

counselor ($\alpha = .23-.88$). Second, all counselors were displayed at once and students were asked to indicate which counselor they preferred to see. The first measure allowed us to assess more nuanced variability in participants' evaluations of each counselor, whereas the second measure allowed us to assess the selection process, which was most akin to how they would choose any healthcare provider in the real world.

Mental healthcare utilization. Mental healthcare utilization was assessed using 4 questions. The first question was: In the past 12 months have you received psychological or emotional counseling? Responses included: (1) Yes, (2) No and (3) Don't Know. This question is directly from the Add Health Survey (Harris & Udry, 2016). The next question was: "How many times in the past 12 months have you received psychological or emotional counseling?" Responses for this item was coded on a 6- point scale: 0 indicating that the participant has not received any psychological or emotional counseling and 5 indicating the participant has received psychological or emotional counseling 5 or more times in the past 12 months. If respondents indicate that they have received psychological or emotional counseling in the past 12 months, they were asked to indicate whether they received mental healthcare services on or off campus and what the specific source of the care was (e.g., University Counseling Services).

Control variables.

Symptoms of Depression, Anxiety, and Stress. Symptoms of depression, anxiety and stress were assessed using the shortened version of the Depression Anxiety Stress Scale-21 short form (DASS-21; Henry & Crawford, 2005). Respondents were asked about the presence of a symptom over the previous week. Items were scored on a 4-point scale from 0 (Never) to 3 (Almost Always). The DASS-21 assesses the severity of a range of symptoms common to both Depression and Anxiety. The DASS-21 is not a tool for clinical diagnosis and DASS-21 has no

direct implication for the allocation of patients into discrete diagnostic categories. DASS-21 has severity labels used to describe the full range of scores in the population. Additionally, the DASS-21 has been used across racial groups (Norton, 2007). It is important to assess symptoms of depression, anxiety and stress because Black students, especially those with stronger Afrocentric features, would be expected to report more symptoms than their white counterparts, but would still be less likely to utilize healthcare services. Composite scores were computed in accordance with the DASS-21 guidelines (Gomez, 2002). Total scores for the three constructs (Depression, Anxiety and Stress) were calculated as the sum of scores for the corresponding seven items multiplied by two. There were 7 items for the depression ($\alpha = .90$), anxiety ($\alpha = .87$), and stress ($\alpha = .62$) subscales, respectively.

Demographic information. Participating undergraduates' self-reported their age, gender, class standing (year in school), family income, and parents' education, which have been found to be associated with healthcare utilization in general (Burnett-Zeigler & Lyons, 2010; Smith et al., 2013; Wang et al., 2005).

Analysis Plan

Prior to running the main analyses, descriptive statistics were conducted to assess the basic characteristics of the data and to test assumption violations for normality, linearity, and homoscedasticity. Additionally, bivariate correlations were conducted among all variables in order to identify control variables that were significantly associated with the predictor (i.e., participant Afrocentricity) and/or the outcomes (i.e., past healthcare utilization, ratings of counselors, and selection of counselor). Examination of the correlations indicated a full model should be run with no covariates.

Again, the goals of Study 2 were to test: (1) whether there was a significant association between individuals' strength of Afrocentric features and use of mental healthcare services in a sample of Black College students and (2) whether Black college students preferred to see a Black counselor who shares similar strength of Afrocentric features with them more than other Black counselors. To address the first goal of Study 2, I conducted three separate logistic binomial regressions to assess whether each of the three measures of skin tone (i.e., Participant Reported Skin tone, RA reported Skin tone, and Luminosity) predicted mental healthcare utilization (i.e., yes = 1/no = 0). Each regression included the main effect of lip ratios, nose ratios, skin tone, and all possible interaction terms among the three variables. The $\exp(B)$ value was used to assess the odds ratio of utilizing mental healthcare services as skin tone ratings increase by one unit.

