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Stress and the Mental Health of Populations of Color: Advancing Our Understanding of Race-related Stressors

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Abstract

This article provides an overview of research on race-related stressors that can affect the mental health of socially disadvantaged racial and ethnic populations. It begins by reviewing the research on self-reported discrimination and mental health. Although discrimination is the most studied aspect of racism, racism can also affect mental health through structural/institutional mechanisms and racism that is deeply embedded in the larger culture. Key priorities for research include more systematic attention to stress proliferation processes due to institutional racism, the assessment of stressful experiences linked to natural or manmade environmental crises, documenting and understanding the health effects of hostility against immigrants and people of color, cataloguing and quantifying protective resources, and enhancing our understanding of the complex association between physical and mental health.

Keywords

mental disorders, mental health, race, racial discrimination, racism, stress

There is considerable complexity in the association between race and mental health. The patterning of racial differences in mental health appears to vary by indicator of mental health status. For several decades, research has shown that while blacks (or African Americans) often have higher rates of psychological distress than whites, some studies also find that whites have elevated levels of depressive and anxiety symptoms compared to blacks (Dohrenwend and Dohrenwend 1969; Vega and Rumbaut 1991). Blacks tend to report lower levels of psychological well-being on cognitively focused measures such as life satisfaction and happiness (Hughes and Thomas 1998) but also report higher levels of flourishing than whites (Keyes 2007). Flourishing refers to the absence of mental disorders and the presence of high levels of psychological well-being. With regard to defined psychiatric disorders, Hispanics (or Latinos; with the exception of Puerto Ricans), blacks, and Asians all have lower rates of lifetime and past year psychiatric disorders than whites (Miranda et al. 2008). However, when blacks and Latinos experience mental illness, their episodes tend to be more severe, persist for longer periods of time, and are more debilitating than for any other race or ethnic group (Breslau et al. 2005). For example, in the National Study of American Life (NSAL), African Americans and Caribbean

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Blacks had lower current and lifetime rates of major depression than whites (Williams et al. 2007). However, once depressed, both black groups were more likely than whites to be chronically or persistently depressed, have more severe symptoms and higher levels of impairment, and not receive treatment.

We do not currently have a clear sense of either the determinants of the levels of mental health status for the major racial-ethnic groups in the United States or the patterning of the various indicators of mental health status for all of these minority populations. However, there is broad agreement that social contextual factors that reflect exposure to chronic and acute stressors linked to the living and working conditions of these populations play a role in shaping their mental health risk (Pearlin et al. 2005; Turner 2013; Vega and Rumbaut 1991). Historically, the assessment of stressful life experiences was heavily driven by the stressors experienced by middle-class white males. There has been enormous scientific interest and effort in recent decades in conceptualizing and measuring the stressors that may be distinctive to or more prevalent among socially stigmatized racial and ethnic minority populations and how these stressors can affect their physical and mental health. These stressors are viewed as interconnected and driven by exposures in social contexts, structures, and roles (Pearlin et al. 1981). This article provides an overview of research that suggests that the mental health of racial-ethnic socially stigmatized populations is embedded in these larger contextual factors. It begins with an overview of the research on racial discrimination and health and then situates this research in the need to more clearly document the other pathways by which racism can also adversely affect mental health.

RACIAL DISCRIMINATION AND MENTAL HEALTH

In recent decades, research on racial discrimination and mental health has been a rapidly growing area of scientific investigation. However, racial discrimination is best understood as one of the pathways by which racism affects health (Williams and Mohammed 2013). The term *racism* refers to an organized system that is premised on the categorization and ranking of societal groups into races (Bonilla-Silva 1996). The dominant group devalues, disempowers, and differentially allocates desirable societal opportunities and resources to racial groups categorized as inferior. Supporting and buttressing the structure of racism is an ideology that is deeply embedded in the culture of the society that provides the rationale for the ranking of groups. This leads to the development of negative attitudes and beliefs toward racial outgroups (prejudice and stereotypes) and differential treatment (discrimination) of these groups by both individuals and social institutions. There is a large body of high-quality scientific evidence that documents the persistence of racial discrimination in employment, housing, banking and other commercial transactions, and a broad range of domains of life (Pager and Shepherd 2008).

Targets of discrimination are aware of at least some of these incidents of bias, and they are often experienced as stressors that can adversely affect mental and physical health. Historically, such experiences had not been included in the typical scales used to assess acute and chronic stress. Considerable evidence now suggests that these experiences are commonplace in contemporary society. For example, a recent national survey assessed discrimination as both acute major experiences (e.g., not being hired for a job or being unfairly harassed by the police) and chronic minor experiences captured by the Everyday Discrimination Scale (e.g., being treated with less courtesy and respect than others and receiving poorer service in restaurants and stores; American Psychological Association 2016). This study found that 69% of American adults reported experiencing at least one experience of discrimination and 61% reported experiencing everyday discrimination. Importantly, these experiences were patterned by race. For example, 35% of African Americans and Native Americans, 25% of Latinos, 22% of Asians, and 18% of whites reported that for unfair reasons, they had not been hired for a job. Similarly, 34% of American Indians, 23% of blacks, 19% of Hispanics, and 11% of Asians and non-Hispanic whites reported that they experienced everyday discrimination almost every day or at least once a week (American Psychological Association 2016).

Early Empirical Research on Racial Discrimination

Early studies of discrimination and health found that self-report measures of discrimination were inversely associated with good mental and physical health. Reviews of this early literature revealed that most studies were cross-sectional, assessed mental health outcomes or other self-reported indicators of

health, and focused on African American adults in the United States (Krieger 1999; Williams, Neighbors, and Jackson 2003). Although these findings were consistent with the notion that experiences of discrimination were neglected psychosocial stressors, there were serious scientific limitations. There was the possibility of shared response bias between self-reported measures of discrimination and self-reported measures of health in cross-sectional analyses. It was possible that mentally ill individuals could be (mis)perceiving discrimination that did not even exist. There was also concern that key psychological confounding factors such as social desirability, negative affect, neuroticism, or self-esteem could drive the observed associations.

