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Vicarious experiences of major discrimination, anxiety symptoms, and mental health care utilization among Black Adults

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ABSTRACT

Background: The adverse mental health consequences of discrimination among Black adults, such as anxiety symptoms, are well documented. Prior research establishes anxiety as a risk factor for suboptimal health outcomes among Black adults. Most discrimination and mental health studies, however, have focused on the effects of personal experiences of discrimination. Moreover, of the studies that examine the mental health effects of vicarious exposure to discrimination, few investigate this relationship from a stress and coping perspective beyond the life stages of childhood and adolescence. Thus, the purpose of this study was to assess the effects of vicarious and personal experiences of discrimination on the subjective well-being of Black adults, while observing the potentially moderating effects of utilizing mental health care.

Methods: A subsample of Black adults ($N = 627$) between the ages of 22–69 years old were drawn from the Nashville Stress and Health Study and analyzed to assess within-group variation. Multivariate linear regression was employed to examine the association between vicarious experiences of major discrimination and self-reported anxiety symptoms. Additionally, we evaluated the moderating effects of lifetime utilization of mental health services on the relationship between discrimination and symptoms of anxiety.

Results: Findings revealed that vicarious experiences of major discrimination and personal experiences of everyday discrimination were both associated with higher levels of anxiety symptoms among the participants. Additionally, lifetime utilization of mental health care moderated the effects of vicarious and personal experiences of discrimination.

Conclusions: The secondhand consequences of discrimination must be considered while assessing the racism-related stress experience. Results from this investigation suggest that mental health treatment should be included in programs targeted to reduce the negative effects of discrimination among Black adults. Additionally, culturally-specific strategies should be considered for addressing racism-related adversity.

CRediT author statement

Myles Moody: Conceptualization, Methodology, Formal analysis, Writing-Original Draft, Writing-Review & Editing, Visualization. **Olivio Clay:** Methodology, Writing-Review & Editing, Supervision, Visualization. **Wesley Browning:** Writing-Original Draft, Writing-Review & Editing. **Monir Hossain:** Writing-Original Draft, Writing-Review & Editing.

1. Introduction

In 2020, years of heightened racialized tensions reached an apex as the Movement for Black Lives garnered the largest attendance for a political movement in United States history amid a global health pandemic. While tensions remain high, the mental health sequelae of continued structural racism (i.e., police violence) have been brought to the forefront as the American Medical Association, researchers, and others call for the reduction in harm to Black Americans and other racial minorities (Dreyer, 2020; Kelly et al., 2020; Sewell, 2020). Likewise, as technology has improved in recent years and social media has expanded its reach, Black people and other racialized minorities have increasingly had to endure exposure to videos and images of racist acts committed towards other Black Americans that may be distressing and traumatizing (Bailey et al., 2017; Stewart et al., 2019). Racism-related stress—the

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strain that racial and ethnic minorities endure resulting from the perceived racism that they experience within interpersonal, collective, cultural-symbolic, and sociopolitical contexts (Clark et al., 1999; Goosby et al., 2018; Harrell, 2000)—is an added stress burden that is unique to people of color, and it may threaten their health and well-being throughout every stage of the life course (Gee et al., 2012; Jones et al., 2020). A wealth of evidence has demonstrated significant associations between racism-related stressors (i.e., perceived discrimination) and poor mental health among Black Americans (Banks et al., 2006; Brondolo et al., 2009; Hudson et al., 2016; Kessler et al., 1999; Klonoff et al., 1999; Lewis et al., 2015; Miller et al., 2013; Pieterse et al., 2012; Williams and Mohammed, 2009). Systematic review (Pascoe and Smart Richman, 2009) has shown that out of 110 studies that examined perceived discrimination and mental health from 1987 to 2007, 105 of those studies found that discrimination was significantly associated with worse mental health outcomes. Another meta-analysis of research on racism and health (Paradies et al., 2015) found that out of 48 studies that examined the relationship between various measures of self-reported racism experiences and anxiety, 40 studies found a statistically significant association for this relationship. Yet, systematic review has also revealed that, until a few years ago, less than 20% of studies on racism and health in the last few decades had considered how *vicarious* exposure to discrimination may shape the mental health and subjective well-being of Black adults (Paradies et al., 2015).

Vicarious racism refers to the distressing "experiences of prejudice and discrimination that happen to members of one's family and close friends … as well as those involving strangers …" (*p*. 45, Harrell, 2000). While significant attention has been devoted to examining how individuals may be impacted by the experiences of members from their racial group who they may not know personally (e.g., Bor et al., 2018), perhaps as a result of heightened ethnoracial identification and perceptions of "linked fate" (Monk, 2020), it likely that these effects are magnified among group members who are within each other's social networks. Consistent with stress theory and the life course perspective (Elder, 1994; Pearlin, 2010), the racism-related stress framework asserts that the racism-related adversity that the people endure will likely affect those who share ties with those individuals (Harrell, 2000). Nevertheless, research that does not consider vicarious exposures to discrimination may underestimate the greater toll of the full racism-related stress experience, weakening our ability to target and develop adequate strategies for intervention (Gee et al., 2012; Heard-Garris et al., 2018). Furthermore, as burgeoning research continues to reveal how vicarious racism shapes physical health outcomes among Black Americans (Boulter et al., 2015: Colen et al., 2019; Daniels et al., 2020; Goosby and Heidbrink, 2013; Martz et al., 2019; McFarland et al., 2018; Quinlan et al., 2016), relatively limited focus has been given to examining how it may shape mental health and well-being (Bor et al., 2018; Chae et al., 2021; Heard-Garris et al., 2018; Holloway and Varner, 2021), particularly beyond childhood and adolescence, from a stress and coping perspective. Recent findings have emerged linking vicarious exposure to discrimination with lower levels of subjective well-being among Black adults (Moody, 2022), but more research is needed to determine what factors may buffer these effects on mental health.

