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Black Racial Phenotypicality Shapes Social Pain and Support Judgments

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Abstract

Social pain, defined as responses to aversive interpersonal experiences (e.g., ostracism, unfairness, disrespect), has profound effects on health and well-being. Yet, research indicates that race biases judgments of social pain, leading people to believe that Black individuals experience less social pain than White individuals. The current work extends this research, testing whether characteristics associated with Black racial phenotypicality shapes this social pain effect. Five studies tested the hypothesis that people would judge targets high in Black racial phenotypicality as less sensitive to social pain and consequently requiring fewer coping resources than targets low in racial phenotypicality. The results of these studies reveals a consistent effect of Black racial phenotypicality on social pain judgments (Studies 1-5; $N_{cumulative}$=1,064). Moreover, this phenotypicality effect shaped judgments of social pain for both Black and White targets, suggesting effects are driven by stereotype-related characteristics rather than activation of the Black racial category. Study 3 links this bias with judgments of toughness independent of other plausible mechanisms and Studies 4-5 provide evidence that phenotypic biases in social pain undermine social support judgments. Perceivers believed Black individuals high in phenotypicality experienced less social pain and, consequently, required fewer coping resources to manage distress compared to individuals low in Black phenotypicality. These results provide evidence for a target-level bias in social pain judgments.

Keywords: Social Pain, Race, Afrocentricity, Racial Phenotypicality Bias

Black Racial Phenotypicality Shapes Social Pain and Support Judgments

Social pain, defined as responses to aversive interpersonal experiences including exclusion, unfairness, embarrassment, and disrespect, has profound negative effects on health and well-being (e.g., De Vogli et al., 2007; Jaremka et al., 2014; Luo, Hawkley, Waite, & Cacioppo, 2012). The consequences of chronically experiencing social pain are especially pressing considering that members of stigmatized groups such as Black Americans regularly experience social mistreatment (Sue, Nadal, & Capodilupo, 2008; Landrine & Klonoff, 2000), which contributes to racial deficits in health (Guyll, Matthews, & Bromberger, 2001; Jackson, Kubzansky, & Wright, 2006; Williams & Mohammed, 2009). Moreover, among Black people, these painful social experiences are not uniformly distributed. Evidence suggests that Black individuals with phenotypically African features (i.e., racially prototypic facial features and skin tone) tend to experience more discrimination and mistreatment and consequently develop elevated health risks compared to those with less phenotypic features (Monk, 2015)[1].

Rather than recognizing these cumulative effects of race-based mistreatment, emerging evidence suggests that many people believe Black individuals experience *less* social pain than do White individuals (Deska, Kunstman, et al., 2020 see also Riva & Andrighetto, 2012 for social pain biases among other groups). Although people recognize that Black individuals often experience greater life hardship than White individuals, people erroneously infer that this hardship has "toughened" Black people, inuring them to both physical and social pain (Deska, Kunstman et al., 2020; Hoffman, Trawalter, Axt, & Oliver, 2016; Trawalter, Hoffman, & Waytz,

[1] Here we specifically focus on Black racial phenotypicality because of its potential role in mental health disparities between Black and White Americans (e.g., Kessler, Mickelson, & Williams, 1999). Minimizing social pain may have negative effects on Black people generally and highly phenotypic individuals specifically (Benbow, Smith, Tolbert, Deska, & Kunstman, 2020). However, in light of this specificity, readers should be cautioned before extrapolating the current results to other racial and ethnic groups and cultural contexts. See the General Discussion for more on these points.

2012). Consequently, people infer that Black individuals are less sensitive to pain than White individuals. Thus, although people recognize that Black people experience considerable life hardships, they mistakenly infer that chronic hardship has an enhancing rather than debilitating effect on the mind and body (e.g., Jackson et al., 2007; Kessler, Mickelson, & Williams, 1999).

Although research reliably identifies racial biases in pain judgments, it is unclear what factors shape this effect. In their seminal work on racial biases in physical pain judgments, Trawalter and colleagues (2012) demonstrated that individual differences central to intergroup interactions (e.g., prejudiced attitudes; egalitarian motives) appear unrelated to racial biases in physical pain judgments. Given the profound health consequences Black people bear because of chronically experiencing social pain (e.g., Williams & Mohammed, 2009), identifying target-level characteristics related to biased judgments in social pain is critical. Because highly phenotypically Black individuals experience more social mistreatment than less phenotypic individuals (e.g., Monk, 2015), we theorized that these phenotypic individuals may be especially likely to have their pain minimized and social support needs under-recognized.

This theorizing is supported by work demonstrating that people are able to rapidly and consensually form impressions of others based on targets' facial characteristics (Olivola, Funk, & Todorov, 2014; Todorov, Olivola, Dotsch, & Mende-Siedlecki, 2015), and as outlined below, perceivers appear quite sensitive (and make consensual judgments about) targets' racial phenotypicality (e.g., Blair, Judd, Sadler, & Jenkins, 2002). Further, our theorizing is supported by emerging work demonstrating that these facial characteristics influence how we understand others' pain experiences, and responds to calls for more diversity in pain research (e.g., Dildine & Atlas, 2019). For example, both facial features themselves (e.g., Deska & Hugenberg, 2019) and the manner in which these facial features are integrated (e.g., Mende-Siedlecki, Qu-Lee,

Backer, & Van Bavel, 2019) appear to play a role in biases in pain judgments. Thus, the current work addresses these theoretical and practical gaps in the literature by testing whether targets shown to activate Black racial stereotypes (i.e., Black racial phenotypicality) modulate judgments of social pain and support.

Consistent with past work on related biases (Maddox, 2004), we operationalized Black racial phenotypicality as characteristics commonly found among individuals of African descent (e.g., full lips, broad noses, dark skin)[2]. As considerable work attests, these prototypic features of the Black racial category moderate a range of responses to Black targets, including Whites' implicit and explicit prejudice (e.g., Livingston & Brewer, 2002), discrimination experienced by Black people (e.g., Landrine & Klonoff, 2000), and most relevant to the current work, the activation and application of Black stereotypes (e.g., Blair et al., 2002; Maddox & Gray, 2002). Black racial phenotypicality's effect on racial stereotypes is so potent that it has even been demonstrated with White targets (Blair et al., 2002; Study 3). Absent Black racial categorization, the presence of Afrocentric features in White target faces is sufficient to lead to the application of stereotypes typically associated with Black people (e.g., Blair et al., 2002; see also Blair, Judd, & Chapleau, 2004).

Based on this past research, we theorized that target phenotypicality might differentially activate stereotypes associated with Black hardship, toughness, and resilience. To the extent that people infer that highly phenotypic individuals are tougher than less phenotypic individuals, we

[2] Keeping with past work (Maddox, 2004), we include both facial characteristics and skin pigmentation in our definition of Black racial phenotypicality. We include both these components in our definition because these characteristics commonly correlate and both have been linked to the activation of Black racial stereotypes and discrimination (e.g., Blair, Judd, Sadler, & Jenkins, 2002; Maddox & Gray, 2002; Monk, 2015). It is not our intention to delineate whether facial features (i.e., Afrocentricity) or skin pigment (i.e., Colorism) more strongly activates Black racial stereotypes. Moreover, the current work does not aim to determine which facial structures (e.g., strong brows) and features (e.g., full lips) drive biases in pain judgments. Rather, the current work's main hypothesis is that Black racial phenotypicality (as a factor linked to Black stereotype activation; Blair et al., 2002) will be inversely related to judgments of social pain and support.

predicted that participants would judge targets with more phenotypically Black features to experience less social pain and need less social support to cope with their pain than those with less phenotypically Black features.