Subsequent research has addressed these methodological concerns. An important early study analyzed longitudinal data from 779 black adults in the National Study of Black Americans (NSBA; Brown et al., 2000). This study found that psychological distress and diagnosed major depression at Wave 2 (1987–1988) were unrelated to reports of discrimination at Wave 3 (1988–1989), indicating that poor mental health did not predict subsequent reports of discrimination. The study also found that racial discrimination at Wave 2 was positively associated with psychological distress but not depression at Wave 3. Although the majority of studies of discrimination and health are still cross-sectional, there are a growing number of prospective studies that link changes over time in discrimination to increases in symptoms of distress and depression (Lewis, Cogburn, and Williams 2015; Paradies et al. 2015; Pascoe and Richman 2009; Schulz et al. 2006; Wallace, Nazroo, and Bécares 2016; Williams and Mohammed 2009). Personality traits are not routinely included as potential confounders in studies of self-reported discrimination. However, several studies have found that the association between discrimination and health remains robust after adjustment for personality characteristics such as hostility, neuroticism, social desirability, negative affect, and trait anxiety (Lewis et al. 2015; Williams and Mohammed 2009). Research has also documented that discrimination is associated with a broad range of disease states (e.g., cancer, cardiovascular disease, diabetes) and preclinical indicators of disease (e.g., allostatic load, inflammation, shorter telomere length, body mass index [BMI], incident obesity, coronary artery calcification, cortisol dysregulation, and oxidative stress) that are not assessed via self-report (Lewis et al. 2015; Paradies et al. 2015).

Recent Empirical Research on Discrimination and Mental Health: Adults

A recent review documented that discrimination is positively associated with measures of depression and anxiety symptoms and psychological distress as well as defined psychiatric disorders (Lewis et al. 2015). For example, in the NSAL, among African American and Caribbean Black adults 55 years and older, positive but small associations were evident between both racial and nonracial everyday discrimination and the risk of any lifetime (LT) disorder as well as LT mood and anxiety disorders. Discrimination was also associated with a small increased risk of depressive symptoms and serious psychological distress (Mouzon et al. 2017). Similarly, in the National Latino and Asian American Study (NLAAS), everyday discrimination was associated, in multivariate models, with increased odds of any *DSM-IV* disorder (odds ratio [OR] = 1.90), depressive disorder (OR = 1.72), and anxiety disorder (OR = 2.24) among Asian Americans (Gee et al. 2007). Discrimination was also associated with comorbidity. Compared to persons with no disorders, everyday discrimination was associated with a two-fold risk of having two disorders and a three-fold risk of having three or more disorders. This pattern in the overall sample of Asian Americans was similar to that observed among the subset who were immigrants. In the NLAAS and NSAL national studies, among Latino, Asian, African American, and Caribbean Black adults, everyday discrimination was positively associated with both 12-month (OR = 4.59) and lifetime psychotic experiences (OR = 4.27; Oh et al. 2014). This pattern was evident for visual (OR = 3.75) and auditory (OR = 5.65) hallucinatory experiences as well as delusional ideation (OR = 7.21).

Discrimination has also been associated with increased risk of mental disorders in international contexts. For example, in the national South Africa Study of Stress and Health, acute and chronic non-racial discrimination were moderately associated with elevated risk of 12-month and lifetime rates of any disorder, even after adjustment for other stressors and potentially confounding psychological factors (Moomal et al. 2009). For example, chronic everyday nonracial discrimination was associated with increased risk of lifetime mood (OR = 1.68), anxiety (OR = 1.94), and substance use disorders (OR = 1.72) in the fully adjusted models. The UK Household Longitudinal Study also assessed discrimination in four domains and related those

exposures to changes in mental health from Wave 1 to Wave 3 (Wallace et al. 2016). It found a dose-response relationship between the number of experiences of discrimination with the degree of deterioration in mental health over time, as measured by a scale of psnychological distress. The study found that those participants who had reported only one prior experience of discrimination had greater deterioration in mental health (1.93 points lower on a scale of psychological distress) than those who reported none. Those who reported two or more experiences of discrimination at one prior time point had even greater mental health deterioration (2.98 points lower). The level of mental health decline further increased for those who reported two or more experiences of discrimination at one time point and one incident at the other time point (5.65 points lower), with the greatest degree of mental health deterioration evident among those who reported two or more experiences of discrimination at both time points (8.26 points lower).

Based on in-depth qualitative interviews, Fleming, Lamont, and Welburn (2012) conclude that incidents of racial discrimination matter so profoundly for mental health because they are experiences of exclusion that trigger feelings of a "defilement of self." This includes feelings of being overscrutinized, overlooked, underappreciated, misunderstood, and disrespected. Importantly, experiences of discrimination violate cultural expectations of fairness, morality, dignity, and rights. Pearlin and colleagues (2005) had earlier argued that stressors linked to race may be especially pathogenic because they could be perceived as a direct attack on an individual's identity.

Most studies of discrimination and health have not explored the role of discrimination in contributing to racial disparities in health. However, a few studies in the United States and internationally have documented that perceived discrimination makes an incremental contribution over socioeconomic status (SES) in accounting for racial-ethnic inequities in mental health and self-reported measures of physical health. This is evident for measures of distress and global measures of mental and physical health in community and national studies in the United States (Pole et al. 2005; Ren, Amick, and Williams 1999; Williams et al. 1997). This has also been observed, in national data from New Zealand, for Maori-European disparities on a global measure of mental health and three other indicators of self-reported health (Harris et al. 2006). A similar pattern has been documented in Australia for Aboriginal–non-Aboriginal variations in self-reported mental

and physical health (Larson et al. 2007). A national study in South Africa also found that experiences of discrimination were positively related to psychological distress and reduced the residual association between race and distress after adjustment had been made for SES (Williams et al. 2008).

Empirical Research on Discrimination and Mental Health: Children and Adolescents

Research reveals that exposure to discrimination and its negative consequences for mental health begins early in life. A review of research of discrimination among children and adolescents found 121 studies (and 461 outcomes) that had examined the association between discrimination and health among persons 0 to 18 years old (Priest et al. 2013). Exposure to discrimination predicted worse mental health (e.g., anxiety and depression symptoms) in 76% of the 127 associations examined. Similarly, discrimination was inversely associated with positive mental health (e.g., resilience, self-worth, self-esteem) in 62% of the 108 associations examined. As in studies of adults, most studies are cross-sectional, but there is also an emerging body of longitudinal research. For example, a study in rural Georgia of 714 black adolescents, aged 10 to 12 at baseline, assessed their exposure to discrimination three times over the next five years (Brody et al. 2006). It found that increases in racial discrimination were associated with conduct problems and depressive symptoms, with the association between discrimination and conduct problems stronger for boys but no gender difference evident for depressive symptoms.

