SSM -Population Health 2 (2016) 595–602

Contents lists available at ScienceDirect

SSM -Population Health

journal homepage: www.elsevier.com/locate/ssmph

Article

Self-identified race, socially assigned skin tone, and adult physiological dysregulation: Assessing multiple dimensions of "race" in health disparities research ☆

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ARTICLE INFO

Article history:
Received 16 February 2016
Received in revised form
28 June 2016
Accepted 28 June 2016

Keywords:
Skin tone
Allostatic load
Racial identification
Socially-assigned race
Socioeconomic status

ABSTRACT

Despite a general acceptance of "race" as a social, rather than biological construct in the social sciences, racial health disparities research has given less consideration to the dimensions of race that may be most important for shaping persistent disparities in adult physical health status. In this study, we incorporate the social constructionist view that race is multidimensional to evaluate the health significance of two measures of race, racial self-identification and the socially perceived skin tone of black Americans, in a sample of black and white adults in the Nashville Stress and Health Study (N=1186). First, we use the approach most common in disparities research—comparing group differences in an outcome—to consider self-identified racial differences in allostatic load (AL), a cumulative biological indicator of physical dysregulation. Second, we examine intragroup variations in AL among blacks by skin tone (i.e. light, brown, or dark skin). Third, we assess whether the magnitude of black-white disparities are equal across black skin tone subgroups. Consistent with prior research, we find significantly higher rates of dysregulation among blacks. However, our results also show that racial differences in AL vary by blacks' skin tone; AL disparities are largest between whites and dark-skinned blacks and smallest between whites and light-skinned blacks. This study highlights the importance of blacks' skin tone as a marker of socially-assigned race for shaping intragroup and intergroup variations in adult physiological dysregulation. These results demonstrate the importance of assessing multiple dimensions of race in disparities research, as this approach may better capture the various mechanisms by which "race" continues to shape health.

Introduction

Racial health disparities are significant and convey real differences in life chances. Research in this area consistently shows that blacks in the United States live less healthier and much shorter lives than their similarly situated white counterparts (Byrd & Clayton, 2000; Du Bois 1899; Logan, 2009; McDaniel, 1998; Steckel, 1986a, 1986b). The persistence of black-white health disparities, even after controlling for socioeconomic status (SES), has stimulated scientific interest in understanding how race is such a consistent predictor of health disparities, especially when social scientists tend to agree that race is not a biological characteristic (Dressler, Oths, & Gravlee, 2005). The social constructionist perspective provides some insight into this question, arguing that race is a multidimensional relational construct that includes how individuals self-identify and how they are perceived by others (Roth, 2016). As Jones et al. (2008) have noted, race is often quickly and routinely assigned without the benefit of queries into individuals' self-identification, ancestry, culture, or genetic background. Therefore, understanding how and why multiple dimensions of blacks' racial identification are linked to health will move the study of black-white health disparities from mere description to an explanation of the origins of racial group differences in well-being.

The present study investigates how and why self-identified and socially-assigned markers of race are associated with disparities in allostatic load, an indicator of cumulative physiological dysregulation. Specifically, we evaluate the extent to which

☆This work was supported by the National Institute on Aging at the National Institutes of Health (grant numbers T32-AG000037 and R01-AG034067). This research was supported by grants (PI: R. Jay Turner) from the Office of Behavioral and Social Science Research and the National Institute on Aging.

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http://dx.doi.org/10.1016/j.ssmph.2016.06.007

interviewer-rated skin tone explain variations in allostatic load among blacks. We also examine black-white disparities, whether they co-vary across skin tone groupings (i.e. light, brown, and dark-skinned blacks), and the extent to which SES mediates the links between self-identified or socially-assigned race and health. To examine these links, we draw on data from a representative community sample of black and white adults in Nashville, Tennessee. Our findings suggest that racial self-identification and interviewer ascribed skin tone are important factors that shape differences in allostatic load.

Background

There is a growing public health interest in understanding the ways that race gets "under the skin" to produce population-level health disparities. One view, known as the "weathering hypothesis," was originally proposed by Geronimus, Hicken, Keene, & Bound (2006:82) and argues, "…the stress inherent in living in a race-conscious society that stigmatizes and disadvantages blacks may cause disproportionate physiological deterioration, such that a black individual may show the morbidity and mortality typical of a White individual who is significantly older". Though originally formulated to explain black-white disparities in low birthweight and mortality among infants (Geronimus, 1991, 1996), other studies evaluating racial disparities in health have reached similar conclusions. These studies find evidence that the weathering process occurs across outcomes including hypertension (Geronimus, Bound, Keene, & Hicken, 2007), functional status (Geronimus, Bound, Waidmann, Colen, & Steffick, 2001), mortality (Astone, Ensminger, & Juon, 2002). Recent research has extended the investigation of weathering by considering biological assessments of health such as allostatic load.