The racism-related stress framework (Clark et al., 1999; Goosby et al., 2018; Harrell, 2000), largely informed by stress theory (Lazarus and Folkman, 1984; Pearlin et al., 1981), considers how racial and ethnic minorities' experiences of racism are linked to the racism-related vigilance (Hicken et al., 2018) and mental health consequences that they tend to endure over the lifespan (Gee et al., 2019; Jones et al., 2020; Thomas Tobin and Moody, 2021; Williams and Mohammed, 2009). Together, these frameworks suggest that several psychosocial resources—mastery, self-esteem, social support, as well as more culturally-relevant factors (i.e., John Henryism and racial identity)—may guide the stress appraisal process, and attenuate the negative effects of perceived discrimination (Brondolo et al., 2009; Clark et al., 1999). Prior research has evaluated and demonstrated the potentially buffering role of these resources for the relationship between personal experiences of discrimination and mental health (Hudson et al., 2016; Louie, 2020; Matthews et al., 2013; Miller et al., 2013; Watkins et al., 2011), but less is known about the relationship between vicarious exposures to unfair treatment and mental health after accounting for these resources. New findings show that while self-esteem appears to moderate the effects of vicarious discrimination on mental health (Louie and Upenieks, 2022), other psychosocial resources, such as mastery, do not. Additional work is required to better understand how the secondhand effects of discrimination may be attenuated by resilience resources.

Although more research is needed to elucidate the ways that stressors shape the wellness of Black Americans, important strides have been made to understand the underlying processes that are unique to this group. Despite Black Americans' higher levels of exposure to psychosocial stressors over the life course, largely as a result of racism (Brown, 2003; Gee et al., 2012; Williams et al., 2007), they tend to report similar or lower rates of psychiatric disorders relative to non-Hispanic Whites in the U.S. (Kessler et al., 2005). Researchers commonly refer to this peculiar phenomenon as the "race paradox" in mental health (Erving et al., 2018; Keyes, 2009; Louie and Wheaton, 2019; Mouzon, 2013; Thomas Tobin et al., 2020; Williams, 2018), and significant advancements have been made to clarify the nature of this occurrence. For example, research has maintained that Black Americans who do experience mental illness (i.e., anxiety, depression, etc.) are more likely to have more severe and debilitating symptoms that go untreated for longer periods of time relative to other groups (Thomeer et al., 2022; Walton and Shephard Payne, 2016; Williams et al., 2007). Studies have used community and nationally-representative data to show that despite the relatively lower levels of 12-month prevalence of anxiety disorders among Black adults, they tend to endure greater levels of disorder persistence and chronicity for anxiety compared to Whites in the U.S. (Breslau et al., 2005; Vilsaint et al., 2019). Furthermore, Black people who endure higher levels of psychological distress also face higher risk of co-occurring chronic health conditions (e.g., hypertension, heart disease, and diabetes) that may compound their mental health burden (Williams and Earl, 2007). Also, prior findings have indicated that measures of subjective well-being, such as anxiety symptoms, are strong predictors of mortality and longevity (Chida and Steptoe, 2008; Diener and Chan, 2011). Indeed, Black Americans consistently experience earlier onset of illness, more severe progression of disease, and lower life expectancy relative to their White counterparts (Braveman et al., 2011; Williams, 2012). Findings such as these underscore the significance of addressing mental health issues, such as anxiety, among Black Americans as a means for reducing racial inequities in health. However, Black Americans are still among the least likely to utilize mental health treatment services to reduce the poor outcomes that they endure (Cook et al., 2017).

Mental health care is generally understood to help individuals who may suffer from anxiety and other negative mental health outcomes (Lippens and Mackenzie, 2011; Sarteschi et al., 2011), but Black adults in the U.S. have significantly lower rates of utilization as a result of structural factors and stigma attached to addressing mental health concerns (Brown et al., 2010). But research that explicitly examines whether mental health care utilization actually moderates the anxiety symptoms that are potentially associated with vicarious racism among Black adults in particular is fairly limited, although strong recommendations for treatment strategies have been offered, including racial socialization in families for various life stages and collective coping strategies (Anderson et al., 2018; Anderson and Stevenson, 2019; Jones et al., 2020; Kelly et al., 2020; Planey et al., 2019; West et al., 2010). More research is needed, however, to further clarify whether mental health care may promote resilience for Black adults who are affected by the unfair treatment experienced by their loved ones.