The Current Work

Five studies tested the hypothesis that people would judge targets high in Black racial phenotypicality to experience less social pain than targets low in Black racial phenotypicality (Studies 1-2) in part because of beliefs about targets' toughness (Study 3), and that these biases would undermine social support judgments (Studies 4-5). Study 1 tested this hypothesis with Black targets varying in phenotypicality. Study 2 employed White targets to investigate whether the effect exists independently of Black racial categorization. Demonstrating the phenotypicality effect with White targets would suggest that features related to Black racial stereotypes (e.g., Blair et al., 2002; 2004) rather than Black racial categorization drive the social pain effect. Study 3 tested whether this phenotypicality effect was driven by toughness judgments and explored alternative accounts related to subjective facial characteristics of Black targets (e.g., dominance). Studies 4-5 employed Black targets to test whether the phenotypic deficits in social pain judgments mediated social support judgments. To the extent that participants expected targets with more Black phenotypic features to experience less social pain than targets with less phenotypic features, we hypothesized that participants would also expect phenotypic targets to require less social support to cope with distress compared to those low in Black racial phenotypicality.

Study 1

Study 1 provided the initial test of racial phenotypicality's effect on social pain judgements. Participants were presented with Black targets high and low in Black racial

phenotypicality and judged targets' social pain following socially aversive events (e.g., being derogated by a coworker, being ostracized by friends). We predicted more phenotypic targets would be judged to experience less social pain than less phenotypic targets.

Overview of Method Studies 1-5

Because all studies shared similar methods, we overview our procedure and sampling methods here. All materials and data can be found at (https://osf.io/6nt9b/?view_only=8bd2895796a04fea88246d23b3ea60eb). All variables, stimuli, and exclusions used in the current research are described below.

Participants. We used the average effect size (d=0.48) from the racial bias in social pain judgments (Deska, Kunstman et al., 2020) to estimate our sample size a priori (G*Power V3.1; Faul, Erdfelder, Lang, & Buchner, 2007). This analysis recommended samples of 59 participants to ensure at least 95% power. Because the phenotypic social pain effect might be smaller than the main effect of race (and in anticipation of some data loss), we oversampled in all studies to ensure a minimum viable sample of 190 participants. Studies 1-4 were collected online in batches of 200 or more. Study 5 was run in lab across a full academic term, producing a sample of 221 participants. Data from one Study 5 participant was incomplete and could not be included in analysis. See Table 1 for all five studies' demographic data. Sensitivity analyses revealed that when examining the difference between two dependent means with an α=.05, Studies 1 (N=190) and 2 (N=195) provided 80% power to detect an effect size of d=.20, Study 3 (N=222) provided 80% power to detect an effect size of d=.19, Study 4 (N=237) provided 80% power to detect an effect size d=.18, and Study 5 (N=220) provided 80% power to detect an effect size d=.19.

Procedure. After consenting, participants learned that they would make subjective ratings of other people's pain (see Deska & Hugenberg, 2018 for similar procedures).

Participants then judged how much pain each target would experience following ten aversive social events (Deska, Kunstman et al., 2020). In Studies 1-2, across 30 trials, participants evaluated 15 targets high and low in Black racial prototypicality (see Figure 1). In Studies 3-5, we reduced the number of targets from 15 to 10 per level of the phenotypicality variable (selecting the 10 most extreme targets on the phenotypicality continuum) to account for the inclusion of additional items. In all studies, targets were selected from the Chicago Face Database (Ma, Correll, & Wittenbrink, 2015) based on pre-rated Black racial phenotypicality. In the Chicago Face Database, phenotypicality ratings were obtained by raters who viewed faces and rated the extent to which they were Very White/Eurocentric to Very Black/Afrocentric on a 100-point scale. Targets high in Black racial phenotypicality (M=83.04, SD=2.52) were perceived as more phenotypically Black than targets rated low in Black racial phenotypicality (M=71.43, SD=7.14), $t(17.43) = 5.94$, $p < .001$, 95% CI [7.49, 15.73], $d = 2.17$. White targets scoring high in Black phenotypicality (M=26.93, SD=6.71) were rated as more phenotypically Black than White targets low in Black phenotypicality (M=15.38, SD=2.29), $t(17.23) = 6.31$, $p < .001$, 95% CI [7.69, 15.41], $d = 2.30$. Targets high (M=3.01, SD=0.59) and low (M=3.28, SD=0.71) in Black racial phenotypicality were equivalent in attractiveness, $t(58) = 1.56$, $p = .123$, 95% CI [-0.73, 0.60], $d = 0.41$. Target order was always randomized.

Figure 1: Examples of low (panels A & C) and high (panels B & D) phenotypicality targets.

Participants judged targets' expected pain following ten aversive social experiences (e.g., *This person overhears a coworker talking about their incompetence at their job*, *This person's best friend moves across the country*; see https://osf.io/6nt9b/?view_only=8bd2895796a04fea88246d23b3ea60eb). Participants made social pain judgments on a scale from 1(*not painful*) to 4(*Extremely painful*). We averaged items into a social pain index for targets high and low in Black racial phenotypicality (all $\alpha > 0.91$). Social pain items were always randomized within target.

In Study 3, participants judged targets' expected pain as in Studies 1-2, but first judged each target on a series of traits we thought might plausibly mediate the relationship between phenotypicality and social pain (i.e., anger, dominance, masculinity, toughness), as well as several filler traits (i.e., happiness, trustworthiness, femininity). Participants made trait ratings on scales ranging from 1(*not at all*) to 4(*extremely)*.

In Studies 4-5, participants judged the social support necessary to cope with each socially painful event. Below each social pain item was a social support item. Participants indicated how

each target should cope with the aforementioned experience (e.g., *How should this person cope with overhearing a coworker talking about their incompetence at their job?*). Coping items were scored on an ascending scale: 1(*no action needed*), 2(*Use personal coping strategies [e.g., do a calming activity, take a walk, pray/meditate]*), 3(*Seek minor informal support from friends and family*), 4(*Seek maximum informal support from friends and family*), and 5(*Request formal support from a mental health professional [e.g., clinical psychologist, counselor, psychiatrist]*). Finally, participants completed demographics and were debriefed.

Results and Discussion

Results from a paired-samples *t*-test revealed that participants judged targets high in Black racial phenotypicality ($M = 2.53$, $SD = 0.52$) to experience less social pain than those low in Black phenotypicality ($M = 2.57$, $SD = 0.50$), $t(189) = -2.94$, $p = .004$, 95% CI [-.06, - 0.01], $d = -0.21$ (Figure 2). The current study's results provide initial evidence that Black racial phenotypicality shapes judgements of social pain. In keeping with the work's central hypothesis, highly phenotypic targets were expected to experience less social pain than less phenotypic targets.