Several studies in this review documented that parental exposure to discrimination can adversely affect the child. For example, a study of black adolescents found that parental racial discrimination was associated with symptoms of anxiety and depression in the child independent of the child's experiences of racial discrimination (Gibbons et al. 2004). In this study, parental experiences of discrimination were also associated with substance use in children that was mediated by both parental and child anxiety and depression (Gibbons et al. 2004). Another study of 10- and 11-year-olds found that mother reports of racial discrimination were associated with poor parental mental health, which in turn adversely affected parenting behaviors and parenting satisfaction (Murry et al. 2001).

A large study in the United Kingdom, the Millennium Cohort Study, examined longitudinally

the pathways by which maternal discrimination among ethnic minority mothers can affect four domains of social and emotional behavior in children—conduct, peer problems, emotional symptoms, and hyperactivity (Bécares, Nazroo, and Kelly 2015). The study found that adjusted for sociodemographic factors and mother's mental health in the year 2006, there were three pathways by which maternal racial-ethnic discrimination in 2006 was associated with children's social and emotional behavior in 2012. First, maternal discrimination in 2006 directly predicted child outcomes in 2012. In addition, mother's discrimination in 2006 was associated with poorer maternal mental health and harsh parenting practices in 2008, and both of these factors were associated with child social and emotional development in 2012.

A recent systematic review documented how children can often be the unintended victims of discrimination because of their links to other individuals (Heard-Garris et al. 2018). This review found 30 studies that had examined the association between vicarious discrimination (secondhand exposure to racism) and child health. Most of the studies were longitudinal and had been published after 2011. Two-thirds of the studies focused on African Americans in urban areas of the United States, but there were also studies of Asian Americans, Hispanics, whites, and indigenous groups in Australia, New Zealand, and the United States. Socio-emotional and mental health outcomes were most frequently assessed, and the review found that in almost half of the examined associations, indirect exposure to racism by children was inversely related to child health. There is clearly a need for sustained research attention that would comprehensively characterize both direct and indirect exposure to discrimination and document how these experiences accumulate over the life course to affect the onset and course of illness (Gee, Walsemann, and Brondolo 2012; Heard-Garris et al. 2018). Greater attention needs to be given in future research to identifying sensitive periods, the interdependence in exposures among persons, latency periods, stress proliferation processes, and effects that may be linked to historical period and birth cohort (Gee et al., 2012).

Vigilance and the Threat of Exposure to Discrimination

Discrimination, like other stressors, can affect health through both actual exposure and the threat of exposure. Heightened vigilance refers to living in a state of psychological arousal in order to monitor, respond to, and attempt to protect oneself from threats linked to potential experiences of discrimination and other dangers in one's immediate environment (Williams, Lavizzo-Mourey, and Warren 1994). The Heightened Vigilance Scale was developed as a companion measure to the Everyday Discrimination Scale and seeks to capture efforts to protect oneself from discrimination and minimize exposure (Williams et al. 1997). Studies with this scale or abbreviated versions of it highlight the importance of assessing the health consequences of race-related vigilance. Research reveals that race-related vigilance is positively associated with large arterial elasticity (a preclinical index of cardiovascular function) for African American boys but not girls (Clark, Benkert, and Flack 2006), the risk of sleep difficulties and racial disparities in sleep (Hicken et al. 2013), the odds of hypertension for blacks and Hispanics but not whites, and the racial gap in hypertension (Hicken et al. 2014) and waist circumference and BMI among black women (Hicken, Lee, and Hing 2018).

Vigilance also matters for mental health. A study of Baltimore adults found that blacks have higher levels of heightened vigilance than whites, and vigilance was positively associated with depressive symptoms and contributed to the black-white disparity in depression (LaVeist et al. 2014). Similarly, Lindström (2008) found that a single-item measure of anticipatory ethnic discrimination was associated with lower levels of psychological health in a national sample of adults in Sweden. A study of Latino college students also found that the anticipation of being discriminated against led to greater concern and threat emotions before an encounter with a potential perpetrator of discrimination and more stress and greater cardiovascular responses after the encounter (Sawyer et al. 2012). Our current understanding is limited with regard to all of the contexts and conditions that give rise to perceptions of threat, the optimal ways to assess vigilance with regard to discrimination, and the ways in which vigilance combines with other risk factors to affect mental health.

Discrimination and Other Stressors

Discrimination must be understood and assessed within the context of other mechanisms of racism. Social disadvantages and stressors often cluster in people and places. In addition, institutional/structural racism can give rise to what Pearlin and colleagues (2005) called stress proliferation processes, in which an initial stressor can initiate or exacerbate stressors in other domains of life. Thus, living and

working conditions created by racism can initiate and sustain differential exposure to a broad range of stressors that at face value may not appear to be related to racism. These can include "traditional stressors" such as violence, criminal victimization, neighborhood conditions, financial stress, and relationship stress. According to Pearlin and colleagues, these are the "serious stressors," patterned by social disadvantage, that capture major hardships, conflicts, and disruptions in life and are especially virulent when they are chronic and recur in major social roles and domains (Pearlin et al. 2005).

An example of the comprehensive assessment of stressors comes from the Chicago Community Adult Health Study. This study measured stressors in eight domains that reflect key arenas in which people operate (e.g., home, work, neighborhood) and major roles/statuses they occupy (Sternthal, Slopen, and Williams 2011). The stressors included a brief battery of acute life events (lifetime traumatic experiences and recent life events); childhood adversity; chronic stressors in relationships, finances, neighborhoods, and at work; and acute and chronic life experiences of discrimination (everyday discrimination, discrimination at work, and major experiences of discrimination). Blacks and American-born Hispanics tended to have higher prevalence of each of the individual classes of stressors and greater clustering of multiple stressors compared to whites. The analyses found that each stressor was positively associated with depressive symptoms in models that considered all eight stressors simultaneously. Moreover, in models that counted the number of domains in which an individual scored high on stress, the study found a graded association between the number of stressors and an increase in depressive symptoms. In addition, the study found that the association between SES (especially income) and depressive symptoms was reduced substantially after coefficients for stress were added to the model, suggesting that stress exposure operates apart from SES but also through exposure to stressors that accompany low SES (Sternthal et al. 2011).