To address the aforementioned limitations of previous studies, this study seeks to examine if, and how, vicarious experiences of discrimination (discrimination experienced by family members and friends) are

associated with anxiety symptoms among Black adults from a community sample. Then, we investigate the potential moderating effects of mental health care utilization on the relationship between discrimination and anxiety symptoms.

2. The present study

The overall goal of this study is to assess the effects of vicarious experiences of discrimination among Black adults from a stress and coping perspective. We address three main research aims. *First, we examine the association between vicarious experiences of discrimination and anxiety symptoms among Black adults*. The racism-related stress framework (Harrell, 2000; Heard-Garris et al., 2018) argues that vicarious exposure to discrimination may be stressful for racial and ethnic minorities, which is consistent with the "linked lives" perspective of life course and stress theory (Elder, 1994; Pearlin, 2010). However, limited research has tested these theories among Black adults. *Second, we evaluate whether vicarious experiences of discrimination have a unique effect on anxiety symptoms within the context of the stress and coping framework, which includes additional stressors and personal coping resources.* Previous research guided by the racism-related stress framework suggests that "discrimination should be assessed within this larger social context of the multiple stressful exposures within which it is embedded" (*p*.16, Williams and Mohammed, 2009; Williams et al., 1997), and adversity shaped by discrimination may contribute to the process of stress proliferation (Gee et al., 2012; Pearlin et al., 2005). Moreover, prior analyses of vicarious discrimination and health generally have not accounted for other social stressors, as well as psychosocial resources. *Third, we assess how mental health care utilization might moderate the potentially negative effects of discrimination and anxiety symptoms among Black adults*. While recommendations have been made regarding mental health treatment for minorities, fewer studies have investigated whether mental health care may moderate the relationship between vicarious racism-related adversity and mental health among Black adults. The present study offers a novel perspective on racism-related stress and provides new insights for intervention.

3. Methods

3.1. Sample

The Nashville Stress and Health Study (NSAHS) consists of a population-based sample of Black and non-Hispanic White adults (N = 1252) ages 22 to 69 from the city of Nashville and surrounding areas within Davidson County, Tennessee. A multistage, stratified sampling approach was utilized to obtain a random sample for this study. Households with Black individuals were oversampled, and a sampling weight allowed for generalizability of sample characteristics to the county population. American Association for Public Opinion Research (AAPOR) rates were used to evaluate success across screening and interviewing phases (*Response Rate 1* = 30.2, *Cooperation Rate 1* = 74.2, *Refusal Rate 1* = 30.2, and *Contact Rate 1* = 40.7). Respondents were interviewed between 2011 and 2014 about their personal and family backgrounds, stress and coping experiences, health behaviors, and health histories during 3-h computer-assisted interviews with study staff who were trained and matched to participants of the same race. Each participant provided informed consent. Study procedures were approved by the Vanderbilt University Institutional Review Board and have been described at length elsewhere (Brown et al., 2016; Turner, 2013; Turner et al., 2016). The present analyses include data from 627 respondents and characteristics for the subsample are provided in Table 1, and the measures that were used for this study are described in the following section along with the reliability coefficients for the present sample of Black adults.

Table 1
Sample characteristics, nashville stress and health study (2011–2014).

	(N = 627)	
	Mean (SD)	n (%)
Anxiety Symptoms [0–15]	4.17 (3.48)	–
Vicariously Experienced Discrimination		
Major Discrimination [0–9]	0.95 (1.14)	–
Personally Experienced Discrimination		
Major Discrimination [0–7]	1.19 (1.42)	–
Everyday Discrimination [0–34]	10.44 (5.84)	–
General Social Stressors		
Recent Life Events [0–15]	2.23 (2.24)	–
Chronic Stress [9–64]	30.86 (9.95)	–
Lifetime Trauma [0–27]	8.75 (5.12)	–
Psychosocial Characteristics		
Mastery [6–28]	19.62 (5.23)	–
Self-Esteem [7–24]	18.88 (2.08)	–
Social Support [3–48]	37.25 (9.92)	–
John Henryism [12–48]	37.22 (5.83)	–
Mental Health Treatment		
Never (Ref.)	–	86.78
At Least Once	–	13.22
Sociodemographic Characteristics		
Gender		
Women (Ref.)	–	54.90
Men	–	45.10
Age [22–69]	43.57 (11.21)	–
Education (Years) [0–25]	13.40 (3.08)	–
Household Income		
<$20,000	–	26.50
$20,000-$34,999	–	25.84
$35,000-$74,999	–	29.98
$75,000+	–	14.67
Socioeconomic Position (SEP) [2.93–1.68]	−0.47 (0.77)	–
Marital Status		
Unmarried (Ref.)	–	64.71
Married	–	35.29
Parental Status		
Non-Parent (Ref.)	–	22.24
Parent	–	77.76
Racial Identity [17–77]	63.90 (9.56)	–

Note: Ref. = reference category; ranges are included in brackets for continuous variables.