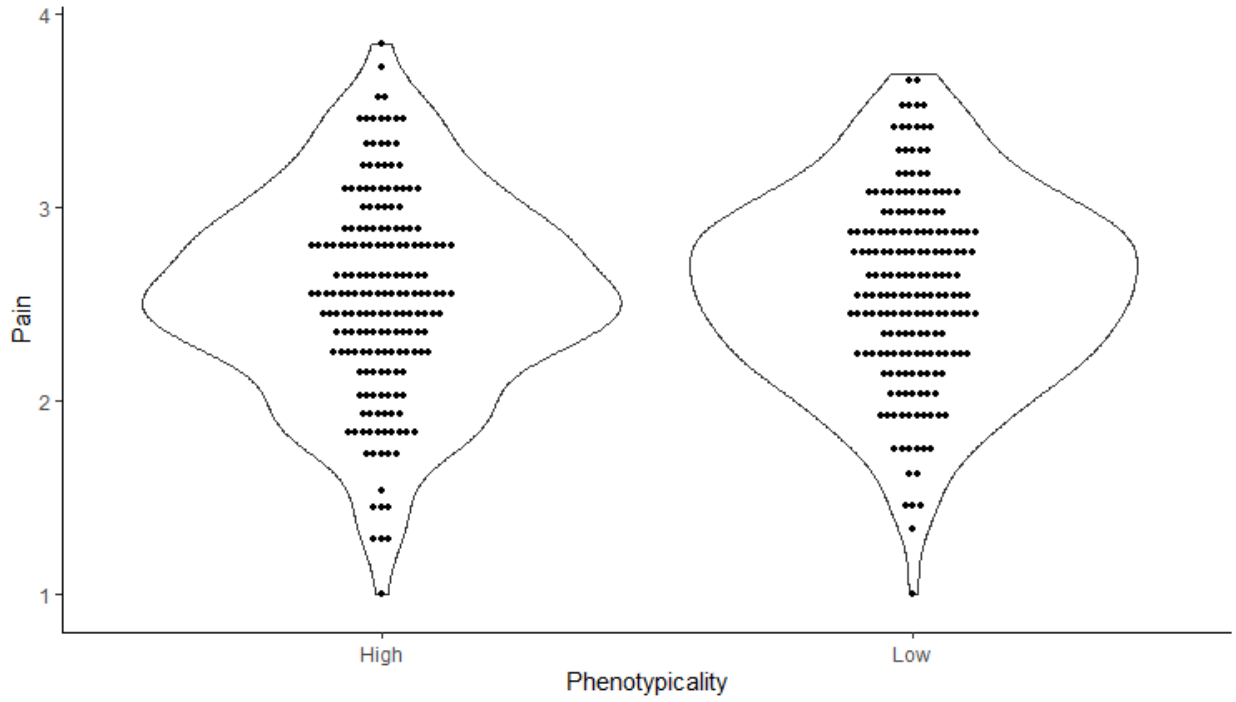

Figure 2: Violin plot displaying participants' mean judgments of social pain sensitivity for high and low phenotypicality targets in Study 1.

Study 2

Study 2 tested the phenotypicality hypothesis with White targets. Because phenotypicality has been linked to Black stereotype activation, the use of White targets allows us to test whether the activation of Black stereotypes even absent Black racial categorization drives phenotypicality's effect on social pain judgments. Study 1's phenotypicality effect should generalize to White targets to the extent that stereotypes (not overt categorization) fuel phenotypicality's effect on social pain judgements.

Results and Discussion

A paired-samples *t*-test revealed that participants expected White targets high in Black phenotypicality ($M = 2.57$, $SD = 0.44$) to experience less social pain than White targets low in

Black phenotypicality (M = 2.61, SD = 0.41), $t(194)$ = -3.10, p = .002, 95% CI [-0.06, - 0.01], d = -0.22 (Figure 3). These results conceptually replicate those of Study 1 while providing further evidence that Black racial phenotypicality shapes judgments of social pain. Demonstrating this effect with White targets provides suggestive evidence that it is target-level stereotype activation rather than Black racial categorization that leads to biases in social pain. In other words, variations in Black racial phenotypicality, even in the absence of overt categorization, informs social pain judgments.

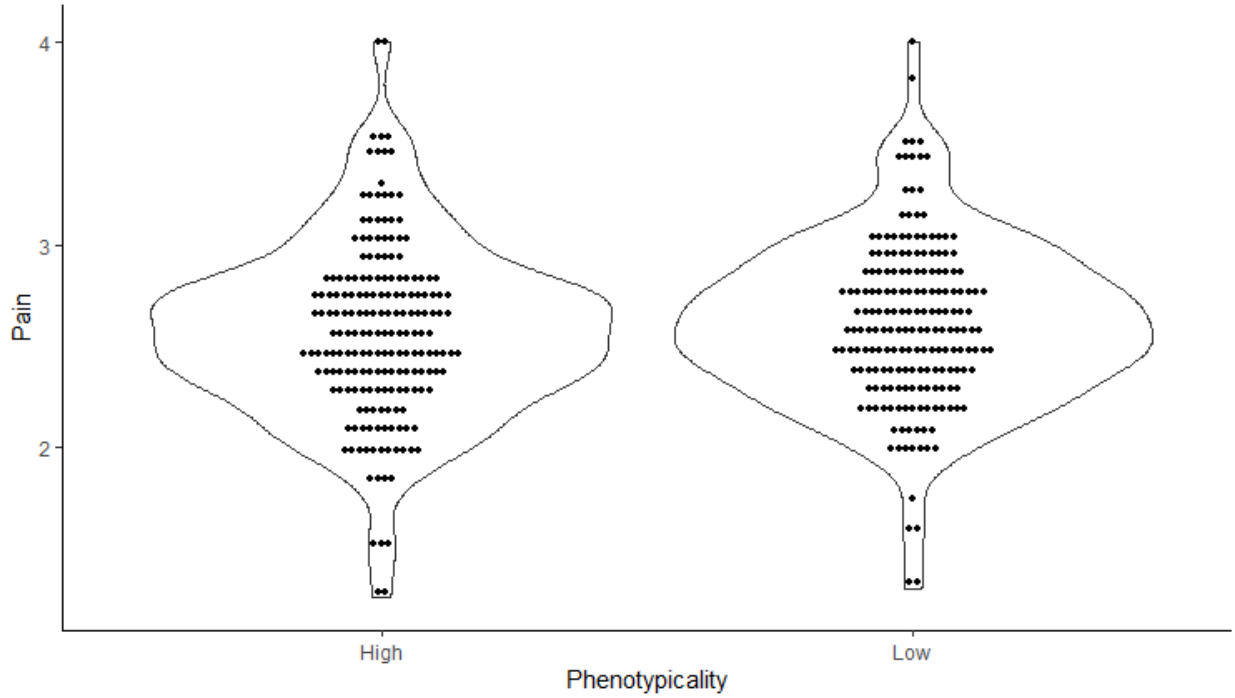

Figure 3: Violin plot displaying participants' mean judgments of social pain sensitivity for high and low phenotypicality targets in Study 2.

Study 3

We theorized that the extent to which this racial phenotypicality bias in social pain judgments emerges likely depends on group level stereotypes associated with toughness and hardship. In Study 3, we directly test the role of perceived toughness as a mediator, as well as several additional plausible mediators (i.e., anger, dominance, masculinity).

Results and Discussion

Replicating the previous results, a paired-samples *t*-test revealed that participants judged targets high in Black racial phenotypicality ($M = 2.57$, $SD = 0.51$) to experience less social pain than those low in Black phenotypicality ($M = 2.67$, $SD = 0.49$), $t(221) = -8.52$, $p < .001$, 95% CI [-0.12, -0.08], $d = -0.57$ (Figure 4). Similar differences emerged in the trait judgments as well. Conceptually replicating past work (e.g., Hugenberg & Bodenhausen, 2003), participants judged targets high in Black racial phenotypicality ($M = 2.21$, $SD = 0.67$) as angrier than those low in Black phenotypicality ($M = 2.11$, $SD = 0.70$), $t(221) = 5.04$, $p < .001$, 95% CI [0.06, 0.15], $d = 0.34$. Participants judged targets high in Black racial phenotypicality ($M = 2.62$, $SD = 0.53$) as more dominant than those low in Black phenotypicality ($M = 2.44$, $SD = 0.60$), $t(221) = 7.79$, $p < .001$, 95% CI [0.14, 0.24], $d = 0.52$. And, conceptually replicating past work (Johnson, Freeman, & Pauker, 2012), participants judged targets high in Black racial phenotypicality ($M = 3.02$, $SD = 0.56$) as more masculine than those low in Black phenotypicality ($M = 2.85$, $SD = 0.58$), $t(221) = 8.24$, $p < .001$, 95% CI [0.13, 0.21], $d = 0.55$. Finally, and consistent with our primary hypothesis, participants also judged targets high in Black racial phenotypicality ($M = 2.71$, $SD = 0.51$) as tougher than those low in Black phenotypicality ($M = 2.48$, $SD = 0.59$), $t(221) = 8.71$, $p < .001$, 95% CI [0.18, 0.28], $d = 0.58$.