To address the second goal of the Study 2 of the present study (i.e., whether Black Americans prefer to see counselors with skin tone and features similar to their own), a multilevel regression analysis was conducted to examine counselor preference in Black undergraduates. Multilevel modeling was used for two reasons: (1) there were non-independence in data (i.e., counselors nested within participants); and (2) multilevel modeling approach is superior to multivariate regression particularly when the upper-level sample size is small (i.e., participants in the context of the present study). In order to run multilevel regressions, the dataset was restructured to have 16 separate rows, each representing participant ratings for 16 counselors, for each participant. Before being entered into the model, counselor skin tone and facial features were dummy-coded (dark = 0, light = 1; strong = 0, weak = 1), and participant skin tone and facial features were grand-mean-centered. In the first model, we included counselor skin tone, counselor facial features, participant luminosity, participant lip ratio, and participant nose ratios as predictors and the interactions between all of the predictors as fixed variables. This model

revealed that participant lip and nose ratios did not have significant effect on overall counselor preference, so they were excluded from further analyses. The final model included the main effects of counselor facial features, counselor skin tone, and participant luminosity and all possible higher-order interactions among those three factors.

Results

Descriptive Statistics

Examinations of skewness, kurtosis, and distribution figures indicated that all variables were normally distributed. 73% of the sample chose Black counselors suggesting that overall this particular sample preferred to seek help from Black counselors rather than White Counselors. 62.6% of participants self-identified as having Dark Brown or Medium Brown skin tone. 53.2% of the sample reported a parental income of \$50,000 or greater and 48.4% of the sample reported a parental education of Bachelor's degree or higher. Consistent with prior research, of the 33 Black respondents included in the current analysis, 24 people reported depressive symptoms in the past 7 days, yet only 5 people reported utilizing mental healthcare. Of those 5 people, only 2 reported using University Counseling Services. These findings highlight the limitation with the current data, particularly predicting the association between individuals' strength of Afrocentric features and use of mental healthcare services. Table 7 presents demographic characteristics of the sample for Study 2.

Table 8 presents the correlations among main study variables for Study 2. There was a significant correlation between Participant Reported skin tone and RA Reported skin tone ($r = .826, p < .001$). However, there was not a significant correlation between Participant Reported

Table 7. Study 2 Participant basic demographic characteristics for Study 2

Characteristics	<i>M (SD) or N (%)</i>
Age	22.81 (9.174), ranged 18-55 (6 missing)
Gender	
Female	29 (9.4%)
Male	3 (90.6%)
Parental Education	
GED or high school equivalency degree	2 (6.3%)
High school diploma	7 (21.9%)
Associate or junior college degree	7 (21.9%)
Bachelor's degree	7 (21.9%)
Master's degree	8 (25%)
Doctoral degree or professional degree	1 (3.1%)
Parental Income	
Less than \$10,000	3 (9.4%)
\$10,000 - \$14,999	1 (3.1%)
\$15,000-\$29,999	1 (3.1%)
\$30,000 - \$39,999	5 (15.2%)
\$40,000 - \$49,999	5 (15.2%)
\$50,000 - \$74,999	7 (21.2%)
\$75,000 or more	10 (30.3%)
Participant-Reported Skin Tone	
Black	2 (6.1%)
Dark Brown	6 (18.2%)
Medium Brown	14 (42.4%)
Light Brown	9 (27.3%)
White	1 (3.0%)
Depression Symptoms	
No	9 (27.3%)
Yes	24 (72.7%)
Mental Healthcare Utilization	
No	27 (84.4%)
Yes	5 (15.6%)

Table 8. Correlations among main variables in Study 2

	2	3	4	5	6	7	8	9	10
1. Age	-.298	-.561**	.076	.092	.136	-.021	-.168	-.178	-.226
2. Parental Education	—	.417*	.039	.141	-.012	.108	-.098	.219	.218
3. Parental Income		—	.116	.170	-.218	.373*	.119	.053	.208
4. Participant-reported Skin Tone			—	.826**	.254	.102	-.173	.044	-.173
5. RA-reported Skin Tone				—	.305	.121	-.194	-.037	-.137
6. Luminosity					—	.032	-.173	-.172	.095
7. Lip Ratios						—	.056	-.042	.488**
8. Nose Ratios							—	.204	.216
9. Depression Symptoms								—	-.101
10. Mental Healthcare Utilization									—

Note. † indicates $p < .10$, * indicates $p < .05$, and ** indicates $p < .01$.

Skin tone and Luminosity ($r = .254, p = .161$), or RA Reported skin tone and Luminosity ($r = .305, p = .089$).

Predicting Mental Healthcare Utilization

Given the small sample size, the present analysis was grossly underpowered; logistic binominal regressions revealed that none of the three measurements of skin tone significantly predicted mental healthcare utilization (see Tables 9-11): Participant Reported Skin tone ($B = -.178, SE = 1.073, p = .869$), RA Reported Skin tone ($B = -3.174, SE = 2.050, p = .122$), or Luminosity ($B = -.010, SE = .093, p = .918$).