3.2. Measures

Anxiety. Anxiety was measured using a 5-item (α = 0.83) which asks respondents to report the levels by which they experience various symptoms of anxiety during the past month (Erving and Thomas, 2018). Examples of items include, "I felt worried over possible misfortunes," "I felt tense," and "I felt anxious." Response options were (0) not at all to, (1) somewhat, (2) moderately, and (3) very much. Items were summed such that higher scores indicate higher levels of anxiety symptoms.

Vicarious Discrimination. Vicarious experiences of major discrimination were assessed using the Major Experiences of Discrimination scale (Williams et al., 2008), which is a seven-item measure that considers lifetime exposure to major incidents of unfair treatment. Respondents were asked about whether they had experienced negative treatment such as "been unfairly fired or denied a promotion," "been unfairly treated by the police," and "been unfairly discouraged by teacher from pursuing a job/career." If they answered "Yes", respondents were then asked to whom the discrimination occurred: (1) self, (2) spouse, (3) child, (4) other relative, or (5) close friend. Responses that were recorded as "self" were excluded from this measure. The responses were summed such that higher scores indicated greater exposure to vicarious discrimination.

Personally Experienced Discrimination. Two forms of personally experienced discrimination were examined. *Major discrimination*, also based on the Major Experiences of Discrimination scale (Williams et al., 2008), assessed individuals' own lifetime experiences of major unfair treatment. This measure captured the personal experiences of major

discrimination of the respondents who answered "Yes" to items regarding unfair treatment, and "(1) self" to the question regarding who experienced the discrimination. The total count of "Yes" items were used to create a major discrimination score for each respondent. Higher values indicated higher exposure to personally experienced major discrimination. *Everyday discrimination* captures day-to-day experiences of unfair treatment and was measured using the Everyday Discrimination Scale (Williams et al., 1997). The Everyday Discrimination Scale (α = 0.85) was comprised of nine items such as "You are treated with less courtesy than other people" and "You receive worse service than other people at restaurants or stores." Respondents were asked to report the frequency with which these events occur: (0) never, (1) rarely, (2) sometimes, (3) often, and (4) almost always. Responses were summed such that higher scores indicated greater exposure to personally experienced everyday discrimination.

General Stressors. Exposure to other social stressors was captured through the measures of lifetime trauma, chronic strains, and recent life events. *Lifetime trauma* was indexed with a 43-item inventory that assesses the lifetime occurrence (0 = no, 1 = yes) of major and potentially traumatic stressors (Turner and Avison, 2003). The measure includes items related to both violent and non-violent stressors (e.g., parental divorce, failing a grade in school), along with items concerning life traumas (e.g., sexual assault, physical and emotional abuse, being injured with a weapon), witnessing violence, receiving information about bad events, and the death of relatives or close friends. Exposure to lifetime trauma was based count of the number of events respondents reported experiencing. *Chronic stress* were measured using a 41-item scale (α = 0.86) adapted from Wheaton's inventory (1994) that captures exposure to chronic stressors across several domains of life such as general strain (e.g., "You're trying to take on too many things at once"), employment strain (e.g., "You want to change jobs but don't feel you can"), relationship strain (e.g., "You have a lot of conflict with your partner"), and children (e.g., "A child's behavior is a source of serious concern for you"). Respondents were asked the extent to which such experiences were (0) not true, (1) somewhat true, or (2) very true for them. Items were summed, and higher scores indicate greater exposure to chronic strains. *Recent life events* were measured by a 32-item inventory (Turner and Avison, 2003), and respondents were asked to report if each event (e.g., "Did a child die," "Was there a marital separation or divorce," "Did someone have a major financial crisis," and "Was demoted at work or took a pay cut.") happened to them or someone close within the past 12 months. Exposure to recent life events was based on a count of the number of events reported.

Psychosocial Resources. General coping resources for this study were captured with measures the respondents' levels of mastery, self-esteem, and social support. The respondents' levels of *mastery* (α = 0.70) were measured using a 7-item scale developed by Pearlin and Schooler (1978). The index is a summed index evaluating the degree to which respondents believe they have control over their lives with statements such as "what happens to you in the future mostly depends on you," and "you can do just about anything you really set your mind to." Responses were based on how much the respondents agreed with each statement: (0) strongly agree, (1) mildly agree, (2) neither agree nor disagree, (3) mildly disagree, and (4) strongly disagree. The respondents' levels of *self-esteem* (α = 0.75) were measured using a 6-item abbreviated version of Rosenberg's (1986) scale that included "you feel that you have a number of good qualities," "you feel that you are a person of worth at least equal to others," and "you take a positive attitude toward yourself." Responses were based on how much the respondents agreed with each statement: (0) strongly agree, (1) mildly agree, (2) neither agree nor disagree, (3) mildly disagree, and (4) strongly disagree. *Social* support (α = 0.91) was captured using a 24-item composite measure of social support from friends and family based on the Provisions of Social Relations Scale, for which evidence of construct validity and reliability is available (Turner and Noh, 1988). The scale included statements about the quality of the relationship that the respondents have with their friends (e.g., "Your family often lets you know that they think you are a worthwhile person," "You feel very close to your friends," "You have friends who would always take the time to talk over your problems, should you want to"). Responses included (0) not at all true for you, (1) somewhat true for you, (2) moderately true for you, and (3) very true for you. *John Henryism active coping* (James, 1996) was measured using a 12-item scale (α = 0.78) that captures respondents' indicators of mental and physical health vigor, unwavering dedication to hard work, and a "single-minded determination" to achieve success. Items in scale include, "Once I make up my mind to do something, I stay with it until the job is done" "When things don't go the way I want them to, that just makes me work even harder" "I don't let my personal feelings get in the way of doing a job." Responses to these items were (1) completely false, (2) somewhat false, (3) neutral, (4) somewhat true, and (5) completely false.