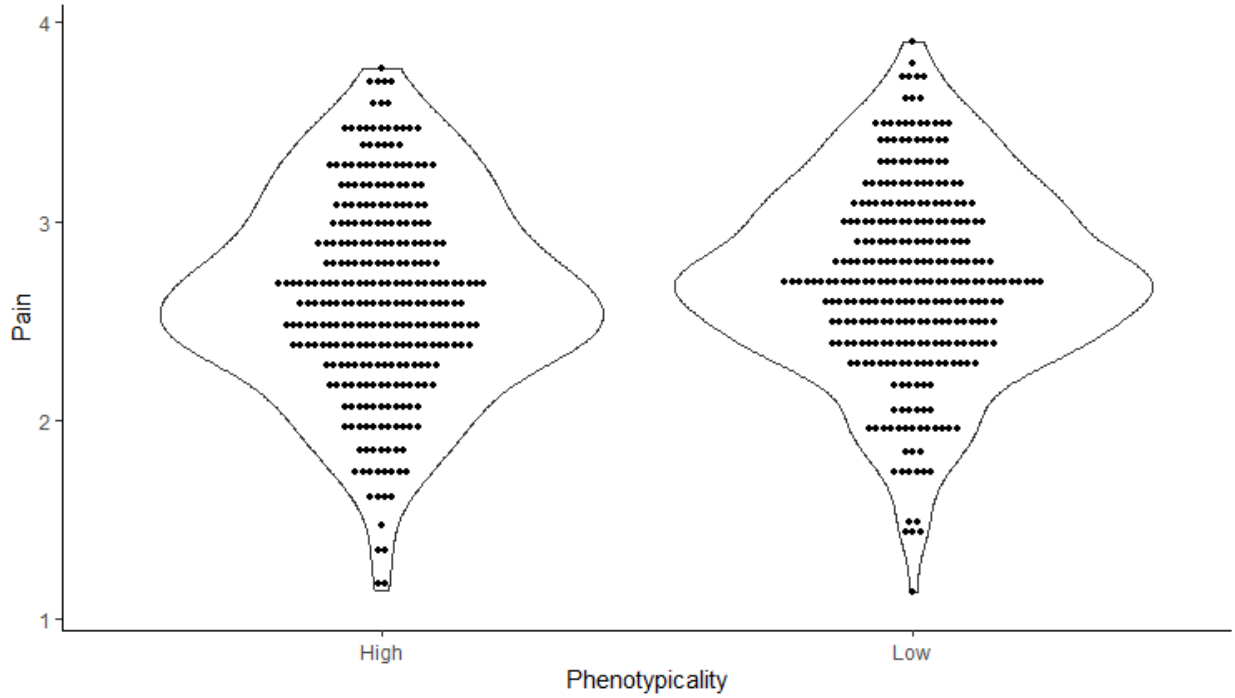

Figure 4: Violin plot displaying participants' mean judgments of social pain sensitivity for high and low phenotypicality targets in Study 3.

Because our primary prediction was that toughness mediated the relationship between phenotypicality and pain judgments, we first tested this model using 10,000 percentile bootstrapped samples (MEMORE; Montoya & Hayes, 2017). Phenotypicality had an indirect effect on social pain judgments through toughness ratings, b=0.04, SE=0.01, 95% CI [0.02,0.05]. To test whether toughness mediated this relationship over-and-above other plausible mediators, we ran a series of parallel mediation analyses. First, we tested a parallel model including both toughness and anger. This model produced a significant indirect effect through toughness ratings, b=0.03, SE=0.01, 95% CI [0.02,0.05], but not through anger ratings, b<0.001, SE<0.01, 95% CI [-0.00,0.01]. We next tested a parallel model including both toughness and dominance. This model produced significant indirect effects through both toughness ratings, b=0.03, SE=0.01,

95% CI [0.02,0.04], and dominance ratings, *b*=0.02, *SE*=0.01, 95% CI [0.01,0.03]. We next tested a parallel model including both toughness and masculinity. This model produced significant indirect effects through both toughness ratings, *b*=0.03, *SE*=0.01, 95% CI [0.02,0.04], and masculinity ratings, *b*=0.01, *SE*<0.01, 95% CI [0.01,0.02]. Finally, because both dominance and masculinity emerged as independent predictors when tested in parallel models with toughness, we ran one final model including all three potential mechanisms in one parallel model. This model produced significant indirect effects through toughness ratings, *b*=0.02, *SE*=0.01, 95% CI [0.01,0.04], dominance ratings, *b*=0.01, *SE*=0.01, 95% CI [0.003,0.03], and masculinity ratings, *b*=0.01, *SE*<0.01, 95% CI [0.002,0.02].

The results of the current study provide additional evidence for phenotypicality's effect on social pain judgments. Social pain was minimized for high compared to low phenotypicality targets. Further, phenotypicality's effect on social pain was independently mediated by beliefs about toughness, dominance, and masculinity. In each mediation model, toughness always emerged as the largest effect and remained significant after accounting for alternative accounts for this effect (e.g., dominance, masculinity). Although we do not argue that perceptions of toughness are the sole mechanism underlying the relationship between racial phenotypicality and social pain judgments, they do appear to be important.

Study 4

Using Study 1's stimuli, Study 4 tested whether phenotypic biases in social pain expectancies set the stage for biases in social support judgments. Social support judgments are important because recognition is a precondition of helping (e.g., Latané & Darley, 1970). People are unlikely to help those whom they do not believe are in pain. We hypothesized that Black racial phenotypicality would bias judgments of both social pain and social support; additionally,

phenotypicality's effect on social support judgments would be mediated by social pain expectancies. Targets with more phenotypically Black features were expected to be judged as needing less social support in part because people minimized their pain relative to those with less phenotypically Black features.

Results and Discussion

Replicating the previous studies, participants judged high phenotypicality targets (M = 2.63, SD = 0.48) to experience less social pain than low phenotypicality targets (M = 2.65, SD = 0.45), $t(236) = -2.58$, $p = .010$, 95% CI [-.05, - 0.01], $d = -0.17$ (Figure 5). Counter to predictions, we did not observe differences on judgments of social support between high phenotypicality targets (M = 2.88, SD = 0.78) and low phenotypicality targets (M = 2.90, SD = 0.71), $t(236) = -1.53$, $p = .128$, 95% CI [-.05, -0.01], $d = -0.10$.

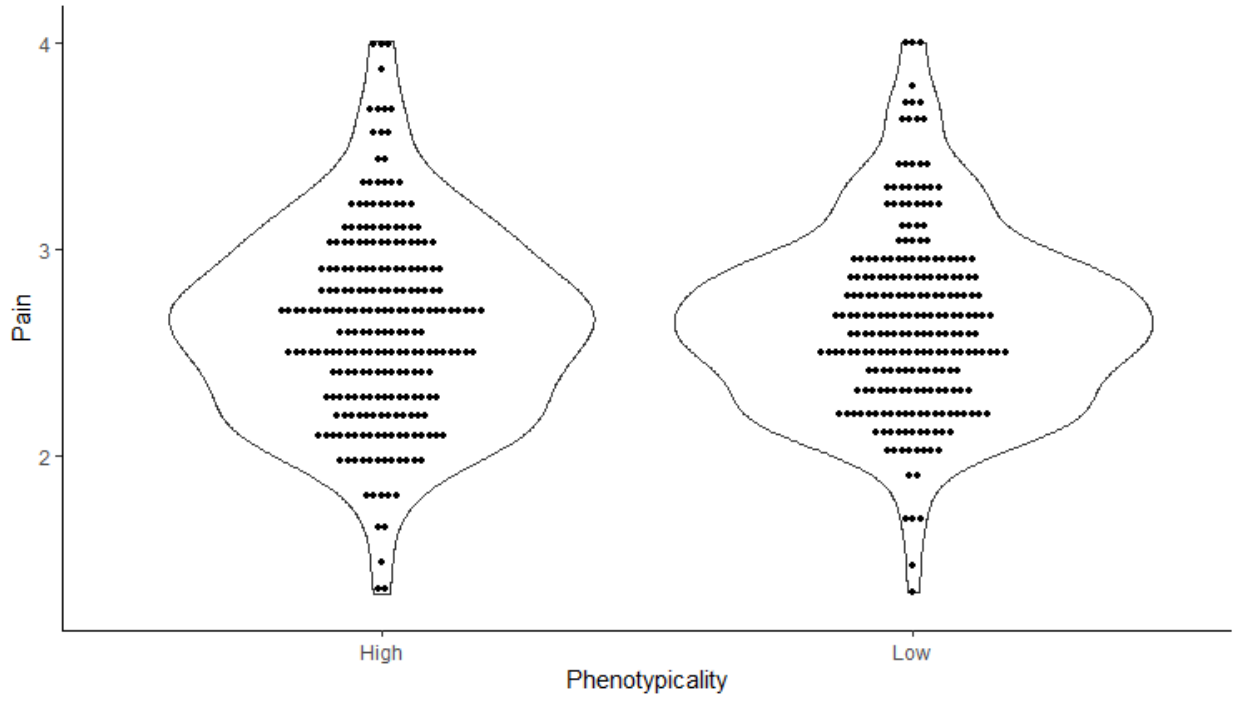

Figure 5: Violin plot displaying participants' mean judgments of social pain sensitivity for high and low phenotypicality targets in Study 4.