Predicting Counselor Preferences and Evaluations

A multilevel regression revealed that as counselor skin tone became lighter, participants' overall positive perception of counselors decreased ($t = -1.980, SE = .070, p = .049$), indicating that participants reported less positive feelings toward counselors with lighter skin tone. Additionally, as counselor facial features became weaker, overall positive perception of counselors decreased ($t = -2.847, SE = .065, p = .005$), suggesting that participants reported less positive feeling towards counselors with weaker facial features. Additionally, as participant skin tone became lighter as measured by luminosity, overall positive perceptions of counselors decreased ($t = -2.472, SE = .001, p = .017$). This result suggests that participants with lighter skin tone reported less positive feeling towards counselors in general, as compared to participants with darker skin tone. Taken together, these preliminary findings suggest that Black participants preferred counselors with darker skin tone and strong Afrocentric facial features compared to those with lighter skin tone and weaker Afrocentric facial features overall.

Table 9. Participant-reported skin tone predicting mental healthcare utilization

	B	S.E.	Wald	Exp (B)	95% C.I. for Exp (B)	
					Lower	Upper
Participant-Reported Skin Tone	-.178	1.073	.027	.837	.102	6.860
Lip Ratios	74.550	42.361	3.097†	2.38E32	.000	2.718E68
Nose Ratios	4.449	53.066	.007	85.561	.000	1.265E47
Participant-Reported Skin Tone X Lip Ratios	41.997	75.345	.311	1.73E18	.000	2.361E82
Participant-Reported Skin Tone X Nose Ratios	46.224	61.442	.566	1.21E20	.000	2.418E72
Lip Ratios X Nose Ratios	-422.021	2001.805	.044	.000	.000	.
Participant-Reported Skin Tone X Lip Ratios X Nose Ratios	-3962.766	4602.710	.741	.000	.000	.
Constant	-19.495	15.470	2.588	.000		

Note. † indicates $p < .10$

Table 10. RA-reported skin tone predicting mental healthcare utilization

	B	S.E.	Wald	Exp (B)	95% C.I. for Exp (B)	
					Lower	Upper
RA-reported Skin Tone	-3.174	2.050	2.396	.042	.001	2.327
Lip Ratios	123.160	72.794	2.863†	3.074E53	.000	2.819E115
Nose Ratios	-47.094	70.563	.445	.000	.000	4.076E39
RA-reported Skin Tone X Lip Ratios	-54.671	59.213	.852	.000	.000	4.560E26
RA-reported Skin Tone X Nose Ratios	109.358	88.317	1.533	3.117E47	.000	4.665E122
Lip Ratios X Nose Ratios	-263.204	3192.457	.007	.000	.000	.
RA-reported Skin Tone X Lip Ratios X Nose Ratios	-2383.083	4322.843	.304	.000	.000	.
Constant	-17.151	20.955	.670	.000		

Note. † indicates $p < .10$, and * indicates $p < .05$.

Table 11. Luminosity predicting mental healthcare utilization

	B	S.E.	Wald	Exp (B)	95% C.I. for Exp (B)	
					Lower	Upper
Luminosity	-.010	.093	.011	.990	.825	1.188
Lip Ratios	68.988	43.692	2.465	9.144E29	.000	2.316E67
Nose Ratios	17.628	38.378	.211	4529149	.000	2.104E40
Luminosity X Lip Ratios	-.910	5.020	.033	.404	.000	7556.653
Luminosity X Nose Ratios	4.527	4.676	.937	92.499	.000	883345.095
Lip Ratios X Nose Ratios	-109.419	1892.209	.003	.000	.000	.
Luminosity X Lip Ratios X Nose Ratios	-177.812	207.722	.733	.000	.000	3.89E99
Constant	-19.843	15.241	1.695	.000		