Mental Health Care. Respondents were asked about their healthcare experiences and services that they sought for problems with their emotions and well-being. For *mental health care*, they were asked if they went to a psychiatrist, psychologist, or other mental health professional in their lifetime for help (0 = no, 1 = yes).

Sociodemographic Characteristics. All analyses in the present study accounted for the respondents' age, socioeconomic position, marital status, parental status, and level of racial identity. *Gender* is recorded based on how the respondents identified themselves (0 = women, 1 = men), while *age* is employed as a continuous measure in years. Respondents' *socioeconomic position (SEP)* was measured using a standardized index of years of completed education, self-reported annual household income, and level of occupational prestige based on the Nam–Powers–Boyd occupational scores (Nam and Boyd, 2004). Extensive information on the NSAHS coding procedure for occupational prestige can be found elsewhere (see Turner et al., 2016). In this study, socioeconomic position scores were calculated by first standardizing and summing the three dimensions; scores were then divided by the number of dimensions on which data were available (Brown, 2014; Gayman et al., 2011). This resulted in a socioeconomic position score that represents the number of standard deviations above or below the sample's mean socioeconomic position, with higher values indicating higher socioeconomic position. By equally weighting education, income, and occupational prestige, this approach captures individuals' placement within a social hierarchy and provides a comprehensive assessment of socioeconomic position while minimizing data loss on individual indicators (Brown, 2014). *Marital status* was reported by respondents based on whether they were married (0 = unmarried, 1 = married), and *parental status* was reported by respondents based on whether they had children (0 = no children, 1 = have children). Finally, based on prior research that demonstrates a significant association between racial identity and the perception and health consequences of discrimination (Operario and Fiske, 2001; Sellers et al., 2003), the present study also assessed differences in racial identity among respondents. *Racial identity* was captured using an 11-item index (α = 0.80) drawn from the Multidimensional Inventory of Black Identity (Sellers et al., 1997) which measures the degree to which being Black was important to their sense of self and the degree to which they felt connected to other Black people. Example items include, "you have a strong sense of yourself as a member of your racial/ethnic group" and "most of your close friends are from your own racial/ethnic group." Response items ranged from (1) strongly disagree to (7) strongly agree. Items were summed, such that greater values indicated stronger connectedness to a Black identity and Black people.

3.3. Analytic strategy

Weighted means and proportions were estimated for all study variables among the full sample and the sample characteristics were assessed (Table 1). To examine the association between vicarious discrimination and anxiety symptoms, linear regression models were

used (Table 2). Associations between anxiety symptoms and age, SEP, marital status, parental status, and racial identity were considered in Model 1. Model 2 added vicarious discrimination. To evaluate whether the effects of vicarious discrimination on anxiety symptoms persist in the context of the stress and coping framework, additional forms of discrimination (major discrimination, and daily discrimination experiences), general stressors (recent life events, chronic stress, and lifetime trauma) and psychosocial resources (mastery, self-esteem, social support, and John Henryism) were added in Model 3. Finally, to determine whether mental health treatment may moderate the effects of discrimination, the main effect of mental health treatment and the interaction effects between mental health treatment and each form of discrimination (vicarious experiences of discrimination, and personally experienced major and everyday discrimination) were assessed among the full model (Figs. 1 and 2). All analyses were conducted using Stata 16.

4. Results

Table 1 presents the weighted means and proportions of sample characteristics of the Black adults in the sample. Frequency levels were determined based on how the values corresponded with the measures' rating scales. Results show that the Black adults in this sample report relatively low levels of anxiety on average ($m = 4.17$, $SD = 3.48$, range = 0–15), which was expected given prior findings on the self-reported mental health of Black Americans (Williams, 2018). On average, the respondents in this sample reported experiencing at least one vicarious and personal experience of major discrimination, while also reporting regular experiences of everyday discrimination ($m = 10.44$, $SD = 5.84$). Overall, Black respondents from this study reported moderate levels of mastery ($m = 19.62$, $SD = 5.23$), self-esteem ($m = 18.88$, $SD = 2.08$), social support ($m = 37.25$, $SD = 9.92$), and John Henryism ($m = 37.22$, $SD = 5.83$). About 13% of the Black adults in this study reported receiving mental health care at least once in their lifetime. Men made up about 45% of the sample, and the average age was 43.57 ($SD = 11.21$). Additionally, the majority of respondents reported higher levels of racial identity, suggesting strong feelings of connectedness to Black people and a Black identity ($m = 63.90$, $SD = 9.56$).