Because of our a priori prediction, we nevertheless tested whether phenotypicality had an indirect effect on social support judgments through social pain ratings, using 10,000 percentile bootstrapped samples (Montoya & Hayes, 2017). The indirect effect was significant, *b*=0.03, *SE*=0.01, 95% CI [0.01,0.05], supporting our hypothesis (Figure 6). The results of the current study provide additional evidence for phenotypicality's effect on social pain judgments. Social pain was again minimized for high compared to low phenotypicality targets. Moreover, mediational analyses suggested that phenotypicality's effect on social pain judgments had downstream negative consequences for social support judgments. Phenotypicality reduced judgments of social pain, which then undermined social support judgments.

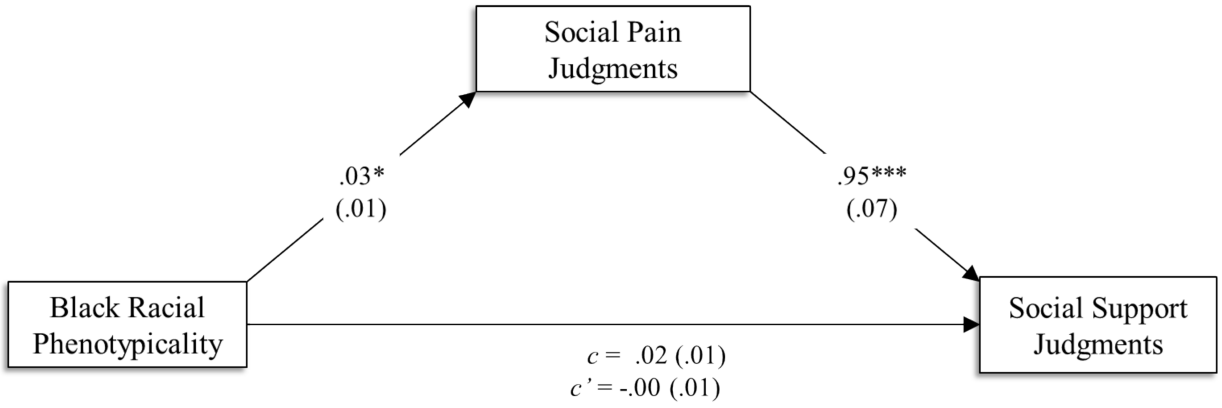

Figure 6: Model showing the effect of racial phenotypicality on social support judgments through social pain judgments in Study 4. The indirect effect is significant, $b = 0.03$, $SE = 0.01$, 95% CI [0.01, 0.05].

Study 5

We thought it important to replicate Study 4 to provide consistent evidence of phenotypicality's indirect effect on social support judgments through social pain. Study 5 was a

direct replication of Study 4. We again predicted people would expect more phenotypic targets to feel less social pain than less phenotypic targets and these social pain judgments would adversely impact social support judgments. In light of Study 4's data, we were agnostic as to whether phenotypicality would have a direct effect on social support judgments.

Results and Discussion

Replicating the previous studies, participants judged targets with more phenotypically Black features ($M = 2.52$, $SD = 0.39$) to experience less social pain than those with less phenotypic features ($M = 2.57$, $SD = 0.36$), $t(219) = -4.17$, $p < .001$, 95% CI [-.08, - 0.03], $d = -0.28$ (Figure 7). Unlike Study 4, participants also judged targets high in Black phenotypicality ($M = 2.43$, $SD = 0.53$) to need less social support than targets low in phenotypicality ($M = 2.51$, $SD = 0.50$), $t(219) = -4.93$, $p < .001$, 95% CI [-.12, -0.05], $d = -0.33$.

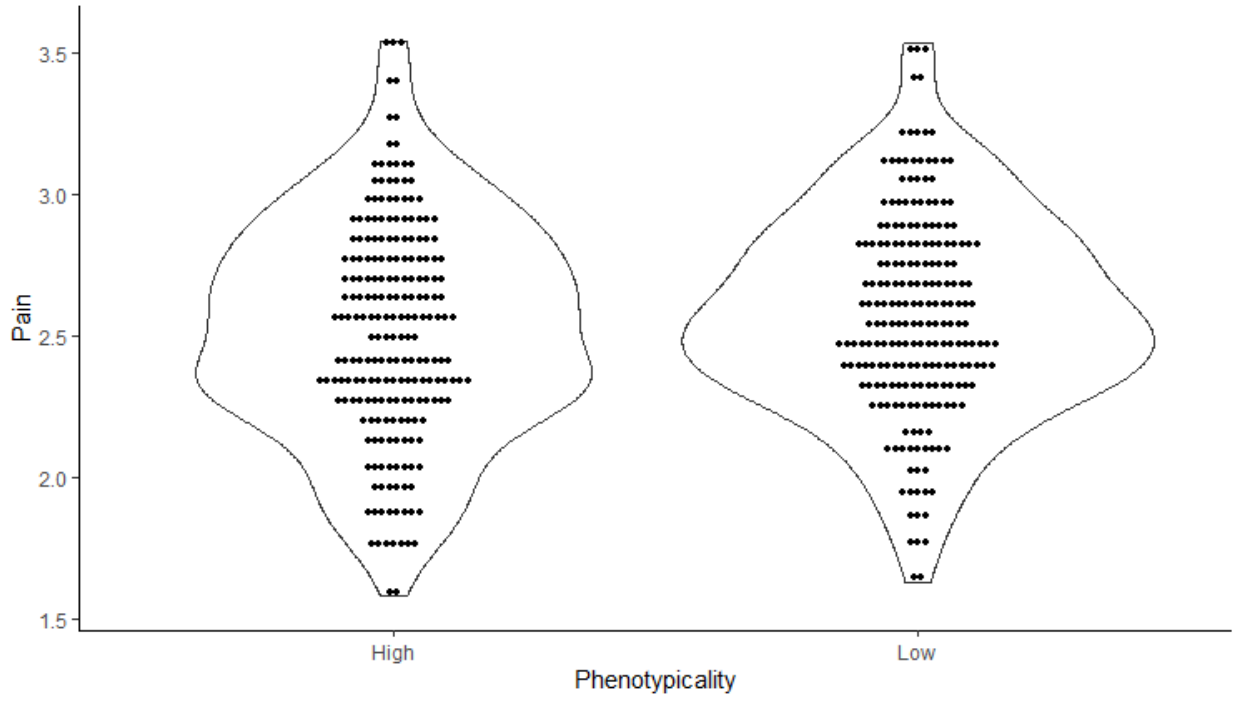

Figure 7: Violin plot displaying participants' mean judgments of social pain sensitivity for high and low phenotypicality targets in Study 5.