However, research attention is needed to fully characterize the ways in which institutional mechanisms of racism shape exposure to stressors. For example, residential racial segregation is recognized as one of the most striking and consequential legacies of institutional racism that has pervasive negative effects on living conditions and health (Williams and Collins 2001). It is a major contributor to racial differences in income, education, and employment and the concentration of poverty,

isolation, marginalization, and other social ills that tend to co-occur with segregation (Cutler and Glaeser 1997; Williams and Collins 2001). However, prior assessments of stressors have failed to fully capture all of the stress-inducing aspects of what Chester Pierce (1975) called the "extreme mundane environment" of disadvantaged neighborhoods.

A recent qualitative study of Baltimore residents who resided in public housing illustrates how segregation can create the concentration of poverty and poor housing and neighborhood conditions that trigger a range of acute and chronic secondary stressors (Turney, Kissane, and Edin 2013). The study found that residents were exposed to high levels of stressors linked to the social environment, including pervasive witnessing shootings, seeing drug activity, resorting to violence to defend oneself, high levels of break-ins and theft, incessant shouting and cursing, undesirable role models for children, unsafe places to raise children, and the resultant constant worry about child safety. In addition, stressors linked to the physical environment included broken elevators, roach and rodent infestation, trash buildup, dampness in the walls, extremely hot (or cold) interior temperatures, the absence of green open spaces, crumbling sidewalks, graffiti, litter, and inadequate lighting. It is not clear that existing batteries to capture acute and chronic stressors capture all of these aspects of stressful exposures. This is important because failure to measure stress comprehensively underestimates the negative effects of stressors on physical and mental health (Thoits 2010).

Comprehensively capturing the full mental health impact of exposure to discrimination requires careful attention to the changing nature of racism in society and assessing it in all of the contexts where it becomes evident. Research on discrimination in online contexts illustrates this point. A recent study of Latino adolescents found that both individual online discrimination (derogatory text, images, and symbols directly targeted at individuals because of their race and ethnicity) and vicarious online discrimination (derogatory incidents targeted to people of one's own racial or ethnic group) were adversely related to adolescent mental health (Umaña-Taylor et al. 2015).

Capturing "Hidden" Aspects of Race-related Stressors on Mental Health

A related need is to give more systematic attention to understanding how some life experiences that are not explicitly linked to racism can indeed reflect the

effects of racism and better documenting their contribution to mental health. For example, the death of a loved one is a standard indicator of stress on scales of life events, but the ways in which such exposures are driven by the larger racism in the society is not typically understood and appreciated. Debra Umberson's (2017) research on community bereavement illustrates the value of this approach. She shows that structural conditions linked to racism lead to lower life expectancy for African Americans. A consequence of the large racial differences in life expectancy is that compared to whites, black Americans are exposed to more deaths of friends and relatives from early childhood through late life and to more losses earlier in the life course. For example, compared with whites, black children are three times as likely to lose a mother by age 10, and black adults are more than twice as likely to lose a child by age 30 and a spouse by age 60. Umberson (2017) indicates that this elevated rate of bereavement and loss of social ties is a unique stressor that adversely affects levels of supportive social ties and mental (and physical health) across the life course.

The criminal justice system has also been identified as an instrument of institutional racism, a societal system that generates policies and procedures that have differential negative effects on stigmatized racial ethnic populations. Emerging evidence suggests that policies within this system that have differential impact on racial groups are an example of institutional racism. With approximately 700 per 100,000 citizens incarcerated at any given time, the United States has the largest number and highest rate of incarcerated people in the world (Wildeman and Wang 2017). The rates of incarceration increased dramatically in the 1970s. Disparities in surveillance, prosecution, and sentencing have been associated with a 10-fold increase in risk of incarceration for non-Hispanic blacks compared to white men in the United States, often reinforced by policies that have differentially criminalized substance abuse and mental illness (Wildeman and Wang 2017).

One factor contributing to the marked increase in incarceration rates for racial minorities was the laws that linked criminal penalties for cocaine to an arbitrary distinction of whether cocaine was used in powder form or as crack cocaine, the cheaper, solid, adulterated version of the former. The 1986 Anti-Drug Abuse Act created a 100:1 sentence disparity—a mandatory minimum prison sentence of five years for a defendant possessing 5 grams of crack cocaine (primarily used by blacks) or 500 grams of powder cocaine (primarily used by whites; Free 1997).

Thus, despite similar rates of cocaine use among black and white Americans and despite crack and powder cocaine having the same chemical makeup and similar physiologic effects, black people were more likely to be charged for drug possession and serve markedly longer prison sentences than whites (Free 1997).

Incarceration in turn has negative ripple effects on mental health for families and communities. The incarceration of a father is positively associated with poor school outcomes and behavioral problems in his children (Wildeman, Goldman, and Turney 2018). In contrast, there is not a consistent association between maternal incarceration and mental health and school outcomes. Factors that exacerbate the effects of parental incarceration include the presence of domestic violence, parental residence in the home before incarceration, child sex being male, and child race being white. Some studies have also quantified the impact of parental incarceration on racial disparities in child health and well-being (Wildeman et al. 2018). These studies reveal that mass incarceration has increased racial inequities in children's behavioral and mental health problems by 15% to 25% for externalizing problems and 24% to 46% for internalizing problems. In addition, the black-white disparity in infant mortality would be 10% lower if mass incarceration did not exist.

Aggressive policing can also adversely affect the mental health of those targeted and the larger community. A study in New York City of 1,261 young men aged 18 to 26 years assessed whether and how many times they had been stopped by the police and what had occurred during the encounter (Geller et al. 2014). The study found that the frequency of stops, intrusiveness of the encounter, and perception of injustice and disrespect in the encounter were all positively associated with symptoms of posttraumatic stress disorder (PTSD) and anxiety. These associations were robust after adjustment for race, education, public housing residence, and criminal activity.

There are also frequent media reports of incidents of police violence directed toward black, Latino, and Native American communities, and there is emerging evidence that the steady drumbeat and reminders of these police shootings can be chronic stressors that adversely affect the mental health of the larger community. A recent nationally representative, quasi-experimental study found that police killings of unarmed black Americans worsened mental health among blacks in the general population but had no effect on whites (Bor et al.

2018). The effect was not evident for police shootings of armed black men. Each police killing led to a per capita increase of .14 poor mental health days per month in the three months after the event. At the population level, police killings of unarmed black Americans resulted in 55 million poor mental health days annually in the black American community.