4.1. The association between vicarious discrimination and anxiety symptoms

In Table 2, the relationship between discrimination and anxiety symptoms among Black adults was examined. Patterns from Model 1 persisted in Model 2, with vicarious experiences of discrimination added, and results show that vicarious experiences of discrimination were significantly associated with greater levels of anxiety ($b = 0.33$, $SE = 0.16$, $p < 0.05$). This association persisted in Model 3, which assessed the effects of discrimination after the inclusion of stress and coping factors. Results from Model 3 showed that after accounting for social stressors and psychosocial resources, vicarious experiences of major discrimination ($b = 0.29$, $SE = 0.15$, $p < 0.05$), personal experiences of everyday discrimination (b = 0.09, SE = 0.03, p < 0.05), and chronic strains ($b = 0.08$, $SE = 0.02$, $p < 0.001$) were all associated with higher levels of anxiety. Conversely, higher levels of mastery ($b = -0.13$, $SE = 0.05$, $p < 0.01$) were significantly associated with lower levels of anxiety. Collectively, these factors accounted for approximately 31% of the variation in anxiety symptoms among Black adults ($R^2 = 0.31$), and findings indicate that vicarious experiences of major discrimination and personal experiences of everyday discrimination were linked with levels of anxiety among this group.

4.2. The moderation effects of mental health care on discrimination and anxiety symptoms

Fig. 1 shows how the relationship between vicarious experiences of major discrimination and anxiety symptoms are moderated by mental health treatment among Black adults. The interaction effects of mental health care utilization and vicarious experiences of major discrimination

Table 2
Association between anxiety and vicarious experiences of discrimination among black adults (N = 627), nashville stress and health study (2011–2014).

	Model 1		Model 2		Model 3	
	b	(SE)	B	(SE)	b	(SE)
Gender						
Women (Ref.)						
Men	−1.08*	(0.47)	−0.96*	(0.44)	−0.32	(0.26)
Age	−0.06***	(0.01)	−0.06***	(0.01)	−0.04*	(0.01)
Socioeconomic Position (SEP)	−0.40	(0.33)	−0.44	(0.33)	−0.12	(0.24)
Marital Status						
Unmarried (Ref.)						
Married	0.28	(0.35)	0.19	(0.40)	−0.37	(0.28)
Parental Status						
Non-Parent (Ref.)						
Parent	−1.58***	(0.36)	−1.59***	(0.35)	−1.42***	(0.27)
Racial Identity	0.01	(0.01)	0.00	(0.01)	−0.01	(0.02)
Vicariously Experienced Discrimination						
Major Discrimination			0.33*	(0.16)	0.29*	(0.15)
Personally Experienced Discrimination						
Major Discrimination					−0.24	(0.14)
Everyday Discrimination					0.09*	(0.03)
General Social Stressors						
Recent Life Events					0.13	(0.11)
Chronic Stress					0.08***	(0.02)
Lifetime Trauma					0.08	(0.07)
Psychosocial Resources						
Mastery					−0.13**	(0.05)
Self-Esteem					−0.19	(0.11)
Social Support					−0.02	(0.02)
John Henryism					0.04	(0.04)
Intercept	8.00***	(1.28)	7.45***	(1.28)	8.38	(2.28)
R^2	0.11		0.12		0.31	

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (two-tailed tests).
Note: Unstandardized coefficients and standard errors from linear models are presented.

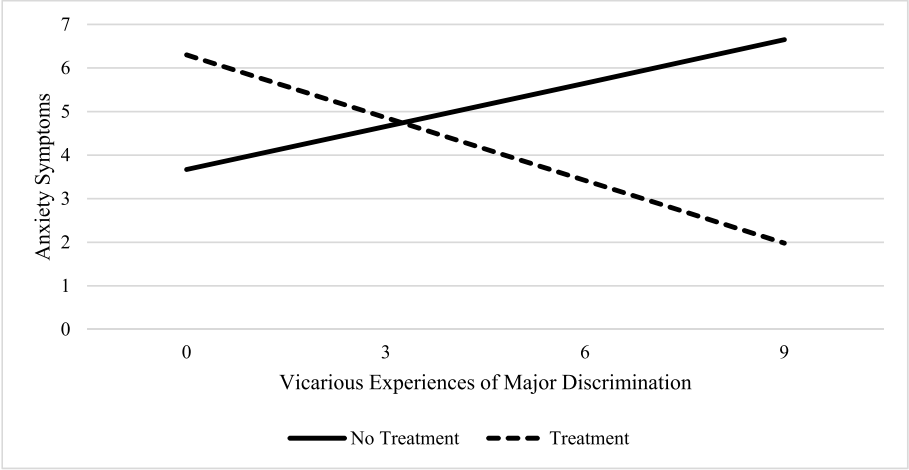

Fig. 1. Mental Health Care Moderates the Relationship between Vicarious Discrimination and Anxiety Symptoms among Black Adults. Nashville Stress and Health Study (2011–2014); $N = 627$. Note: Gender, age, SEP, marital status, parental status, racial identity, personally experienced discrimination, general social stressors, and psychosocial resources were accounted for.

