

# An identity-based motivational model of the effects of perceived discrimination on health-related behaviors

Group Processes & Intergroup Relations

2016, Vol. 19(4) 415–425

© The Author(s) 2016

Reprints and permissions:

sagepub.co.uk/journalsPermissions.nav

DOI: 10.1177/1368430216634192

gpir.sagepub.com



Laura Smart Richman,<sup>1</sup> Alison Blodorn,<sup>2</sup> and Brenda Major<sup>2</sup>

## Abstract

Perceived discrimination is associated with increased engagement in unhealthy behaviors. We propose an identity-based pathway to explain this link. Drawing on an identity-based motivation model of health behaviors (Oyserman, Fryberg, & Yoder, 2007), we propose that perceptions of discrimination lead individuals to engage in ingroup-prototypical behaviors in the service of validating their identity and creating a sense of ingroup belonging. To the extent that people perceive unhealthy behaviors as ingroup-prototypical, perceived discrimination may thus increase motivation to engage in unhealthy behaviors. We describe our theoretical model and two studies that demonstrate initial support for some paths in this model. In Study 1, African American participants who reflected on racial discrimination were more likely to endorse unhealthy ingroup-prototypical behavior as self-characteristic than those who reflected on a neutral event. In Study 2, among African American participants who perceived unhealthy behaviors to be ingroup-prototypical, discrimination predicted greater endorsement of unhealthy behaviors as self-characteristic as compared to a control condition. These effects held both with and without controlling for body mass index (BMI) and income. Broader implications of this model for how discrimination adversely affects health-related decisions are discussed.

## Keywords

discrimination, health decisions, identity

Paper received 15 May 2015; revised version accepted 17 January 2016.

A large and growing body of research documents the negative relationship between perceived discrimination and health. Self-reported experiences of discrimination are related to decreased psychological health (e.g., Schmitt, Branscombe, Postmes, & Garcia, 2014; Williams, Neighbors, & Jackson, 2003), as well as poorer physical health, including higher rates of hypertension, diabetes, respiratory problems, and cardiovascular disease (Paradies, 2006; Pascoe & Richman, 2009;

Richman & Hatzenbuehler, 2014; Williams & Mohammed, 2009).

<sup>1</sup>Duke University, USA

<sup>2</sup>University of California, Santa Barbara, USA

## Corresponding author:

Laura Smart Richman, Department of Psychology & Neuroscience, Duke University, Box 90086, 417 Chapel Drive, Durham, NC 27708, USA.

Email: lrichman@duke.edu

Most explanations for the negative effects of perceived discrimination on health posit increased stress as a key mediator. Experiences with discrimination are assumed to increase stress, which in turn has a detrimental effect on health. Experimental studies verify that acute exposure to discrimination is associated with increases in the stress hormone cortisol and increases in blood pressure (e.g., Townsend, Major, Gangi, & Mendes, 2011). Although adaptive in the short term, chronic activation of stress systems can result in allostatic load, a cumulative wear and tear on the body that is caused by repeated overactivation of physiological systems associated with adapting to stressors (McEwen, 1998). Allostatic load is assumed to be a common biological pathway leading from stress to multiple health maladies, including cardiovascular disease (CVD), diabetes, strokes, ulcers, decreased immune functioning, and cancers (McEwen, 1998).

Direct effects of perceived discrimination on stress responses are not the only way in which perceived discrimination can affect health outcomes. Perceived discrimination may also influence health indirectly by affecting health behaviors. For example, perceived discrimination is related to increased rates of alcohol and substance abuse (Gibbons et al., 2010; Richman, Boynton, Costanzo, & Banas, 2013). Furthermore, longitudinal studies demonstrate that perceived discrimination prospectively predicts both increased engagement in unhealthy behaviors and weight gain (Cozier, Wise, Palmer, & Rosenberg, 2009; Cunningham et al., 2013). In one of the few experimental studies on this issue, Pascoe and Richman (2011) found that when African Americans were asked to recall a personal experience of discrimination (vs. a neutral event), they were more likely to subsequently prefer unhealthy over healthy foods. Such findings suggest that perceived discrimination may be an important factor in sustaining substantial racial differences in obesity rates (Ogden, Carroll, Kit, & Flegal, 2013) and contribute to well established health disparities between African Americans and White Americans (Williams & Mohammed, 2009).