Mediation analyses with 10,000 percentile bootstrapped samples (Montoya & Hayes, 2017) revealed a significant indirect effect, *b*=0.06, *SE*=0.01, 95%CI[0.03,0.09], supporting our hypothesis (Figure 8). Phenotypicality reduced social pain expectancies, which in turn undermined social support judgments. These results provide evidence of Black phenotypicality's direct effect on social support judgments and affirm phenotypicality's negative effect on social support through deficits in social pain judgments. In contrast to Study 4, the current results also provide direct evidence of phenotypicality's effect on social support judgments. Although speculation, the current study's lab participants may have been more engaged (or felt more accountable) than online participants in Study 4. As a result, lab participants may have been more attentive (and consequently more strongly influenced) by experimental stimuli, leading phenotypicality to significantly affect support judgments.

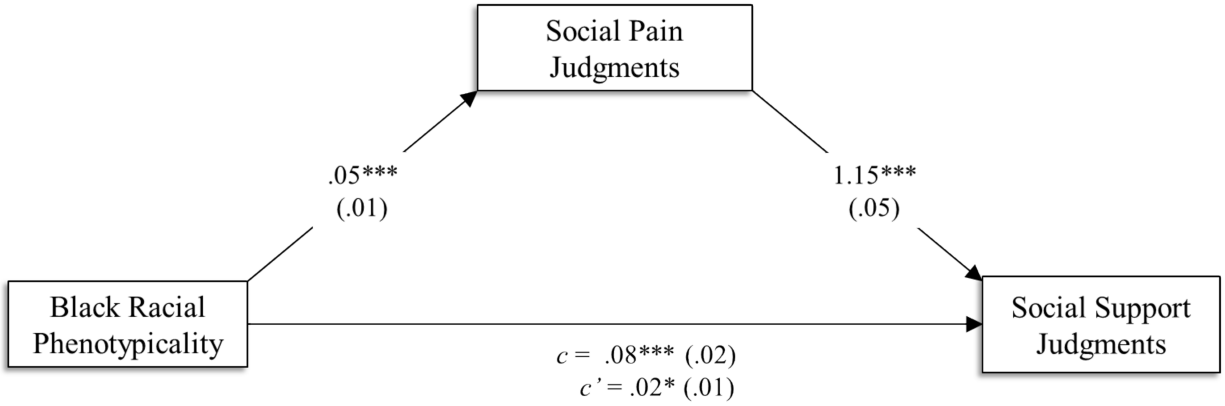

Figure 8: Model showing the effect of Black racial phenotypicality on social support judgments through social pain judgments in Study 5. The indirect effect is significant, *b* = 0.06, *SE* = 0.01, 95%CI [0.03, 0.09].

Meta-Analysis Studies 1-5

To provide further evidence for the reliability of the effect of racial phenotypicality on social pain judgments, we conducted a meta-analysis of our studies (Goh, Hall, & Rosenthal, 2016). To do this, we computed effect sizes for the effect of racial phenotypicality in each study, yielding five effects across 1,049 total participants. This analysis yielded a statistically significant meta-analytic effect, $r_{weighted} = 0.14$, 95% CI [0.08, 0.20], $z = 4.58$, $p < .001$ (see Figure 9). Those high in phenotypicality were judged to feel less pain than those low in phenotypicality.

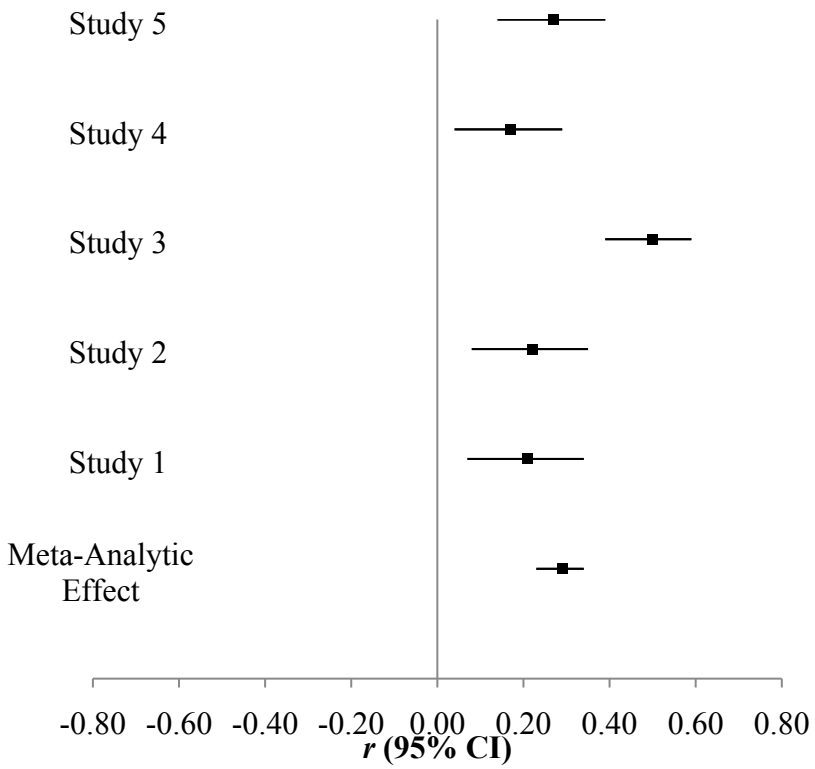

Figure 9: Forest plot depicting the effect size r from each study as well as the overall meta-analytic effect. Error bars represent 95% confidence intervals around the effect size *r*.

General Discussion

Painful social experiences negatively affect mind and body and are implicated in racial deficits in health (Guyll et al., 2001; Williams & Mohammed, 2009). Despite these deleterious effects, the current work provides evidence for a Black phenotypicality bias in social pain judgments. Participants expected more phenotypically Black targets to experience less social pain than less phenotypic targets (Studies 1-5). Consistent with a racial stereotype account (Blair et al., 2002), variations in Black phenoypicality even affect judgments of White targets' social pain, illustrating the effect's persistence even in the absence of overt Black racial categorization (Study 2). These effects appear driven by racialized beliefs about toughness, dominance, and masculinity, consistent with our theorizing that variations in phenotypicality might differentially activate stereotypes associated with Black hardship, toughness, and resilience (Study 3). Moreover, biases in social pain judgments mediated Black phenotypicality's effect on social support judgments (Studies 4-5). People expected highly phenotypic Black individuals to experience less social pain than less phenotypic individuals and consequently expected phenotypic targets to require fewer coping resources to manage their pain.

Implications

The current work offers several contributions to the study of race and pain. First, these studies provide evidence for a target-level factor that shapes judgments of social pain: Black racial phenotypicality. Although research consistently finds that Black individuals are expected to experience less pain than White individuals (e.g., Deska, Kunstman et al., 2020; Hoffman et al., 2016; Trawalter et al., 2012), it is unclear what within-category factors may contribute to judgments of others' pain. The current work addresses this gap in the empirical literature by

providing evidence that Black racial phenotypicality undermines both social pain and social support judgments.

Second, the current work provides initial evidence for a characteristic that shapes pain judgments for both stigmatized *and* dominant groups. Whereas past work consistently finds that White people are expected to experience more acute physical (e.g., Trawalter et al., 2012) and social pain (Deska, Kunstman, et al., 2020) than Black people, the present work also speaks to what characteristics shape judgments of pain within the White racial category. Study 2's data suggest that White targets with more phenotypically Black subjective characteristics may be expected to experience less social pain than White targets with less phenotypic subjective characteristics. These data provide initial evidence that pain judgments are not monolithic for White targets and are informed by the same characteristics that bias pain judgments for stigmatized groups (i.e., prototypically Black subjective facial characteristics).

Third, the current work provides direct evidence that connects perceived toughness to biased pain judgments. Although researchers studying both physical and social pain have theorized that racial stereotypes about toughness undermine judgments of pain (e.g., Deska, Kunstman, et al., 2020; Hoffman & Trawalter, 2016), this relationship is typically inferred from indirect assessment of experienced life hardship and privilege. Study 3 addresses this gap in the empirical literature by directly linking toughness judgments to phenotypic judgments in social pain.