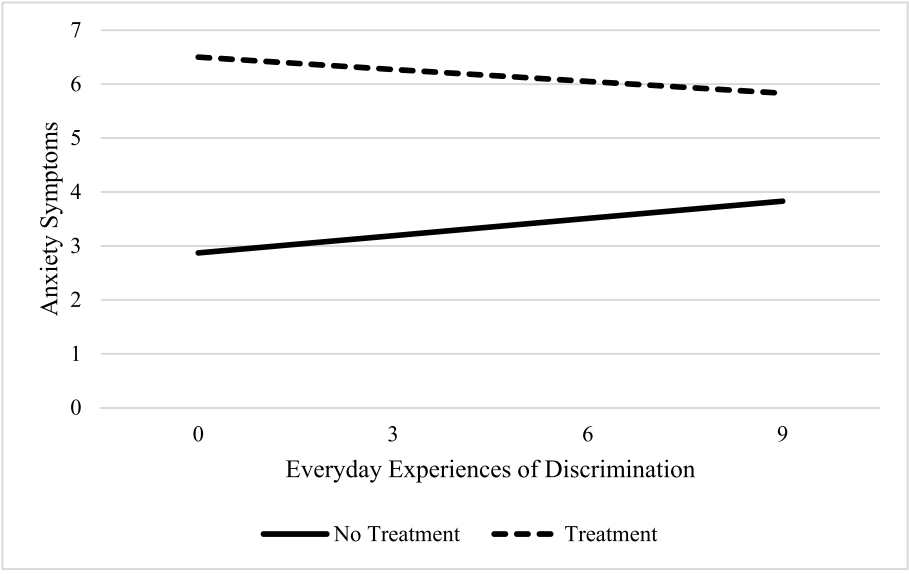

Fig. 2. Mental Health Care Moderates the Relationship between Everyday Discrimination and Anxiety Symptoms among Black Adults. Nashville Stress and Health Study (2011–2014); $N = 627$. Note: Gender, age, SEP, marital status, parental status, racial identity, personally experienced discrimination, general social stressors, and psychosocial resources were accounted for.

were significantly associated with lower levels of anxiety ($b = -0.81$, $SE = 0.31$, $p = 0.01$). In Fig. 2, the moderation effects of mental health care on the relationship between personal experiences of everyday discrimination and anxiety symptoms are displayed. The interaction effects of mental health care utilization and everyday experiences of discrimination were associated with decreased levels of anxiety symptoms among Black adults ($b = -0.18$, $SE = 0.06$, $p < 0.01$). However, mental health care utilization did not moderate the relationship between personal experiences of major discrimination and anxiety symptoms. Overall, findings from these analyses show that the relationships of vicarious experiences of major discrimination and everyday experiences of discrimination with anxiety differ depending on if mental health treatment has been received.

5. Discussion

The present study addresses gaps in current literature on discrimination and mental health by offering evidence for how secondhand experiences of discrimination shape anxiety symptoms for Black adults, and how mental health care utilization may reduce some of the harm associated with perceived discrimination. The overall goal of this study was to examine whether, and how, vicarious experiences of discrimination (i.e., discrimination experienced by one's spouse, child, other relative, and friends) may be associated with anxiety symptoms among Black adults from a stress and coping perspective. The potentially moderating effects of mental healthcare on this relationship were also observed. Results from this study show that vicarious experiences of major discrimination are associated with higher levels of anxiety symptoms among Black adults. Furthermore, mental healthcare utilization may moderate the negative effects of vicarious discrimination on anxiety symptoms.

The first aim of this study was to comprehensively examine the association between vicarious experiences of discrimination and anxiety symptoms among Black adults. Our results reveal that vicarious experiences of discrimination are associated with greater levels of anxiety symptoms among Black adults after accounting for sociodemographic

characteristics. This finding offers empirical support for previous assertions regarding the negative effects of vicarious discrimination (Harrell, 2000), while extending prior knowledge on vicarious racism and mental health (Heard-Garris et al., 2018). Furthermore, this finding further demonstrates the pervasiveness of the inescapable deleterious effects of discrimination for Black Americans; in other words, while many individuals may not personally experience racism, they will likely be affected by the racialized experiences of those with whom they share close ties. This result from our study also extends our understanding of how mental health is shaped by Black Americans who vicariously experience discrimination. For example, previous research revealed a significant association between police killings of unarmed Black people in the United States and subsequent poor mental health days (Bor et al., 2018). However, the study was limited to examining the effects of unfair treatment from law enforcement and did not consider the additional contexts in which discrimination commonly occurs (i.e., hiring practices and workplace, education, housing, service industry, etc.). Moreover, the analytic strategy did not include the experiences of the people in the respondents' own social networks. Our study addressed gaps such as these and provide significant insights for research on racism and mental health.