Surprisingly, little theoretically driven research has examined *why* perceived discrimination leads

to engagement in unhealthy behaviors. Some authors propose that engaging in unhealthy behaviors such as smoking, drinking, and consuming high caloric foods are ways of coping with the stress stemming from perceived discrimination (e.g., Brondolo, Brady Ver Halen, Pencille, Beatty, & Contrada, 2009; Jackson, Knight, & Rafferty, 2010). While this is a plausible pathway, the current research introduces an additional pathway that may also contribute to the link between perceived discrimination and engagement in unhealthy behaviors. As shown in Figure 1, we propose an *identity-based motivation pathway* by which perceived discrimination leads individuals to engage in ingroup-prototypical behaviors. First, we propose that perceived discrimination should lead to higher ratings of ingroup-prototypical behavior as being self-characteristic (Path A). This effect should be moderated by the extent to which people view those behaviors as being ingroup prototypical (Path B). For example, African Americans who view eating fried food as a typical behavior of their racial group may be more likely to indicate that eating fried food is self-characteristic in response to perceived discrimination. Perceptions of unhealthy ingroup-prototypical behaviors as being self-characteristic should then lead to an increased likelihood of engaging in those unhealthy behaviors (Path C). Finally, engaging in unhealthy behaviors predict poor health outcomes (Path D). The cumulative effects of engaging in identity-prototypical behavior in response to discrimination may thus contribute to racial health disparities.

The theoretical underpinning of our identity-based pathway stems from theories of identity-based motivation (e.g., Cheryan & Monin, 2005; Oyserman et al., 2007; Tajfel & Turner, 1979). According to these theories, people derive a significant sense of who they are, or their identity, from the social groups with which they are affiliated (Tajfel & Turner, 1979). Belonging to a group, among other things, confers a sense of self-worth (Tajfel & Turner, 1979) and instills the social world with meaning (Hogg, 2005). Hence, people are highly motivated to feel good about their groups, be like their ingroup, differentiate

their ingroup from outgroups, and engage in ingroup-prototypical behaviors while avoiding out-group-prototypical behaviors. Behaviors seen as ingroup-prototypical are “identity-infused.” These behaviors carry positive tones of inclusion and signal one’s social identity to the self and others. Engaging in identity infused behaviors may thus fulfill the need to belong (Richman & Leary, 2009).

Perceived discrimination is a potent form of identity threat. Several empirical studies demonstrate that experiencing discrimination leads to increased group identification (Branscombe, Schmitt, & Harvey, 1999), especially among individuals who are already highly group-identified. For example, McCoy and Major (2003) found that highly identified Latino/a American students identified even more strongly with their ethnic group after reading about pervasive discrimination toward their ethnic group whereas individuals low in group identification identified even less. Past findings from research on self-stereotyping in response to threats to group status and distinctiveness also point to the important role of group identification in this process (Spears, Doosje, & Ellemers, 1997). High group identity predicts higher ratings of how typical of the group people rate themselves after experiencing some form of threat to their group status or distinctiveness. Increasing identification and self-stereotyping are two potential ways to validate one’s social identity in response to discrimination/group-threat. In our model, we propose that engaging in ingroup-prototypical behaviors is another way to validate one’s social identity that has particular implications for understanding health behavior.

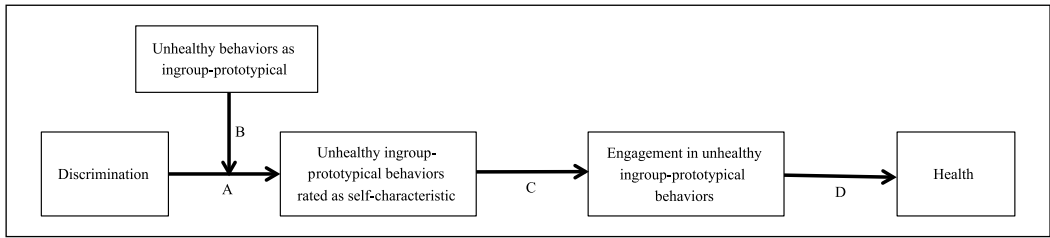
Identity-based responses to discrimination can have either positive or negative health consequences, depending on whether ingroup-prototypical behaviors are relatively healthy or unhealthy. In general, advantaged or high status groups (such as Whites) are better able than disadvantaged or low status groups (e.g., African Americans) to claim esteemed behaviors (e.g., eating healthy, achieving at school) as ingroup-defining (Oyserman et al., 2007). Extending this to health behaviors, Oyserman and colleagues found that ethnic

minorities perceive healthy eating and exercise behaviors as “White” behaviors and less healthy behaviors (e.g., eating fried, carbohydrate dense food) as more characteristic of their own ethnic group. Thus, as *unhealthy* behaviors are considered ingroup-prototypical among ethnic minorities, engaging in ingroup-prototypical behaviors in response to discrimination has the potential to undermine health. The valuing of unhealthy behaviors among ethnic minorities, for example, leads to feelings that health is not personally relevant or important (i.e., health fatalism; Oyserman et al., 2007). Thus, we propose that perceived discrimination increases the tendency to engage in unhealthy behaviors to the extent that people perceive unhealthy behaviors to be ingroup-prototypical.