Other evidence indicates that witnessing community violence is also a risk factor for mental health problems (Clark et al. 2008). A study of 386 women receiving care at an urban health center reported on the location and timing of witnessing incidents of violence in their neighborhoods. The study found that women who witnessed violence in their community were twice as likely to report depressive and anxiety symptoms compared to those who reported no violence (adjusted for marital status, age, education, and intimate partner violence victimization). There is also an emerging body of evidence that suggests that there may be a complex pattern of association between the stressor of community violence and mental health, at least for male adolescents of color (Gaylord-Harden, So, Bai, Henry, et al. 2017; Gaylord-Harden, So, Bai, and Tolan 2017). In longitudinal studies of African American and Latino male adolescents in Chicago, this research has found that higher levels of exposure to community violence is positively associated with aggression, delinquency, and PTSD symptoms such as hyperarousal. However, the association between violence and depressive symptoms is curvilinear, with depressive symptoms increasing only up to a point, then beginning to decline. The authors suggest that youth of color may become emotionally desensitized to community violence as violence increases. Moreover, both emotional numbing and physiological arousal mediate the association between violence exposure and aggressive and delinquent behavior in these adolescent males. Future research needs to explore the extent to which these patterns are generalizable to other population subgroups and the extent to which community violence is a unique stressor in terms of its effect on mental health and behavior.

CULTURAL RACISM AND MENTAL HEALTH

Research also reveals that racism is deeply embedded in American culture and can contribute to adversely affecting mental health in multiple ways (Williams and Mohammed 2013). One indicator of the persistence of racism in the culture is the high levels of negative stereotypes in the population. A recent national study documented that it is not only adult members of disadvantaged racial-ethnic groups that are stereotyped negatively, but even young children (aged zero to eight years) and youth of color in the United States face high levels of negative racial stereotyping from adults who work with them (Priest et al. 2018). The study analyzed the stereotypes held by white adults who work or volunteer with children across the United States, examining their reported views towards adults, teenagers, and children from a range of racial and ethnic backgrounds (blacks, Hispanics, whites, Native Americans, Asians, and Arab Americans). The study found high levels of negative racial stereotyping toward nonwhites of all ages among adults working or volunteering with children. The highest levels of negative stereotypes were found toward blacks across all stereotypes measured (lazy, unintelligent, violent, and having unhealthy habits), with Native Americans and Hispanics seen as similarly negative on several stereotypes.

Negative stereotyping by whites was most pronounced toward adults but was seen even toward young children. For example, young black children (aged zero to eight years) were almost three times more likely as white adults to be rated as being lazy, with Native American and Hispanic children also more likely to be considered lazy than white adults. Young black children were more than twice as likely to be rated as unintelligent or violence-prone compared to white children of the same age, with Hispanic children also seen as more unintelligent or violence-prone than white children. Some of the strongest levels of negative stereotyping by white adults working with children were reported toward teenagers, with black and Native American teens being almost 10 times more likely to be viewed as lazy than white adults. African American and Hispanic teens were between one-and-a-half to two times more likely to be considered violence-prone and unintelligent than white adults and teens.

Provider Biases and Access and Quality of Care

Cultural racism can trigger unconscious bias that can result in reduced access to health-enhancing opportunities and resources for nondominant racial-ethnic groups. This has been well documented in the case of medical care, including mental healthcare. Research reveals that high levels of negative stereotypes, through normal, subtle, and often subconscious

processes, can guide expectations and interactions with others in ways that reduce the quality of service provided by mental health professionals to persons who belong to stigmatized social groups (American Psychological Assocation Presidential Task Force on Preventing Discrimination and Promoting Diversity 2012). Importantly, even the most well-meaning and consciously egalitarian individual who holds a negative stereotype of a social group will likely discriminate against a member of that group when he or she has an encounter with that individual. These are universal processes, and all persons are capable of them.

Considerable scientific research indicates that these processes affect the care provided by physicians and other clinicians. A landmark 2003 report from the National Academy of Medicine concluded that across virtually every type of medical intervention, from the most simple to the most sophisticated, blacks and other minorities receive fewer procedures and poorer quality medical care than whites (Smedley, Stith, and Nelson 2003). Most physicians, like other professionals and ordinary Americans, have an implicit preference for whites over blacks (Sabin et al. 2009), and this implicit bias among providers is often associated with biased treatment recommendations in the care of black and other minority patients (van Ryn et al. 2011). Provider implicit bias is also associated with poorer quality of patient-provider communication and lower patient evaluation of the quality of the medical encounter, including provider nonverbal behavior (Cooper et al. 2012; van Ryn et al. 2011).

For example, a study of 422 patients independently observed over five years in a psychiatric emergency room (ER) illustrates how race can play a role in mental healthcare (Segal, Bola, and Watson 1996). The study found that after adjusting for psychotic disorders, severity of disturbance, dangerousness, psychiatric history, use of restraints, time spent in ER, and other factors, compared to other patients, black patients received, on average, one additional dose of psychiatric medication, one additional antipsychotic dose, and an additional half dose of antipsychotic medication by injection. In addition, clinicians spent less time to evaluate a black patient than a white one, and the tendency to overmedicate black patients was lower when clinicians' efforts to engage the patient in treatment (e.g., elicit information, include patient in planning, respond with empathy) were rated as higher.

A recent phone-based experimental study documented discrimination by race, gender, and class in getting access to mental healthcare (Kugelmass 2016). In this study, 326 licensed psychotherapists in New York City received voice mail messages from black and white middle-class and working-class callers seeking an appointment. Each message used a racially distinctive name and a race- and class-based speech pattern. The study found that middle-class seekers were offered appointments at a rate almost three times higher than their working-class peers. Among the middle class, whites were more likely than blacks to get appointments. And among middle-class males, white males were more than twice as likely to get an appointment than their black counterparts. Appointment offer rates did not differ by gender, but women were more likely than men to get an offer of an appointment during their preferred time range. Future research needs to quantify the contribution of provider biases to the well-documented patterns of racial and ethnic inequities in seeking mental healthcare, engagement with treatment, and the severity and course of disease.