Fourth, in light of evidence that Black individuals' frequent experiences with social pain (e.g., Krieger & Sidney, 1996) heighten their risk for mental and physical health problems (e.g., Pascoe & Smart Richman, 2009; Williams & Mohammed, 2009), it is imperative that research identifies factors that bias social pain and support judgments for Black people. The current data

suggest that phenotypically Black individuals might be at particular risk for having their social pain and support needs unmet. When considered in conjunction with evidence that Black individuals with more Black phenotypic features both experience more social mistreatment (e.g., Landrine & Klonoff, 2000) and consequently show more severe health complications than those with less prototypic features (e.g., Monk, 2015), the current results raise the chilling possibility that those chronically experiencing social pain are the most likely to have their pain minimized and support needs underserved.

These results potentially speak to how Black individuals may experience daily stigma. Power wielders are in the position of deciding which social pains require support and which are dismissed. For example, does losing a grandparent justify a late paper or a delayed exam? Does a pending divorce justify workplace tardiness or additional time off? Our data suggest that phenotypic Black individuals are likely to have their pain ignored under the exact circumstances when they most need support and forbearance

Limitations and Future Directions

The current work's limitations offer fruitful avenues for future research. One limitation of the current work was the focus on minor-to-moderate socially painful events. We focused on these types of pain experiences because they are common in everyday life, affect people regardless of race, but add up in large numbers to negatively impact the health of Black Americans (e.g., Williams & Mohammed, 2009). As common stressors, these everyday slights compose a meaningful portion of Black individuals' experiences with social pain and contribute to racial health disparities. However, it remains unclear whether these effects will generalize to more severe social pain experiences (e.g., severe workplace harassment). Future research might

test whether phenotypic biases in social pain judgments extend to potentially traumatizing events.

Future research might also test whether phenotypic biases in social pain extend to mental healthcare. As past work on physical pain attests (Hoffman et al., 2016), racial biases in pain judgments can extend to healthcare workers, potentially setting the stage for Black patients and clients to receive substandard care. Researchers might test whether social pain biases extend to mental health professionals and the care they provide to those high and low in Black racial phenotypicality. Do those high in Black phenotypicality receive lower quality care than those low in phenotypicality?

Future research might test whether highly phenotypic individuals feel as if their pain goes unrecognized relative to those with less phenotypic features. To the extent that individuals with phenotypic features feel like their pain is minimized, it may lead to feelings of secondary victimization (e.g., Craig-Henderson & Sloan, 2003), where feelings of pain are compounded by the perceived disinterest of peers and caregivers. Researchers should explore the social pain experiences of individuals varying in Black racial phenotypicality.

Future research might also benefit from testing the role of configural face processing in these effects. For instance, emerging research suggests that low-level facial processing can lead White perceivers to set more stringent criteria for identifying Black people's physical pain than White people's physical pain (Mende-Siedlecki, Qu-Lee, Backer, & Van Bavel, 2019). Researchers might explore how similar aspects of configural face processing also bias social pain judgments for those high and low in Black racial phenotypicality. Indeed, evaluating targets ranging in features associated with racial and ethnic minority groups is needed to form a more complete and diverse understanding of pain recognition processes (Dildine & Atlas, 2019).

The current work relied exclusively on male targets. Past research has found gendered effects of race (Johnson, Freeman, & Pauker, 2012) as well as gender biases in judgments of pain generally (Robinson & Wise, 2003; Sanford et al., 2002). Thus, we held sex constant in the current work to provide a more direct, controlled test of the phenotypicality hypothesis. Indeed, classic work on racial phenotypicality has often held sex constant and focused primarily on male targets (e.g., Blair et al., 2002; Blair et al., 2004). There is reason to suspect that the phenotypicality effect would generalize across target sex (see Maddox & Gray, 2002). Nevertheless, it would be important for future research to consider how the phenotypicality bias on social pain judgments affects a variety of intersectional identities.

Related, the current research focused exclusively on the role of Black racial phenotypicality in social pain and support judgments. We reasoned that phenotypic targets' capacity to strongly activate Black stereotypes generally and stereotypes about toughness specifically would bias judgments of social pain and support. Five experiments provide evidence consistent with this theorizing. However, in light of the specificity of these experiments and their singular cultural context, researchers should express caution when generalizing phenotypicality's effect on pain judgments for other groups. Target phenotypicality may operate differently depending on the traits and characteristics associated with distinct racial and ethnic groups. Absent a stereotype component related to toughness, target phenotypicality likely would not bias judgments of social pain and support. For example, because toughness is not part of the general stereotype of East Asians in the United States (e.g., Niemann, Yolanda, Rozelle, Baxter, & Sullivan, 1994), individuals high in East Asian phenotypicality would not be expected to feel less social pain than those low in East Asian phenotypicality. Indeed, to the extent that stereotypes about Asian people include components of social sensitivity and communion (e.g., Markus &

Kityama, 1991; Niemann et al., 1994), highly phenotypic East Asian targets might be predicted to experience *more* social pain than those low in phenotypicality because they are judged to be particularly attuned to social relationships. Alternatively, immigrant stereotypes, which for some might denote a hard and tough lifestyle, might conversely activate toughness stereotypes for people perceived to come from immigrant groups. From this perspectives, by activating immigrant-toughness semantic links, highly phenotypic targets from other groups (e.g., Hispanic and Latinx peoples in the U.S.), might be judged to feel less social pain than those low in phenotypicality. Racial and ethnic stereotypes about immigrant-status might set the stage for biases in social pain judgments.

These experiments were also conducted in the United States cultural context where slavery, racial inequity, and ongoing White supremacy has inextricably bound notions of race, hardship, and toughness. Just as racial phenotypicality might not undermine pain judgments for groups that are not stereotyped as tough, so too might these effects be limited to contexts where hardship is expected to have a toughening effect on the mind and body (Deska, Kunstman, et al., 2020; Hoffman & Trawalter, 2016). In contexts where chronic hardship is believed to debilitate rather than enhance (see Crum, Salovey, & Achor, 2013 for individual differences in beliefs about adversity), beliefs about endured hardship might lead to greater (not lesser) judgments of social pain and support. Hence, although the current work offers consistent evidence that Black racial phenotypicality undermines social pain and support judgments in the U.S., the specificity of these effects should be noted and caution taken when generalizing to other groups and cultural contexts. Future research would do well to explore how racial phenotypicality impacts judgments of pain and support for other groups and how these relationships manifest in cultures beyond the U.S.

Conclusion

Recognizing others' pain is critical to effective pain treatment. The current work demonstrates that Americans judge both Black and White targets high in Black racial phenotypicality as relatively insensitive to social pain, which has consequences for coping resource recommendations and may contribute to veridical treatment disparities. Black phenotypicality seems to lead to the minimization of Black (and White) individuals' social pain.

Open Practices

All materials and data can be found at

(https://osf.io/6nt9b/?view_only=8bd2895796a04fea88246d23b3ea60eb).

Table 1. Demographic Characteristics for Studies 1-5

		GENDER				RACE									AGE
	n	Male	Female	Non-binary	Did not disclose	White	Black	Asian	Latinx	American Indian/Alaska Native	Native Hawaiian/Pacific Islander	Multiracial	Other	Did not Disclose	
Study 1	190	50%	50%	0%	0.0%	71.6%	13.7%	6.8%	5.8%	0.5%	0%	1.6%	0%	0%	36.74 (11.95)
Study 2	195	48.7%	50.8%	0%	0.5%	76.4%	7.2%	7.2%	4.6%	1.5%	0%	2.1%	0.5%	0.5%	37.16 (12.24)
Study 3	222	58.4%	38.3%	.3%	0.0%	69.8%	17.1%	4.5%	5.4%	1.4%	.5%	1.4%	0%	0%	35.41 (10.09)
Study 4	237	59.5%	40.1%	0%	0.4%	72.2%	14.8%	6.8%	3.8%	1.7%	0%	0.8%	0%	0%	33.19 (10.92)
Study 5	220	46.4%	51.8%	0%	0.9%	71.2%	2.7%	15.8%	1.8%	0.5%	0%	6.3%	0.5%	0.5%	19.27 (1.63)
Total	1,064														

References

Benbow, K., Smith, B., Tolbert, K., Deska, J.C., & Kunstman, J. W. (manuscript in preparation). Social pain minimization and health: Black Americans report greater social pain minimization than White Americans to the detriment of health.