The goals of the present paper were (a) to present our identity-based pathway model of how perceived discrimination contributes to engagement in unhealthy behaviors, (b) to conduct an initial test of a portion of this model, (c) to discuss implications and importance of our model for developing a more nuanced understanding of the various ways in which discrimination contributes to health disparities, and (d) to outline additional research that is needed to establish support for untested portions of our model. We conducted two studies to provide an initial test of key hypotheses derived from our model (see Figure 1). We hypothesized that, in comparison to a control condition, racial discrimination would lead to an increased desire to be like the ingroup by rating ingroup-prototypical behavior as self-characteristic among African Americans (Path A). We hypothesized that the extent to which behaviors were viewed as ingroup-prototypical would moderate this effect such that the more behaviors are viewed as common among African Americans, the more likely these behaviors will be rated as self-characteristic following discrimination (Path B).

## Study 1

Study 1 provided an initial test of our hypothesis that discrimination causes African Americans who perceive unhealthy behaviors as ingroup-prototypical to be more likely to endorse these



**Figure 1.** Identity-based health behavior theoretical model.

behaviors as self-characteristic. For Study 1, the manipulation of discrimination was a description of a current news event in which an unarmed Black youth, Trayvon Martin, was shot and killed by a neighbor who considered him to be suspicious. This event garnered considerable news coverage; informal polling of African American students and community members by our research team suggested that the majority of African American college students would be likely to have knowledge of the event and to view discriminatory motives as a contributing factor to the death of Trayvon Martin.

## Method

### Participants

Participants were 53 Black university students and community members. A majority of the participants were women (70.9%) and they were between 17 and 26 years of age ( $M = 19.67$ ,  $SD = 1.73$ ).

### Procedure

Participants were recruited from three different college campuses (a historically Black college or university [HBCU], a large public university, and a private university). Research assistants approached people on campus, inviting them to take a short survey about current events in exchange for nominal monetary compensation. Some students were also recruited through a large introductory psychology class at the HBCU and were given course credit for participation. All participants completed the study via laptop computer in nonlab

settings on campus. After completing the study, participants were paid or granted credit and debriefed.

Participants were told that the study was designed to examine how people respond to current events. They first completed a basic demographics questionnaire and a measure of how much certain health behaviors are ingroup-prototypical.<sup>1</sup> They then were randomly assigned to one of two writing conditions (discrimination vs. control). In the discrimination condition, they were asked to “Please take a moment to reflect on your feelings about the Trayvon Martin case. Spend the next 3 minutes writing about your thoughts or feelings.” In the control condition, they were asked to “Please take a moment to reflect on the weather in your town yesterday. Spend the next 3 minutes describing the weather.” They then wrote their responses to the scenario they were assigned.

Following that task, they completed a “me/not me” categorization task as a measure of how self-characteristic they rated healthy and unhealthy behaviors. Finally, participants were debriefed and compensated with a cash payment.

### Measures

*Measure of ingroup prototypicality.* We assessed individual differences in perceptions of unhealthy behaviors as common among Black/African Americans. Participants rated the extent to which eight unhealthy behaviors (e.g., eating red meat, eating fried foods, going to fast food restaurants) are common among their racial/ethnic ingroup

on a scale of 1 (*not at all common*) to 5 (*very common*). Responses were summed to create an index of ingroup prototypicality ( $\alpha = .91$ ), with higher scores indicating greater perceptions of unhealthy behaviors as common among Blacks.

*Ratings of health behaviors as self-characteristic.* Based on behaviors used in Oyserman et al. (2007), we generated 16 health-related behaviors for assessing ratings of health behaviors as self-characteristic. These health-related behaviors included six unhealthy behaviors (e.g., adding salt to foods, eating fried foods, smoking cigarettes) and 10 healthy behaviors (e.g., buying fresh produce, eating reduced-fat foods, sleeping enough). One hundred and seventy pilot participants (71 Black/African American, 99 White/European American) rated these behaviors on their group prototypicality. To assess group prototypicality, each behavior was rated on a 5-point Likert scale (1 = *much more common among Blacks/African Americans*; 3 = *equally common among Blacks/African Americans and Whites/European Americans*; 5 = *much more common among Whites/European Americans*). The six unhealthy behaviors were rated by both racial/ethnic groups as being more common among Black/African Americans and the 10 healthy behaviors were rated as being more common among White/European Americans. The group prototypicality ratings of the six unhealthy "Black" behaviors ( $M = 2.83$ ,  $SD = 0.50$ ) and the 10 healthy "White" behaviors ( $M = 3.31$ ,  $SD = 0.71$ ) were significantly different from one another,  $F(1, 168) = 55.67$ ,  $p < .001$ . Furthermore, the unhealthy "Black" behaviors prototypicality ratings were significantly below the midpoint of the scale,  $t(168) = -4.42$ ,  $p < .001$ , while the healthy "White" behaviors prototypicality ratings were significantly above the midpoint of the scale,  $t(168) = 5.71$ ,  $p < .001$ . Thus, the health-related behavior stimuli generated for the measure of ingroup prototypicality and the ratings of health behaviors as self-characteristic are indeed differentiated in terms of ingroup prototypicality.