Internalized Racism

Internalized racism (or internalized stigma or self-stereotyping) is another pathway by which cultural racism can harm mental health. It refers to the acceptance and personal endorsement by marginalized racial populations of the negative societal beliefs and stereotypes about the inherent deficiencies of one's group in the larger society. It is theorized that the endorsement of the superiority of whiteness and the devaluing of nonwhite groups by stigmatized individuals can lead to feelings of worthlessness, low self-esteem, and poor psychological well-being that can adversely affect their identity, self-competence, and health behavior (Kwate and Meyer 2011).

Several studies have empirically examined the association of internalized racism and mental health. The Nadanolitization Scale was an early measure of internalized racism (Taylor and Grundy 1996). It captures the extent to which blacks are socially uncomfortable with other blacks and endorse traditional racist stereotypes of blacks such as blacks are mentally defective (intellectually, morally, emotionally) or blacks are physically gifted (athletically, sexually, artistically). Research by Jerome Taylor and colleagues revealed that internalized racism was associated with higher consumption of alcohol and higher levels of psychological distress and depressive symptoms (Taylor, Henderson, and Jackson 1991; Taylor and Jackson 1990, 1991).

In the NSBA, internalized racism was assessed by capturing the degree of agreement with positive and negative stereotypes of black people. A study of the 2,107 black American adults in that sample found that both the rejection of positive stereotypes and the endorsement of negative stereotypes were associated with lower levels of self-esteem (Brown, Sellers, and Gomez 2002). More recently, the NSAL has also measured internalized racism by capturing the extent to which blacks endorse negative stereotypes of blacks. One study found that African Americans who had high levels of racial identity but also scored high on internalized racism were more likely to have lower levels of mastery and higher levels of depressive symptoms (Hughes et al. 2015). Another study using this same sample found that internalized racism was positively associated with depressive symptoms and serious psychological distress among African Americans, US-born Caribbean Blacks, and foreign-born Caribbean Blacks (Mouzon and McLean 2017). However, African Americans had the highest levels of internalized racism, followed by US-born Caribbean Blacks and then foreign-born Caribbean Blacks, and the association with mental health symptoms was weakest for the foreign-born group. Another study using the NSAL data found, surprisingly, that among Caribbean Blacks but not African Americans, internalized racism was associated with a reduced risk of having major depressive disorder in the past year (Molina and James 2016).

The internalization of negative cultural images by stigmatized groups may also create expectations, anxieties, and reactions that can not only adversely affect psychological well-being but also decrease motivation for socioeconomic attainment (Kwate and Meyer 2011). Research in the United States reveals that when a stigma of inferiority was activated under experimental conditions, student performance on an examination was adversely affected (Steele 1997). African Americans who were told in advance that blacks perform more poorly on exams than whites, women who were told that they perform more poorly than men, and white men who were told that they usually do worse than Asians all had lower scores on an examination than control groups who were not confronted with a stigma of inferiority (Fischer et al. 1996; Steele 1997). Limited scientific evidence also indicates that the presence of stereotype threat in the encounter of a minority patient with a provider may adversely affect the quality of interaction with the provider and patient adherence to medical recommendations

(Aronson et al. 2013). This may be especially important in the context of mental healthcare where the quality of patient-provider interpersonal interaction can be a critical contributor to the quality of the therapeutic relationship.

Unlike the case of discrimination and health, research on internalized racism and mental health is in its infancy. At the present time, we are unaware of the optimal assessment of internalized racism and the mechanisms and processes by which this type of racism adversely affects mental health. However, it is urgent that future research addresses this gap given that studies with the Nadanolitization Scale using nonrepresentative community and student samples have estimated that one in three blacks score high on internalized racism (Taylor and Grundy 1996). A similar estimate comes from a study of Indigenous adults in Australia in which internalized racism was measured by a four-item scale that captured agreement with not feeling good about being Indigenous, wanting Indigenous people to think and act more like other Australians, disagreeing that Indigenous people have fewer opportunities than other Australians, and reporting not being accepted by other Indigenous people (Paradies and Cunningham 2009). The study found that one-third of Aboriginal adults had high levels of internalized racism. We are also not clear about the factors that increase the likelihood that processes of internalized racism are triggered. For example, research reveals that exposure of American Indians to mascots can adversely affect a sense of self-esteem and community worth (Fryberg et al. 2008). Future research needs to identify the extent to which processes of internalized racism are operative within this context or if there are other processes linked to cultural racism that are at work.

OTHER KEY PRIORITIES FOR FUTURE RESEARCH

There are a number of emerging mental risks that require more systematic attention to identify and effectively address current and future sources of stress and mental health challenges for populations of color. These include hostility and stress in the current political environment, the complex relationships between mental health and physical health, the mental health consequences of climate change and other emerging environmental risks, identifying sources of psychological resilience, and understanding and confronting patterns of increased mental health risks.

Hostility and Stress in the Larger Culture

There is an urgent need to quantify and better understand the mental health consequences of stressors linked to the increasing levels of racial hostility and political polarization in recent years. The election of President Barack Obama played a critical role. A review of research on this topic revealed that his election led to the rise of the Tea Party movement with its racist rhetoric, declining white support for the Democratic party, and increases in the belief among whites that racism no longer exists that was combined with opposition to efforts to address racial inequities (Parker 2016). His election also triggered a large increase in racial animosity in social media that included the emergence of anti-Obama Facebook pages, hate websites, and the proliferation online of historical racial stereotypes that are no longer utilized in most mainstream media outlets (Moody 2012). The campaign of Donald Trump further brought to the surface preexisting negative attitudes toward immigrants, Muslims, and racial and ethnic minorities. A national but nonrepresentative survey of 2,000 kindergarten through grade 12 teachers documented that more than half of them indicated that since the Trump presidential campaign had begun, there had been an increase among some of their students in using slurs, name-calling, and saying bigoted and hostile things about immigrants, minorities, and Muslims, and many students in these targeted groups were afraid and worried about potential negative effects on their families after the election (Costello 2016). For example, some African American children whose families had been in the United States for centuries were concerned about a return to slavery and black people being sent back to Africa.