Blair, I. V., Judd, C. M., & Chapleau, K. M. (2004). The influence of Afrocentric facial features in criminal sentencing. *Psychological Science*, *15*, 674-679.

Blair, I. V., Judd, C. M., Sadler, M. S., & Jenkins, C. (2002). The role of Afrocentric features in person perception: Judging by features and categories. *Journal of Personality & Social Psychology, 83*, 5-25.

Craig-Henderson, K., & Sloan, L. R. (2003). After the hate: Helping psychologists help victims of racist hate crime. *Clinical Psychology: Science and Practice*, *10*, 481-490.

Darley, J. M. & Batson, C. D. (1973). "From Jerusalem to Jericho": A study of situational and dispositional variables in helping behavior. *Journal of Personality and Social Psychology, 27,* 100-108.

Deska, J. C., & Hugenberg, K. (2018). Targets' facial width-to-height ratio biases pain judgments. *Journal of Experimental Social Psychology*, *74*, 56-64.

Deska, J. C., Kunstman, J. W., Lloyd, E. P., Almaraz, S. M., Bernstein, M. J., Gonzales, J. P., & Hugenberg, K. (2020). Race-based biases in judgments of social sain, *Journal of Experimental Social Psychology*, advance online publication.

De Vogli, R., Ferrie, J. E., Chandola, T., Kivimäki, M., & Marmot, M. G. (2007). Unfairness and health: Evidence from the Whitehall II Study. *Journal of Epidemiology & Community Health*, *61*, 513-518.

Dildine, T. C., & Atlas, L. Y. (2019). The need for diversity in research on facial expressions of pain. *Pain*, *160*, 1901-1902.

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G* Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*, 175-191.

Goh, J. X., Hall, J. A., & Rosenthal, R. (2016). Mini meta-analysis of your own studies: Some arguments on why and a primer on how. *Social and Personality Psychology Compass*, *10*(10), 535-549.

Guyll, M., Matthews, K. A., & Bromberger, J. T. (2001). Discrimination and unfair treatment: relationship to cardiovascular reactivity among African American and European American women. *Health Psychology*, *20*, 315-325.

Hoffman, K. M., & Trawalter, S. (2016). Assumptions about life hardship and pain perception. *Group Processes & Intergroup Relations*, *19*, 493-508.

Hoffman, K. M., Trawalter, S., Axt, J. R., & Oliver, M. N. (2016). Racial bias in pain assessment and social support judgements recommendations, and false beliefs about biological differences between blacks and whites. *Proceedings of the National Academy of Sciences*, *113*, 4296-4301.

Hugenberg, K. & Bodenhausen, G. V. (2003). Facing prejudice: Implicit prejudice and the perception of facial threat. *Psychological Science, 14*, 640-643.

Jackson, B., Kubzansky, L. D., & Wright, R. J. (2006). Linking perceived unfairness to physical health: The perceived unfairness model. *Review of General Psychology*, *10*, 21-40.

Jaremka, L. M., Andridge, R. R., Fagundes, C. P., Alfano, C. M., Povoski, S. P., Lipari, A. M., …, Kiecolt-Glaser, J. K. (2014). Pain, depression, and fatigue: Loneliness as a longitudinal risk factor. *Health Psychology*, *33*, 948-957.

Johnson, K. L., Freeman, J. B., & Pauker, K. (2012). Race is gendered: How covarying phenotypes and stereotypes bias sex categorization. *Journal of Personality and Social Psychology, 102*, 116-131.

Kessler, R. C., Mickelson, K. D., & Williams, D. R. (1999). The prevalence, distribution, and mental health correlates of perceived discrimination in the United States. *Journal of Health and Social Behavior*, *40*, 208-230.

Krieger, N., & Sydney, S. (1996). Racial discrimination and blood pressure: The CARDIA Study of young Black and White adults. *American Journal of Public Health, 86*, 1370-1378.

Landrine, H., & Klonoff, E. A. (2000). Racial discrimination and cigarette smoking among Blacks: Findings from two studies. *Ethnicity & Disease*, *10*, 195-202.

Latané, B., & Darley, J. M. (1970). The unresponsive bystander: Why doesn't he help?. *Century Psychology Series*. New York,: Appleton-Century Crofts.

Livingston, R. W., & Brewer, M. B. (2002). What are we really priming? Cue-based versus category-based processing of facial stimuli. *Journal of Personality and Social Psychology*, *82*, 5-18.

Luo, Y., Hawkley, L. C., Waite, L. J., & Cacioppo, J. T. (2012). Loneliness, health, and mortality in old age: A national longitudinal study. *Social Science & Medicine*, *74*, 907-914.

Ma, D. S., Correll, J., & Wittenbrink, B. (2015). The Chicago face database: A free stimulus set of faces and norming data. *Behavior Research Methods*, *47*, 1122-1135.

Maddox, K. B., & Gray, S. A. (2002). Cognitive representations of Black Americans: Reexploring the role of skin tone. *Personality and Social Psychology Bulletin*, *28*, 250-259.

Mende-Siedlecki, P., Qu-Lee, J., Backer, R., & Van Bavel, J. J. (2019). Perceptual contributions to racial bias in pain recognition. *Journal of Experimental Psychology: General, 148,* 863-889.

Maddox, K. B. (2004). Perspectives on Racial Phenotypicality Bias. *Personality and Social Psychology Review*, *8*, 383–401

Monk Jr, E. P. (2015). The cost of color: Skin color, discrimination, and health among African-Americans. *American Journal of Sociology*, *121*, 396-444.

Montoya, A. K., & Hayes, A. F. (2017). Two-condition within-participant statistical mediation analysis: A path-analytic framework. *Psychological Methods*, *22*, 6-27.

Olivola, C. Y., Funk, F., & Todorov, A. (2014). Social attributions from faces bias human choices. *Trends in Cognitive Sciences*, *18*, 566-570.

Pascoe, E. A., & Smart Richman, L. (2009). Perceived discrimination and health: a meta-analytic review. *Psychological Bulletin*, *135*, 531-554.

Riva, P., & Andrighetto, L. (2012). "Everyone feels a broken bone, but only we feel a broken heart": Group membership influences the perception of targets' suffering. *European Journal of Social Psychology*, 42, 801-806.

Sue, D. W., Nadal, K. L., Capodilupo, C. M., Lin, A. I., Torino, G. C., & Rivera, D. P. (2008). Racial microaggressions against Black Americans: Implications for counseling. *Journal of Counseling & Development*, *86*, 330-338.

Todorov, A., Olivola, C. Y., Dotsch, R., & Mende-Siedlecki, P. (2015). Social attributions from faces: Determinants, consequences, accuracy, and functional significance. *Annual Review of Psychology*, *66*, 519-545.

Trawalter, S., Hoffman, K. M., & Waytz, A. (2012). Racial bias in perceptions of others' pain. *PloS one*, *7*, e48546.

Waytz, A., Hoffman, K. M., & Trawalter, S. (2015). A superhumanization bias in Whites' perceptions of Blacks. *Social Psychological and Personality Science*, *6*, 352-359.

Williams, D. R., & Mohammed, S. A. (2009). Discrimination and racial disparities in health: Evidence and needed research. *Journal of Behavioral Medicine*, *32*, 20-47.

Wilson, J. P., Hugenberg, K., & Rule, N. O. (2017). Racial bias in judgments of physical size and formidability: From size to threat. *Journal of Personality and Social Psychology*, *113*, 59-80.