After the writing task, participants completed an adapted version of a "me/not me" task (Aron, Aron, Tudor, & Nelson, 1991). Specifically,

participants identified health behaviors as either self-descriptive or non-self-descriptive by pressing a key labeled "me" or "not me." The health behaviors remained on the screen until participants made their categorization. The behaviors used in the task included the six unhealthy "Black" behaviors ( $\alpha = .85$ ) and the 10 healthy "White" behaviors ( $\alpha = .90$ ) described before. Each behavior was randomly presented to participants three times. To assess ratings of the health behaviors as self-characteristic, we calculated both the proportion of "me" categorizations for both the unhealthy "Black" behaviors and the proportion of "me" categorizations for healthy "White" behaviors (i.e., total "me" categorizations divided by total possible categorizations). Thus, higher scores for these two measures indicate a greater tendency to categorize unhealthy "Black" behaviors as self-characteristic and a greater tendency to categorize healthy "White" behaviors as self-characteristic, respectively.

*Demographics.* Demographic variables assessed included age, gender, race, U.S. residency, family income, and body mass index (BMI) based on self-reported height and weight ( $BMI = \text{weight}/\text{height}^2$ ).

## Results

### *Condition Differences*

We conducted independent sample  $t$  tests in order to test for condition differences on all study measures (see Table 1). The predicted effect of condition on self-characteristic ratings was significant ( $t = -2.05$ ,  $p < .05$ ). Consistent with our hypothesis, participants rated unhealthy "Black" behaviors as more self-characteristic on the "me/not me" task in the discrimination condition ( $M = 0.65$ ,  $SD = 0.15$ ) compared to the control condition ( $M = 0.54$ ,  $SD = 0.23$ ). In other words, participants who reflected on an experience of discrimination were more likely to endorse unhealthy ingroup behaviors as self-characteristic as compared to a neutral control group. In addition, there was no effect of condition on how self-characteristic participants

**Table 1.** Means and standard deviations for study variables (Studies 1 and 2).

	Study 1				Study 2			
	Discrimination		Control		Discrimination		Control	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Ingroup prototypicality	38.96 <sub>b</sub>	4.01	34.35 <sub>a</sub>	7.43	33.36	5.93	35.80	5.50
Self-characteristic ratings: Black behaviors	0.65 <sub>b</sub>	0.15	0.54 <sub>a</sub>	0.23	0.55	0.24	0.55	0.21
Self-characteristic ratings: White behaviors	0.46	0.22	0.47	0.23	0.43	0.21	0.42	0.19

Note. Means with different subscripts differ at  $p < .05$ .

rated healthy “White” behaviors on the “me/not me” task ( $t = 0.16, p = .87$ ).

There was an unanticipated condition difference on ingroup prototypicality beliefs, which were assessed prior to the manipulation ( $t = -2.85, p < .01$ ). Participants in the discrimination condition ( $M = 38.96, SD = 4.01$ ) were higher in perceptions of unhealthy behaviors as common among Blacks than participants in the control condition ( $M = 34.35, SD = 7.43$ ). Thus we were not able to test whether ingroup prototypicality moderated the effect of condition on self-characteristic ratings in the present study.

The results did not differ when controlling for BMI, gender, and for sociocultural variables (i.e., income) that are likely to be of importance in food choices and health-related behaviors.

## Discussion

Study 1 provided support for the first path of our theoretical model (Path A) that discrimination increases the tendency to view unhealthy ingroup-prototypical behaviors as self-characteristic. That is, African American participants who reflected on an experience of group-based discrimination were more likely to endorse unhealthy ingroup prototypical behaviors as self-characteristic than those who reflected on a neutral event. There was no effect of discrimination on likelihood of endorsing healthy “White” prototypical behaviors as self-characteristic however, suggesting that discrimination may be more likely to motivate behaviors associated with one’s ingroup than avoid behaviors associated with one’s outgroup.

Study 2 was designed to replicate the findings of Study 1 and to test whether ratings of ingroup prototypicality of behavior moderate the effect of discrimination on self-characteristic ratings. In Study 1 there were condition differences in ingroup prototypicality ratings, so we were not able to examine potential moderator effects. In Study 2 we sought to address this limitation. An additional limitation of Study 1 was that the control condition was a nonstressful reflection prompt (i.e., the weather), which did not enable us to differentiate whether responses were due to reflection on discrimination-related stress specifically or from reflection on any kind of stressful event. We used a non-race-related stressor as the control condition in the second study for a more stringent test of our hypothesis. We also included a different manipulation of discrimination in Study 2 to further generalize our results. In Study 1 the source of discrimination was a group-based threat, where the discrimination was not directly experienced, but rather, was experienced by a same race group member. In Study 2, the discrimination manipulation was an individual-level threat. By using these two sources of discrimination, we can more broadly generalize our results.