Discussion

Previous research has indicated that Black young adults are less likely to utilize mental healthcare compare to White young adults (Broman, 2012). Although several factors have been identified as contributors to the underutilization of mental healthcare services of Black Americans, no research to date has examined whether feature-based bias contribute to the mental healthcare utilization in Black Americans. The overall goals of the current study were to examine: (1) whether there was a relationship between degree of Afrocentricity and mental healthcare utilization in a nationally representative sample of young Black adults; (2) whether there was a relationship between degree of Afrocentricity and mental healthcare utilization in a sample of Black college students at large urban university; and (3) whether Black college students want to seek help from counselors with similar features to their own. To address these goals, two studies were conducted. The Study 1 was a secondary data analysis of Add Health, a nationally representative dataset of American adolescents. It was hypothesized that individuals with lighter skin tone would be more likely to utilize mental healthcare services compared to individuals with darker skin tone. The Study 2 consisted of primary data collection in the form of an experiment conducted at large university in the Southeast. It was hypothesized that: (1) Black students with weaker Afrocentric features would be more likely to have utilized mental healthcare services compared to Black students with stronger Afrocentric features; (2) Black students would have a greater preference to seek help from Black counselors than White counselors; and (3) Black students would have the greatest preference to see Black counselors with Afrocentric features that are similar to their own, compared to those that are dissimilar.

Contrary to our hypothesis for Study 1, there was no evidence that skin tone predicts mental healthcare utilization or whether a participant would express concerns about what a

doctor would do or say during their appointment, after controlling for depression diagnosis, which was a significant predictor of mental healthcare utilization. This finding suggests that utilization of mental healthcare services in Black Americans would primarily depend on whether or not they were diagnosed with depression and that, once diagnosed with depression, individuals' Afrocentric features play little role in predicting healthcare utilization.

Interestingly, however, a follow-up analysis with depressive symptoms, as opposed to depression diagnosis, as a control variable revealed a pattern consistent with our prediction: the main effect of skin tone was marginally significant, such that as participant skin tone gets lighter, the probability of utilizing mental healthcare services also increases. This suggests that until individuals with symptoms of depression are diagnosed with depression, skin tone may play a more important role in mental healthcare utilization. In other words, Black young adults with darker skin tone were less likely than those with lighter skin tone to utilize mental healthcare services even when they were experiencing depressive symptoms. However, once they were properly diagnosed with depression, Black young adults with darker skin tone are as much likely as their counterparts with lighter skin tone to utilize mental healthcare services. These findings highlight yet another reason why it is crucial to accurately identify Black Americans with depression during their clinical care encounters.

It should be noted that the interpretations of the results from Study 2 should be made cautiously given that the data were grossly underpowered with $N = 33$. One interesting finding from our preliminary analyses is that luminosity was not significantly correlated with participant reported skin tone or RA reported skin tone. There are a few possible explanations as to why this is the case. One explanation may be that subjective assessment (i.e., self-reported and RA-reported) of skin tone may reflect a gestalt process. That is, the assessment of skin tone could be

affected by other information, such as hair texture, nose width, and lip thickness. For example, two individuals with the exact same skin tone could be rated to have different skin tones if one has more coarse hair, wider nose, and thicker lips than the other. In contrast, skin tone assessment made with a spectrophotometer is completely independent of other information. Future research should directly compare and contrast these three different measures of skin tone. Another potential explanation is that there was not adequate power to detect an association between subjective and objective assessment of skin tone due to the small sample size. As can be seen in Table 8, the correlation between RA reported skin tone and luminosity was marginally significant. With a larger sample, associations among all three measures of skin tone may become significant.

The small number of participants in Study 2 also prevented us from predicting mental healthcare utilization. Specifically, there were only five participants who reported utilizing any mental healthcare services. Additionally, our preliminary results provide little evidence that participant's or counselor's skin tone or facial features predict participants' choice of counselors. However, we did find that 73% of the sample chose Black counselors compared to 27% that chose White counselors. This is consistent with previous research stating that, generally, Black Americans prefer to seek care from Black healthcare providers (Townes, Chaves-Korrell & Cunningham, 2009). Examinations of participants' written responses to the open-ended question "Why did you choose this counselor?" also revealed a common theme. Specifically, many students emphasized their perceived shared background with their chosen counselors. One student wrote, "We have two things in common: We're both of color and we're both women." Two students wrote, "He is more of a reflection of me" and "I feel that he may have come from the same background causing him to have more of an understanding of what it is like to be in

college as a young African American.” These few quotes are indicative of what the many participants in the sample discussed in their open response questions that they were looking for someone who could relate to them and understand their perspective.