Following prior research, we view allostatic load as a meaningful indicator of adult physical health status that is consistent with the weathering hypothesis. Allostatic load is a measure of the cumulative burden or "wear and tear" on the body resulting from repeated adaptation to stressors (McEwen, 1998; McEwen & Seeman, 1999; McEwen, 2003). This measure is particularly useful for examining the significance of self-identified and socially-assessed dimensions of race for several reasons. First, allostatic load is measured across multiple physiological systems (Geronimus et al., 2006), which provides a more global assessment of physical health status than the consideration of single-system measures of health. Second, allostatic load acts as a pre-clinical marker of physiopathological processes that may predict poor health and lower life expectancy, but have yet to be detected clinically (Karlamangla, Zhou, Reuben, Greendale, & Moore, 2006). Third, prior studies have shown that allostatic load is an effective measure that predicts not only poorer levels of health, but also elevated risk for premature mortality (Crimmins & Beltrán-Sánchez, 2010; McDade, Williams, & Snodgrass, 2007). Finally, allostatic load may effectively capture the broad physiological impact of the structural and interpersonal stressors associated with racial minority status, which prior research suggests is an important underlying mechanism of health disparities (Geronimus et al., 2006; Lewis, Cogburn, & Williams, 2015; Williams, Priest, & Anderson, 2016;). Given these strengths, an examination of allostatic load may yield important new insights into the ways that multiple indicators of race may shape intra- and intergroup differences in health.

Accumulating evidence documents racial disparities in allostatic load, such that blacks report significantly higher levels of allostatic load than whites (Crimmins & Saito, 2000; Geronimus et al., 2006; Kaestner, Pearson, Keene, & Geronimus, 2009; Peek et al., 2010; Seeman, Epel, Gruenewald, Karlamangla, & McEwen, 2010). Consistent with the weathering hypothesis, these patterns also persist across the life course. For instance, Crimmins, Johnston, Hayward, and Seeman (2003) find that the age pattern in allostatic load varies by race/ethnicity in the National Health and Nutrition Study, suggesting accelerated dysregulation among blacks. Furthermore, Geronimus et al. (2006) note that although black-white allostatic load disparities were present across all age groups, they were especially pronounced after age 30; in the same study, they find racial disparities were also observed at every SES level and greatest among high SES blacks. Taken together, these studies demonstrate significant black-white differences in allostatic load. Nevertheless, the pathways linking race to physiological well-being remain unclear.

Although prior research has made significant contributions to our understanding of ways that race, vis-à-vis racial self identification, is linked to health differentials, the question of how and why multiple dimensions of blacks' racial identification are linked to health disparities remains unanswered. Specifically, while the conceptualization and measurement of race is critical in health disparities research, most studies in this area to date have relied on measures of self-reported racial identification that corresponds to one of predetermined racial classifications outlined by the Office of Management and Budget (Saperstein, Penner, & Light, 2013; Snipp, 2003). In reality, race is a multidimensional marker of difference based on how individuals describe themselves, and how others perceive them (Campbell & Troyer, 2007; Harris, 2002).

A key dimension of socially-assessed race is skin tone. In this study, we consider interviewer-ratings of blacks' skin tone as one aspect of blacks' observed racial identification or socially-assigned race because interviewer assessments represent perceptions of generalized others. As noted earlier, within the context of social interactions, individuals often rely on external phenotypical characteristics to determine the racial identification of others (Jones et al., 2008). Therefore, inclusion of interviewer-rated skin tone allows for the examination of how socially perceived skin tone, a proxy for socially-assigned racial identification, may impact the physiological well-being of black Americans and shape racial health disparities. In other words, we consider whether individuals' own racial group identification or the way they are identified by others via socially perceived skin tone, differentially shape patterns in allostatic load. By examining both self-identified and socially-assigned race, we aim to clarify the ways the multidimensional construct of race influences health and well-being.

Socially-Assigned Skin Tone and Health

Prior research on skin tone and physical health provides some of the strongest evidence of the importance of skin tone for health among black Americans. For example, studies of skin tone and hypertension have long shown that dark-skinned blacks have elevated blood pressure relative to light-skinned blacks, though adjusting for SES has explained some of the connection (Klonoff & Landrine, 2000; Krieger, Sidney, & Coakley, 1998). In addition, recent findings documenting the association between interviewer-assessed skin tone and blacks' self-rated physical health status further suggest links between skin tone and health risk, with dark-skinned blacks reporting worse self-rated health status (Monk, 2015). Although these and other studies underscore the importance of socially perceived skin tone for shaping the health of black Americans, less is known about the ways that these racial identifications shape physiological well-being.

Since research on the association between skin tone and health is limited, explanations of the mechanisms that may undergird this relationship are not yet well-developed. Nevertheless, extant research points to both structural and interpersonal processes. There is consistent evidence that lighter skin tone is associated with more years of education, more prestigious occupations, and