## Study 2

### Method

#### Participants

Fifty Black university students and community members (64% women) between the ages of 17 and 35 years ( $M = 19.74, SD = 2.92$ ) participated.

## Procedure

Participants were recruited from three different college campuses (an HBCU, a large public university, and a private university). As in Study 1, research assistants either sat at a table or approached people on campus inviting them to take a short survey in exchange for nominal monetary compensation. Some students were also recruited through a large introductory psychology class at the HBCU and were given course credit for participation. After completing the study, participants were paid or granted credit and debriefed.

Participants were randomly assigned to one of two scenarios, adapted from Gibbons et al. (2012), both involving stressful workplace situations. In the general stress (control) condition, participants were prompted to describe their responses to a scenario in which a coworker is sick and equipment malfunctions, which may lead to a negative evaluation from a boss. In the discrimination condition, participants described their responses to a situation in which a boss treats them unfairly and insults them using a racial slur.

After completing a demographic information questionnaire and the measure of perceived ingroup prototypicality of health behaviors used in Study 1, participants wrote their responses to the scenario they were assigned.<sup>2</sup> Following that task, they completed the “me/not me” task used in Study 1 to assess ratings of health behaviors as self-characteristic and were then compensated and debriefed.

## Measures

We used the same measures of demographics, ingroup prototypicality of behaviors ( $\alpha = .86$ ), and “me/not me” ratings of behaviors as self-characteristic (unhealthy “Black” behaviors:  $\alpha = .85$ , healthy “White” behaviors:  $\alpha = .85$ ) that were included in Study 1.

## Results

### Condition Differences

We conducted independent sample *t* tests in order to test for condition differences on all study

measures (see Table 1). Although we predicted condition differences, the main effect of experimental condition on the self-characteristic ratings on the “me/not me” task was not significant. In addition, there were no condition differences on ingroup prototypicality beliefs, so we were able to test the hypothesized moderating role of this variable.

### Regression Analyses

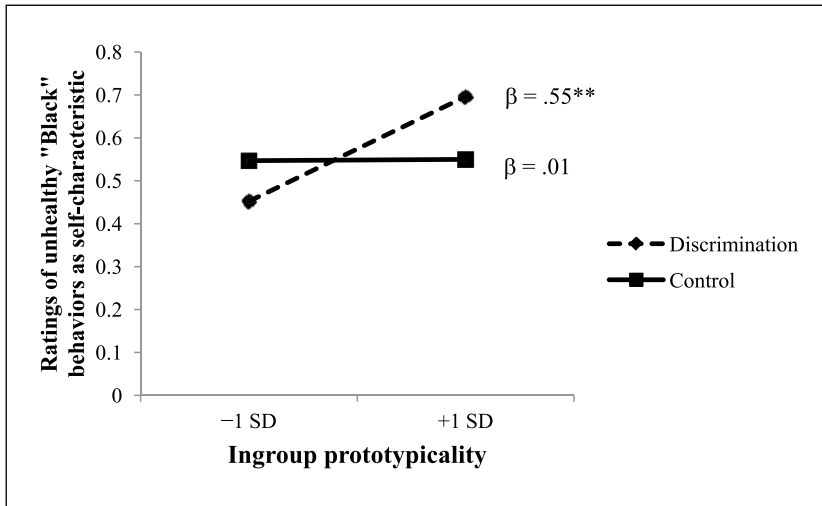
In order to assess whether condition and ingroup prototypicality beliefs interact to predict ratings of unhealthy “Black” behaviors as self-characteristic and ratings of healthy “White” behaviors as self-characteristic, we conducted two hierarchical linear regression analyses.

Although Step 1 was not significant,  $F(2, 47) = 2.15, p = .13$ , the interaction between condition and ingroup prototypicality beliefs marginally predicted ratings of unhealthy “Black” behaviors as self-characteristic at Step 2,  $\beta = .26, p = .06$ ;  $\Delta R^2 = .07, \Delta F(1, 46) = 3.75, p = .06$  (see Figure 2). As expected, in the discrimination scenario condition, perceptions of unhealthy behaviors as common among Blacks (i.e., as identity congruent) were positively and significantly related to the proportion of unhealthy “Black” behaviors categorized as self-characteristic ( $\beta = .55, p < .01$ ). In the control condition, however, perceptions of unhealthy behaviors as common among Blacks were unrelated to the proportion of unhealthy “Black” behaviors categorized as self-characteristic ( $\beta = .01, p = .98$ ).