And in the wake of Trump's election, there was a marked spike in hate crimes and harassment with K–12 schools being the most commonly reported location where these incidents of harassment had occurred (Lenz 2016). This hostility in the larger environment contributed to high levels of fear and stress in the population. A national survey conducted by the American Psychological Association in January 2017 reported that two-thirds of all American adults said that they were stressed about the future of the country. Moreover, 69% of blacks, 57% of Asians, 56% of Hispanics, and 42% of non-Hispanic whites reported that the outcome of the 2016 presidential election was a very significant or somewhat significant source of stress (American Psychological Association 2017). Some 72% of

Democrats and 26% of Republicans were similarly stressed. Recent studies have documented that residing in communities with high levels of racial prejudice is associated with an elevated risk of mortality, especially for racial minorities who reside in those communities (Chae et al. 2015; Lee et al. 2015; Leitner et al. 2016). Similarly, elevated mortality risk has been found among lesbian, gay, and bisexual individuals living in areas with high levels of anti-gay prejudice (Hatzenbuehler et al. 2014). However, inadequate research attention has been given to documenting the short-term and long-term mental health consequences of residence in hostile environments and the specific mechanisms that undergird these associations.

Relatedly, research also suggests that anti-immigrant policies and initiatives can trigger hostility toward immigrants that can lead to perceptions of vulnerability, fear, and psychological distress for both immigrants who are directly targeted and those who are not direct targets (Szkupinski Quiroga, Medina, and Glick 2014). A study in Arizona documented that this hostility in the environment led to reductions in the use of healthcare and social services among Hispanic women, with the effect being larger among Latinas who were US-born than among those who were foreign-born (Toomey et al. 2014). Descriptions of federal immigration raids also suggest that they can have negative emotional effects on an entire community (Novak, Geronimus, and Martinez-Cardoso 2017). A recent study assessed the relationship between a large immigration raid at a meat-processing plant and birth outcomes in the surrounding community. It found that there was an increase in low birthweight to infants born to Hispanic but not non-Hispanic white mothers in the year after the raid compared to those born in the year before the raid (Novak et al. 2017). Similarly, a study in a midwestern US community found that immigration enforcement stressors and levels of self-rated ill health were higher for the Latino community residents who were interviewed after an immigration raid compared to those interviewed before the raid (Lopez et al. 2017). More systematic efforts are needed to document and quantify this stress, fear, and vulnerability and assess their consequences for mental health. An earlier body of research found that increases in hostility in the media and general society against Muslims and persons from the Middle East in the wake of the September 11, 2011, terrorist attacks were associated with an increased risk of low birthweight and preterm birth for Arab American women (Lauderdale 2006) and elevated levels of mental

health symptoms among persons from the Middle East (Padela and Heisler 2010).

Understanding Complex Interactions between Physical Health and Mental Health Risks

Several lines of evidence suggest that among racial minorities, there are complex and sometimes paradoxical associations between mental and physical health that we need to better understand so that we can improve overall health. First, some evidence suggests that psychological resources and positive emotional health can be associated with negative effects on physical health. For example, a study that followed a sample of relatively economically disadvantaged African American adolescents in the rural southeast over time found that those low socioeconomic status (SES) youth with high self-control and self-regulation at age 11 succeeded academically and emotionally in young adulthood and at age 20 used fewer drugs and drank less alcohol (Brody et al. 2013). However, these same youth had greater obesity, higher blood pressure, and higher levels of stress hormones and epigenetic aging (based on DNA methylation profiles) than their low SES peers who were low on self-control and their higher SES peers (Chen et al. 2015; Miller et al. 2015).

Similarly, in the National Longitudinal Study of Adolescent to Adult Health, lower levels of depression are associated with college completion irrespective of childhood disadvantage and for all racial-ethnic groups (blacks, whites, and Hispanics; Gaydosh et al. 2018). In contrast, college completion is associated with lower metabolic syndrome for whites irrespective of exposure to childhood disadvantage, but among black and Hispanic youth, college completion is associated with higher metabolic syndrome among those from disadvantaged childhood environments. Future research needs to better understand the contexts and exposures that appear to have opposite effects on mental health versus physical health. One useful framework is John Henryism, or high-effort, active coping, that is a positive attribute among well-resourced racial minorities but is associated with worse health among those who lack the resources to facilitate success (are low SES) or encounter blocked opportunity (James 1994). However, it is unclear how processes linked to John Henryism and blocked opportunity relate to each other and can combine to affect physical and mental health. One national study of African Americans found that education was positively associated with experiences of racial

discrimination and that both John Henryism and discrimination were associated with the increased odds of major depression but that John Henryism did not moderate the relationship between discrimination and depression (Hudson et al. 2016).

Analyses of longitudinal data also indicate that African American and Hispanic youth who experience upward socioeconomic mobility report greater increases in acute and chronic discrimination compared to their peers whose SES was stable (Colen et al. 2018). These experiences of discrimination are adversely related to health and partially contributed to disparities in health between these minority young adults and their white counterparts. This research is broadly consistent with a larger paradox in the research literature between mental and physical health risks among African Americans. African Americans tend to have worse health than whites on virtually every indicator of physical health, but as noted earlier, despite higher levels of stress, they have lower rates of stress-related mental health outcomes, such as major depression, than whites. We do not understand what drives this phenomenon. Analyses of national data revealed that lower levels of depression among blacks than whites was evident across virtually every demographic subgroup defined by sex, age, and education—a finding that is not consistent with the view that the observed pattern is due to selection bias because of limited coverage of some subgroups of the black population in surveys due to incarceration or homelessness (Barnes, Keyes, and Bates 2013). Other recent analyses have documented that neither high levels of social support among blacks (Mouzon 2013) nor the elevated levels of religious involvement among African Americans compared to whites account for the racial differences in depression (Mouzon 2017). A novel hypothesis to account for this paradox was that engagement in unhealthy behaviors (eating, alcohol and tobacco use) to cope with stress is more protective of depression risk for blacks than whites (Jackson, Knight, and Rafferty 2010). Using a large national sample, Keyes, Barnes, and Bates (2011) did not find support for this hypothesis. Engaging in unhealthy behaviors was not associated with reduced risk of depression for blacks or whites. So the paradox remains as an important scientific question to be answered.

Future research must also pay greater attention to the contribution that mental health symptoms among racial-ethnic minorities may play in the elevated risk of chronic physical conditions. A recent study that pooled data from 16 prospective studies in the United Kingdom and followed people for

about 10 years found that higher levels of distress were associated with increased risk of cancer of all sites, cancers not related to smoking, as well as leukemia and colorectal, prostate, pancreatic, and esophageal cancer (Batty et al. 2017). The associations persisted after adjustment for demographic factors, SES, and smoking and alcohol use. A graded stepwise risk was evident between psychological distress and prostate and colorectal cancer. This research highlights the value of sustained research attention that would enable us to better understand how risk and protective factors relate to each other and combine over time to affect physical and mental health and the relationship between them.