One obvious explanation for the present null results is our small sample. Our small number of participants did not allow me to fully test my hypotheses with sufficient power. However, with a larger sample size, we may be able to further capture potential within-race variability in counselor choices based on participants’ and/or counselors’ Afrocentric features. There are also theoretical explanations for the null results. Specifically, because of the current political climate in our country (i.e., continued killing of Black men and women by police officers and the rise of racialized hate crimes since Donald Trump became president) the racial divide is particularly salient, and people are extremely conscious about their racial group memberships (Staggers-Hakim, 2016; Southern Poverty Law Center, 2016). Thus, participants may identify with any Black counselor regardless of their differences in Afrocentric features. This is consistent with optimal distinctiveness theory that posits that there are competing needs in each person: the need to belong and need to be unique (Brewer, 1991). Individuals are often trying to find the balance between the two needs. In a time when racial tensions are high, Black individuals, whose racial group is the numerical minority, may have a lesser need for uniqueness and a greater need to identify with other racial ingroup members. Thus, it follows that Black young adults may prefer to see any mental healthcare provider that identifies as a part of their racial group. One way to empirically test this would be to assess and manipulate participants’ beliefs about the racial climate in our country.

Another potential theoretical explanation for the null findings is the lack of Black mental healthcare professionals. Only 3.9% of psychologists and 2.6% of therapists identify as

Black/African-American in 2010 (U.S. Bureau of Census & Labor Statistics, 2010) though as of July 2016, the estimated percentage of Black/African-Americans in the United States was 13.3% (U.S. Census Bureau, 2016). Because Black Americans are aware of the lack of Black healthcare professionals, they may not have the luxury of being selective about the features of their counselor, and they may incline to seek help from any Black counselor they can find. One way to test this second theoretical explanation is to assess and manipulate participants' beliefs about the number of Black mental healthcare professionals. In the manipulation, one group would be led to believe that Black mental healthcare providers are very limited and the other group that the number of Black mental healthcare providers is rapidly increasing.

Though there was no evidence to suggest that participant's or counselor's skin tone or facial features predicted participants' choice of counselors, it seems that Afrocentric features, particularly those of the counselor, seemed to matter even in a small sample of Black college students when predicting their perceptions of counselors. Specifically, the present findings showed participants expressed more positive perceptions toward counselors with darker skin tone and strong Afrocentric facial features compared to those with lighter skin tone and weaker Afrocentric facial features overall. It is critical to examine if the discrepancy between participants' ratings of counselors and their forced choice (i.e., counselor's skin tone and facial features matter for overall ratings but not for forced choice) would disappear with a larger sample in future research.

Limitations and Future Directions

As discussed earlier, one major limitation of the current study was the small sample size in Study 2. Although there were a relatively large number of students who were identified as eligible for the present study ($N = 189$), many students did not respond to my study invitation

emails. Unfortunately, this reflects a large issue faced by psychology researchers. The VCU Department of Psychology has been struggling with low enrollment rates for laboratory studies every semester because the majority of students prefer to fulfill their research participation requirements through online studies. Participants can complete online studies at their convenience and freely choose when and where to complete the studies. In contrast, for laboratory studies, students are required to report to a specific location at a specific time. In order to ensure that I have adequate statistical power to detect effects, I will continue data collection for Study 2. Additionally, in the continued data collection, another incentive (i.e., monetary compensation or raffles) will be employed to increase recruitment. This addition will also allow me to recruit individuals who are not registered on SONA.

Another limitation is that neither Study 1 nor Study 2 directly tested whether feature-based bias is the underlying mechanism for the present findings. That is, Study 1 did not allow me to examine whether individuals with lighter, as opposed to darker, skin tone tended to utilize mental healthcare service more because they expected less discrimination. Likewise, Study 2 did not allow me to examine whether participants generally preferred to see counselors with darker skin tone and stronger Afrocentric features because they expect less discrimination from those counselors. Although findings from the present studies are generally consistent with the predictions driven from the literature of feature-based discrimination, future research should directly investigate these underlying mechanisms in order to design evidence-based interventions that can improve mental healthcare utilization of Black Americans.

Conclusion

Black young adults are less likely than White counterparts to utilize mental healthcare services while in college even when the services are available to them free of charge or at low

cost. It is imperative to understand what kind of counselors Black college students would prefer to seek help from in order to reduce racial mental health disparities. Such information will help institutions to strategically create concrete plans of action to reduce racial mental health disparities. Although the present study had limited ability to fully test the main hypotheses due to its small samples, the preliminary results provide some evidence that Afrocentric features are associated with mental healthcare utilization in Black young adults. Future research should continue to examine the relationship between Afrocentric features and mental healthcare utilization and identify what Black Americans to seek in their mental healthcare providers.

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