There were no condition effects for ratings of healthy “White” behaviors as self-characteristic at Step 1,  $F(2, 47) = 0.02, p = .98$ . Furthermore, the interaction between condition and ingroup prototypicality beliefs was not significant at Step 2,  $\beta = -.04, p = .79$ ;  $\Delta R^2 = .002, \Delta F(1, 46) = 0.07, p = .79$ . As with Study 1, controlling for BMI, gender, and income did not alter the results reported before.

## Discussion

In Study 2, we found support for the second path in our theoretical model, in which perceptions of



**Figure 2.** Interaction between condition and perceptions of unhealthy Black behaviors as ingroup-prototypical predicting ratings of unhealthy “Black” behaviors as self-characteristic (Study 2).

unhealthy behaviors as ingroup-prototypical moderate the effect of discrimination on ratings of unhealthy “Black” behaviors as self-characteristic (Path B). That is, for African Americans who perceived unhealthy behaviors to be ingroup-prototypical, individual-based discrimination predicted higher endorsement of unhealthy behaviors as self-characteristic as compared to a control condition. These effects held even after controlling for BMI, gender, and income. These findings replicate and extend Study 1 results by using an alternative form of discrimination. Furthermore, the use of a non-race-related stressful scenario for the control condition demonstrates that the effects on ratings of ingroup-prototypical behaviors as self-characteristic were driven by discrimination rather than more general stress.

## General Discussion

In two studies, we report preliminary evidence supportive of our identity-based motivation model of health behavior. Our studies suggest that, to the extent that racial minorities (African Americans in both samples) perceive unhealthy behaviors to be ingroup-prototypical, discrimination increases the

extent to which they consider those unhealthy behaviors to be self-characteristic. The manipulation of discrimination across the two studies varied in terms of whether it was focused toward a group member or was directly experienced, suggesting a more generalizable effect of how discrimination effects identity-based motivation.

The degree to which people consider a given behavior to be self-characteristic is important to assess because these perceptions then determine the likelihood of engaging in that behavior. Self-relevance has long been recognized as an important variable in predicting consumer attitudes and behaviors (Reed, 2004; Reed, Forehand, Puntoni, & Warlop, 2012). Health behavior choices operate in a similar way, particularly in regard to behaviors such as physical activity, smoking, and diet (see Oyserman, Smith, & Elmore, 2014). Our findings suggest that this response to discrimination can undermine health since it is primarily unhealthy behaviors that are considered ingroup-prototypical among ethnic minorities.

Importantly, we only tested the first two steps of our theoretical model in this research. Thus, support for our identity-based model is at this point only preliminary. Future research



is needed to test the remaining steps in which perceptions of unhealthy ingroup-prototypical behaviors as being self-characteristic lead to an increased likelihood of engaging in those unhealthy behaviors. For example, future studies should directly measure group identity as a mediator of the relationship between perceived discrimination and engaging in ingroup-prototypical behaviors. Future research should also test potential alternative mechanisms underlying the relationship between perceived discrimination and engagement in unhealthy behaviors, such as comfort seeking as a means of stress reduction. We did not include a measure of the extent to which people also considered the unhealthy foods to be comfort foods. Although this could be a possibility for some participants, we think it is unlikely to be the primary mechanism by which these effects occurred, as many of the health behaviors in our studies are not typically associated with comfort seeking, such as adding salt to food and eating red meat. The definition of “comfort food” can vary across individuals and communities, and is thus more effectively defined by participants rather than investigator assumptions (e.g., Wagner, Ahlstrom, Redden, Vickers, & Mann, 2014). This should be assessed in future research to rule out this alternative explanation for our findings. Additional research should also be conducted with more power, since the relatively low number of participants in the current studies limits conclusions that can be drawn from them. Despite this limitation, we believe that research based on underrepresented groups, such as the current studies, are valuable contributions.

Our approach to measuring identity-based responses minimizes self-presentation concerns that have been found in related research. In a prior investigation of dietary choices following threat to Asian Americans’ “Americanism” (e.g., “Do you speak English?”), Asian Americans were motivated to appear more American by choosing foods that were prototypically American (e.g., cheeseburger rather than sushi; Guendelman, Cheryan, & Monin, 2011). The selection of more

prototypically American foods over foods related to an Asian American background also meant that these food choices were less healthy, with both higher caloric and fat intake. The food choice responses in their studies were primarily motivated by attempts to fit into a group and convey a particular identity (American). In contrast, participants in our studies were asked to make their choices via computer where responses were not visible to others and were not within the context of a social interaction. Although this method of participant response has lower ecological validity, it is effective in ruling out self-presentation as a primary motive underlying our findings.