Climate Change, Environmental Risks, and Mental Health

As we look to the future, it is also important to give attention to assessing the mental health consequences of the stressors that may emerge from natural and manmade disasters. For example, a monthly survey in Flint, Michigan, during the time of the recent water crisis found that community respondents reported stress, anxiety, depression, and fear within the community due to the ongoing crisis (Cuthbertson et al. 2016). These negative mental health consequences were viewed as being related not only to the actual contamination of the water but also to distrust of the official response to the crisis and the inadequacy of the response (Cuthbertson et al. 2016). Similarly, a review of research on the mental health impact of a devastating earthquake in Japan in 2011 found long-term negative mental health impacts for the population affected (Ando et al. 2017). While posttraumatic stress symptoms tended to decline over time and initial increases in suicide decreased two years after the quake, elevated symptoms of depression persisted during the entire follow-up period. These findings suggest the need for long-term and ongoing mental health support for communities and populations that face high levels of exposure to traumatic experiences.

Climate change is also likely to exacerbate the challenges faced by vulnerable populations and add to their mental health burden. For example, because of climate change, many cities are likely to get warmer and heat waves are expected to last longer, increase in frequency, and be more intense (Jesdale, Morello-Frosch, and Cushing 2013). Prior research has found that there are large racial disparities in heat-related deaths. Urban tree canopy can mitigate the negative effects of extreme heat, and urban trees can provide shade, reduce wastewater loads, reduce air pollution, and reduce noise pollution. However, disadvantaged SES and racial-ethnic groups are more vulnerable to heat exposure because they are more likely to have higher rates of illness (e.g., cardiovascular disease, respiratory, renal, diabetes), reside in high-crime areas (fear of assault is a barrier to opening windows or traveling to cooler locations), and occupy poorer quality housing (Gronlund 2014). They also have lower access to working fans, cool public spaces, and air conditioning (Gronlund 2014). All of these factors suggest that the mental health burden will be greater for socially disadvantaged racial and ethnic populations. Inadequate attention has been given to examining the short- and long-term mental health impact of natural or manmade environmental crises.

Protective Factors

A few studies have identified psychosocial resources that can reduce the negative effects of the stress of discrimination on mental health. Religious involvement has reduced the negative effects of discrimination on health in two national studies. In prospective analyses using data from the NSBA, higher levels of religious involvement (church attendance and seeking religious guidance in everyday life) reduced the positive association between racial discrimination and psychological distress (Ellison, Musick, and Henderson 2008). In the national survey of Midlife Development in the U.S. (MIDUS), church attendance buffered the adverse effect of discrimination on negative affect among African Americans but not whites (Bierman 2006). In a study of 414 rural low-income black mothers, church-based social support captured by a 21-item scale that assessed support from one's relationship with God, with the congregation, and from the clergy buffered the negative effect of discrimination on depressive symptoms (Odom, Vernon-Feagans, and Family Life Project Key Investigators 2010). A measure of optimism also reduced the negative effect of discrimination on depression. Relatedly, a study using a 31-item measure of trait mindfulness in a nonrepresentative community sample of 605 adults found that mindfulness reduced the negative effects of discrimination on depressive symptoms (Brown-Iannuzzi et al. 2014).

The receipt of social support from family members and friends is widely recognized as a psychosocial resource that can reduce the negative effects of stressful life experiences on health. A few studies have documented a similar pattern for the stress of

discrimination. A study of 714 black adolescents, ages 10 to 12 at baseline and interviewed three times over five years, found that the negative effects of discrimination on depressive symptoms were reduced among those adolescents who had had high levels of support from their parents and friends (Brody et al. 2006). A subsequent follow-up of this same study found that high levels of social support (caregiver emotional and instrumental support and peer support) reduced the negative effect of discrimination on allostatic load (Brody et al. 2014).

Future research is needed to better understand the conditions under which particular aspects of religious involvement, social support, and psychological resources can reduce the negative effects of the stress of discrimination on mental health. Research is also needed to characterize the full range of resources that might play a role in ameliorating the negative impacts of discrimination on mental health.

Emerging Mental Health Challenges

There is evidence of large and worsening mental health challenges for minority youth. Suicide data are illustrative. Native Americans have the highest rates of suicide. It is the eighth leading cause of death overall and the second leading cause for individuals between the ages of 10 and 34 (Odafe et al. 2016). There are also marked increases in suicide rates among Hispanics, especially among adolescents and young adults. Suicide is the third leading cause of death for blacks aged 15 to 24, and although blacks still have lower suicide rates than whites, an increase in suicide among black youth in recent decades has narrowed the racial gap. A recent study documented that suicide was the leading cause of death among school-aged children in the United States (Bridge et al. 2015). The study found that although overall suicide rates for children aged 5 to 11 years had remained stable between 1993 to 1997 and 2008 to 2012, the rate had declined for whites and remained stable for Hispanics and other racial groups but had almost doubled for blacks.

More research is needed to identify the determinants of these challenges and identify how they can be effectively addressed. A recent study (Edwards et al. 2017) of 365 emerging adults (96% African American), aged 18 to 24 and affiliated with a university in a northeastern metro area, sheds light on the significant stressful challenges that youth perceive. The young adults report that their biggest concerns were aggressive policing, high levels of community violence, and the instability of their housing. These youth reported that they faced constant threat and fear, high levels of hopelessness, and low perceived economic opportunity. Accordingly, they lived in the moment because of their uncertainty about their future. Changing the current trajectory of stress and mental health problems will require significant investment in enabling youth to develop skills and resources to confront and cope with the stressors they face.

CONCLUSION

Understanding the ways in which the social context of populations of color affect their mental health requires detailed and comprehensive characterization of the exposures in their social context that can affect health. The overview of the research provided here highlights the multiple ways in which racism can affect mental health. Other conditions linked to race and ethnicity can also play a role in shaping the mental health of disadvantaged populations, and we need to understand these stressors in their full complexity. Future research must characterize this full range of risk factors and resources that may be unique to or more prevalent among stigmatized racial and ethnic populations and identify how they combine with each other over the life course to affect patterns of mental health. Such research must be attentive to the changing social context of racial-ethnic status and incorporate emerging threats to mental health as well as opportunities that may arise to promote enhanced mental wellbeing.

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