The second aim of this study was to determine whether vicarious experiences of discrimination have a unique effect on anxiety symptoms within the context of the stress and coping framework, which includes additional stressors and personal coping resources. Results from our analyses revealed that even while accounting for additional forms of discrimination-related stressors (major discrimination and daily discrimination), general social stressors (recent life events, chronic strains, and lifetime trauma), and psychosocial resources (mastery, self-esteem, and social support), vicarious experiences of major discrimination remained significantly associated with greater levels of anxiety symptoms among Black adults. These findings underscore the significance of secondhand discrimination and its implication for mental health within the context of other social stressors. First, vicariously experienced discrimination maintained its association with anxiety after adjusting for additional discrimination-related stressors, such as everyday discrimination experiences, which were also linked with higher levels of anxiety symptoms. Personal experiences of major discrimination were not associated with anxiety after accounting for daily discrimination experiences, which is also fairly consistent with previous literature on racism-related stressors and well-being (Turner and Avison, 2003; Williams et al., 1997). Second, vicarious discrimination experiences maintained an association with anxiety symptoms after adjusting for general stress exposure, further emphasizing the unique persistence of its effects on the well-being of Black adults. Similar to the racism-related stress exposure, chronic experiences of stress mattered most for Black adults and were associated with higher levels of anxiety symptoms, while recent life events and lifetime trauma were not linked with anxiety symptoms in the analyses. Third, while stress theory argues that individuals may possess certain psychosocial resources to moderate the negative effects of social stressors (Pearlin, 1989), such as discrimination, the association between vicariously experienced discrimination and greater levels of anxiety symptoms was maintained after accounting for several psychosocial resources (mastery, self-esteem, social support, and John Henryism). These findings extend the literature on racism-related stress and mental health by demonstrating how vicarious discrimination may be associated with well-being from a stress and coping perspective.

The third aim of this study was to evaluate how mental health treatment may moderate the relationship discrimination and anxiety symptoms for Black adults. Our findings revealed that receiving treatment from a mental health professional at least once over the life course was associated with lower levels of anxiety for Black adults who endured vicarious discrimination and personal experiences of daily discrimination. These findings have significant implications for mental health research and interventions aimed at reducing the harm of the various dimensions of racism-related stress. First, it suggests that receiving mental health treatment at least once in one's lifetime may be associated with reduced levels of anxiety among Black adults who report vicarious exposure to major experiences of discrimination. Indeed, our analyses revealed that the utilization of mental health care among Black adults who experienced vicarious discrimination was associated with a seemingly larger reduction in anxiety symptoms relative to those who experienced everyday discrimination. Second, it further drives the emphasis on increasing the relatively low utilization rates of mental health treatment among Black adults. The task of increasing utilization, however, presents significant challenges because of barriers that Black Americans face for receiving care. Some of the racialized barriers to access and utilization of services include geographic and financial challenges, in addition to unfair treatment from mental health care professionals during treatment and even when securing appointments (Button et al., 2020; Kugelmass, 2016). Other barriers are shaped by the mistrust that medical and scientific institutions in the U.S. have caused through centuries of abuse and highly unethical practices with Black Americans (Washington, 2006). These longstanding barriers must be alleviated to make it easier for Black Americans to gain access to mental healthcare, and to utilize it to their potential benefit within the context of their racialized experiences. Moreover, culturally-specific treatment strategies may be most effective in addressing racism-related stress for Black adults across various life stages (Anderson et al., 2018; Anderson and Stevenson, 2019; Jones et al., 2020; Kelly et al., 2020), as opposed to a one-time treatment over the course of one's life.

5.1. Limitations

While the present study offers novel insights for the discrimination and health literature, there were several limitations. First, given the cross-sectional nature of the data for the participants in the NSAHS, we could definitively draw conclusions regarding causal relationships. Also, because the study utilized a regional sample, it is possible that the generalizability of study findings to other populations and contexts is limited. Second, we were not able to assess vicarious experiences of discrimination through various media platforms based on how the measure was constructed. Additionally, while vicarious experiences of major discrimination were indicated during data collection, vicarious experiences of everyday discrimination were not collected, and thus were unavailable for the assessment. Furthermore, respondents were not asked about what they might attribute their vicarious discriminatory experiences to, which limits researchers' ability to assess these relationships as solely racism-related events. Nonetheless, the NSAHS was suitable for this study because of its adapted discrimination measures that allow for a more comprehensive evaluation of personal and vicarious experiences of discrimination. Third, the present study uses a lifetime measure of mental healthcare utilization for study participants. As a result, the specifics of the treatment (i.e., frequency and duration of service utilization, race of the provider, and the basis of strategies) was not included in our study analyses. Furthermore, the various types of treatment (i.e., racial socialization, collective coping, etc.) were not made available at the onset of data collection and, thus, could not be assessed with these data. Future studies should consider the types of treatment and the characteristics of the provider to better determine what is most effective for Black Americans who experience racism-related stress.

6. Conclusion

A growing body of evidence shows that vicarious exposures to discrimination are associated with worse well-being among Black adults (Moody, 2022). However, this study specifically examines how vicarious discrimination-related stress exposure can shape anxiety outcomes among Black adults from a more comprehensive stress and coping perspective, which previous investigations have lacked. More research is

needed to further clarify the relationships between vicarious racism and mental health. Furthermore, this study provides evidence that the utilization of mental healthcare may be beneficial for Black Americans who experience discrimination, extending support for researchers who have recommended this form of healthcare to help alleviate subsequent racialized stress among minoritized populations. Future research should consider findings from this study when making recommendations for intervention.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.socscimed.2022.114997.

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