Our findings have implications for how to design interventions that encourage engagement in health promotion activities. Providing health education to at-risk groups is often inadequate as a means to affect behavior. One factor contributing to poor compliance is that in order to successfully engage individuals in health promotion, the health behavior needs to feel identity-congruent (Oyserman et al., 2014). Historically, racial and ethnic minorities have been underrepresented in health promotion advertising and marketing campaigns and that underrepresentation has served to shape what is viewed as ingroup defining. Interventions aimed at decreasing racial disparities in health could benefit from using culturally tailored message components to increase perceived relevance of health promotion behaviors (e.g., U.S. Department of Health and Human Services, 2010).

## Conclusions

We find that discrimination predicted greater endorsement of unhealthy behaviors as self-characteristic. We posit that this perception can then have downstream effects of motivating engagement in unhealthy behaviors—and potential difficulties in initiating and sustaining healthy ones—among racial and ethnic minorities. These findings are an important first step in identifying an identity-based pathway by which discrimination can affect health outcomes.

## Acknowledgment

We would like to thank the Richman lab research assistants for all their help with data collection.

## Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

## Notes

1. Participants also completed the identity centrality subscale (Luhtanen & Crocker, 1992;  $\alpha = .73$ ) prior to the experimental manipulation as a measure of racial group identification. Research suggests that identity centrality may moderate the effect of discrimination on ratings of how self-characteristic the health behaviors are, such that those highly identified with their ethnic/racial group may be more likely to respond to discrimination by rating ingroup behaviors as self-characteristic. We did not find interactions with condition and identity, so identity was excluded in subsequent analyses.
2. As in Study 1, participants also completed the identity centrality subscale (Luhtanen & Crocker, 1992) as a measure of racial group identification prior to the experimental manipulation. Once again, we did not find interactions with condition and identity, so identity was excluded from the subsequent analyses. The reliability for this scale was low ( $\alpha = .47$ ), which limits our ability to interpret these effects.

## References

- Aron, A., Aron, E. N., Tudor, M., & Nelson, G. (1991). Close relationships as including other in the self. *Journal of Personality and Social Psychology, 60*, 241–253. doi:10.1037/0022-3514.60.2.241
- Branscombe, N. R., Schmitt, M. T., & Harvey, R. D. (1999). Perceiving pervasive discrimination among African Americans: Implications for group identification and well-being. *Journal of Personality and Social Psychology, 77*, 135–149. doi:10.1037/0022-3514.77.1.135
- Brondolo, E., Brady Ver Halen, N., Pencille, M., Beatty, D., & Contrada, R. J. (2009). Coping with racism: A selective review of the literature and a theoretical and methodological critique. *Journal of Behavioral Medicine, 32*, 64–88. doi:10.1007/s10865-008-9193-0
- Cheryan, S., & Monin, B. (2005). Where are you really from?: Asian Americans and identity denial. *Journal of Personality and Social Psychology, 89*, 717–730. doi:10.1037/0022-3514.89.5.717
- Cozier, Y. C., Wise, L. A., Palmer, J. R., & Rosenberg, L. (2009). Perceived racism in relation to weight change in the Black Women's Health Study. *Annals of Epidemiology, 19*, 379–387. doi:10.1016/j.annepidem.2009.01.008
- Cunningham, T. J., Berkman, L. F., Kawachi, I., Jacobs, D. R., Seeman, T. R., Kiefe, C. I., & Gortmaker, S. L. (2013). Changes in waist circumference and body mass index in the US CARDIA cohort: Fixed effects associations with self-reported experiences of racial/ethnic discrimination. *Journal of Biosocial Science, 45*, 267–278. doi:10.1017/S0021932012000429
- Gibbons, F. X., Etcheverry, P. E., Stock, M. L., Gerard, M., Weng, C.-Y., Kiviniemi, M., & O'Hara, R. E. (2010). Exploring the link between racial discrimination and substance use. What mediates? What buffers? *Journal of Personality and Social Psychology, 99*, 785–801. doi:10.1037/a0019880
- Gibbons, F. X., O'Hara, R., Stock, M., Gerrard, M., Weng, C., & Wills, T. (2012). The erosive effects of racism: Reduced self-control mediates the relation between perceived racial discrimination and substance use in African American adolescents. *Journal of Personality and Social Psychology, 102*, 1089–1104. doi:10.1037/a0027404
- Guendelman, M. D., Cheryan, S., & Monin, B. (2011). Fitting in but getting fat: Identity threat and dietary choices among U.S. immigrant groups. *Psychological Science, 22*, 959–967. doi:10.1177/0956797611411585
- Hogg, M. A. (2005). Uncertainty, social identity and ideology. In S. R. Thye & E. J. Lawler (Eds.), *Advances in group processes* (Vol. 22, pp. 203–230). New York, NY: Elsevier.
- Jackson, J. S., Knight, K. M., & Rafferty, J. A. (2010). Race and unhealthy behaviors: Chronic stress, the HPA axis, and physical and mental health disparities over the life course. *American Journal of Public Health, 100*, 933–939. doi:10.2105/AJPH.2008.143446
- Luhtanen, R., & Crocker, J. (1992). A collective self-esteem scale: Self-evaluation of one's social identity. *Personality and Social Psychology Bulletin, 18*, 302–318. doi:10.1177/0146167292183006
- McCoy, S. K., & Major, B. (2003). Group identification moderates emotional responses to perceived prejudice. *Personality and Social Psychology Bulletin, 29*, 1005–1017. doi:10.1177/0146167203253466

- McEwen, B. S. (1998). Stress, adaptation, and disease. Allostasis and allostatic load. *Annals of the New York Academy of Sciences*, 840, 33–44. doi:10.1111/j.1749-6632.1998.tb09546.x
- Ogden, C., Carroll, M., Kit, B., & Flegal, K. (2013). *Prevalence of obesity among adults: United States, 2011–2012* (NCHS Data Brief, 131). Hyattsville, MD: National Center for Health Statistics.
- Oyserman, D., Fryberg, S., & Yoder, N. (2007). Identity-based motivation and health. *Journal of Personality and Social Psychology*, 93, 1011–1027. doi:10.1037/0022-3514.93.6.1011
- Oyserman, D., Smith, G. C., & Elmore, K. (2014). Identity-based motivation: Implications for health and health disparities. *Journal of Social Issues*, 70, 206–225. doi:10.1111/josi.12056
- Paradies, Y. (2006). A systematic review of empirical research on self-reported racism and health. *International Journal of Epidemiology*, 35, 888–901. doi:10.1093/ije/dyl056
- Pascoe, E., & Richman, L. (2009). Perceived discrimination and health: A meta-analytic review. *Psychological Bulletin*, 135, 531–554. doi:10.1037/a0016059
- Pascoe, E., & Richman, L. (2011). Effect of discrimination on food decisions. *Self and Identity*, 10, 396–406. doi:10.1080/15298868.2010.526384
- Reed, A., II. (2004). Activating the self-importance of consumer selves: Exploring identity salience effects on judgments. *Journal of Consumer Research*, 31, 286–295. doi:10.1086/422108
- Reed, A., II, Forehand, M., Puntoni, S., & Warlop, L. (2012). Identity-based consumer behavior. *International Journal of Research in Marketing*, 29, 310–321. doi:10.1016/j.ijresmar.2012.08.002
- Richman, L. S., Boynton, M. H., Costanzo, P., & Banas, K. (2013). Interactive effects of discrimination and racial identity on alcohol-related thoughts and use. *Basic and Applied Social Psychology*, 35, 396–407. doi:10.1080/01973533.2013.803966
- Richman, L. S., & Hatzenbuehler, M. (2014). A multi-level analysis of stigma and health: Implications for research and policy. *Policy Insights from Behavioral and Brain Sciences*, 1, 213–221. doi:10.1177/2372732214548862
- Richman, L. S., & Leary, M. (2009). Reactions to discrimination, stigmatization, ostracism, and other forms of interpersonal rejection: A multi-motive model. *Psychological Review*, 116, 365–383. doi:10.1037/a0015250
- Schmitt, M. T., Branscombe, N. R., Postmes, T., & Garcia, A. (2014). The consequences of perceived discrimination for psychological well-being. *Psychological Bulletin*, 140, 921–948. doi:10.1037/a0035754
- Spears, R., Doosje, B., & Ellemers, N. (1997). Self-stereotyping in the face of threats to group status and distinctiveness: The role of group identification. *Personality and Social Psychology Bulletin*, 23, 538–553. doi:10.1177/0146167297235009
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–47). Monterey, CA: Brooks/Cole.
- Townsend, S. S. M., Major, B., Gangi, C. E., & Mendes, W. B. (2011). From “in the air” to “under the skin”: Cortisol responses to social identity threat. *Personality & Social Psychology Bulletin*, 37, 151–164. doi:10.1177/0146167210392384
- U.S. Department of Health and Human Services. (2010). *Healthy people 2010*. Washington, DC: U.S. Government Printing Office.
- Wagner, H. S., Ahlstrom, B., Redden, J. P., Vickers, Z., & Mann, T. (2014). The myth of comfort food. *Health Psychology*, 33, 1552–1557. doi:10.1037/hea0000068
- Williams, D. R., & Mohammed, S. A. (2009). Discrimination and racial disparities in health: Evidence and needed research. *Journal of Behavioral Medicine*, 32, 20–47. doi:10.1007/s10865-008-9185-0
- Williams, D. R., Neighbors, H. W., & Jackson, J. S. (2003). Racial/ethnic discrimination and health: Findings from community studies. *American Journal of Public Health*, 93, 200–208. doi:10.2105/AJPH.93.2.200