

Correlates of Compassion for Suffering Social Groups

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Abstract

This study investigates whether multiple factors correlate positively or inversely with compassion felt toward suffering social groups. Data were collected from 367 participants during April 2020 to investigate hypotheses in the context of three suffering social groups in the United States during that time: the Black American community, the LGBTQ community, and those directly affected by COVID-19. Results showed that compassion toward suffering groups covaries inversely with one's own ingroup preference. Compassion toward suffering social groups also covaried positively with the extent to which a person identifies with a suffering social group or knows people in a suffering social group. Additionally, loneliness was inversely correlated with compassion for suffering groups. These results suggest that although compassion is an important emotional motivator for engagement in prosocial behaviors that are vital to maintaining relationships, multiple factors can enhance or inhibit it.

Keywords: Compassion, group identity, ingroup preference, loneliness, suffering

Correlates of Compassion for Suffering Social Groups

Humans are a profoundly social species. Social scientists have argued convincingly that, in addition to food, water, and shelter, humans have a fundamental need for social connection (Allen et al., 2021). People meet their needs for connection by developing meaningful social relationships, and in large part, they maintain these relationships through communication (Dainton, 2000). A consequential aspect of meaningful relationships is supporting those who are suffering and, at times, acting to reduce others' suffering. Thus, the provision of compassion—in which people not only empathize with another person's suffering but are motivated to act in ways that reduce their suffering—can be considered an important dimension and emotional factor in the use of prosocial interpersonal behavior (Kim et al., 2020).

Compassion for suffering groups may be impaired or bolstered by several factors, however. This study investigates whether compassion is positively associated with the extent to which someone identifies with a suffering group and the number of people one knows within that group. We also explore whether a general preference for ingroup members and experiences of loneliness impair feelings of compassion toward suffering groups. Our predictions are grounded in evolutionary psychology (specifically the evolutionary theory of loneliness), Hamilton's theory of inclusive fitness, and social identity theory (specifically regarding ingroup preference). The following sections provide an overview of compassion before considering how the preference for ingroup members, identification with suffering groups, the number of people known in a suffering group, and loneliness may be associated with compassion felt toward others. This knowledge is potentially valuable because it may warrant efforts to reduce loneliness or ingroup preference, or to increase identification and familiarity with suffering groups, as a

way to promote compassion, and the roles of these potential predictors are not well articulated thus far.

Evolutionary Psychology, Inclusive Fitness, and Ingroup Preference

Our theoretic argument is rooted in the principles of evolutionary psychology, which proposes that some psychological traits evolved in the human species, via natural selection pressures, due to their contributions to the superordinate goals of survival and procreation (Buss, 2019). Among those traits with direct implications for survival is *ingroup preference*, wherein individuals favor those they perceive to be similar to them and experience wariness or hostility toward those they perceive as dissimilar (Shamo-Nir et al., 2021). From the perspective of evolutionary psychology, such a tendency is adaptive insofar as those who are similar—especially those who *look* similar—are more likely than those who are different to share genetic material with the self, enhancing the evolutionary imperative to help rather than harm the self.

Hamilton (1964, 1970) formalized this observation in his inclusive fitness theory, which explains that procreative success in an evolutionary framework is achieved through replication of the genes rather than replication of the organism. In other words, individuals may find procreative success by having offspring of their own, but they may also find success by contributing to the health and viability of others who share their genes (i.e., genetic relatives). Hamilton originally proposed his theory as an explanation for altruism, previously considered paradoxical by evolutionary psychologists because it seemed at odds with the survival imperative. If one gives away resources for the benefit of others, that is, one is by definition depleting the resources available to the self. To the extent that such a tendency represents a cost to the self's survival, that tendency should be selected against by natural selection pressures, yet the tendency persists among humans (Kurzban et al., 2015). Hamilton observed that altruistic

behavior can be evolutionarily adaptive to the extent that it benefits those who carry one's genes because natural selection favors *genetic* success rather than reproductive success *per se*.

The psychological and behavioral tendency to favor one's ingroup (those with whom one shares perceived similarities) and to feel wary or even hostile to outgroups (those seen as different from the self) is also implied by Tajfel and Turner's social identity theory (Tajfel, 1981; Tajfel & Turner, 1986). This tendency is so deeply ingrained in humans that even arbitrary divisions—such as those initiated by a coin toss dividing participants into a “heads” group and a “tails” group—instigate ingroup favoritism and outgroup bias (Brewer, 1979; Hogg & Turner, 1987).

In the course of human evolution, one's genetic relatedness to another has not always been evident, so the species has evolved to attend to external cues when distinguishing ingroup and outgroup others. Chief among those cues is physical appearance, given that genetic contributions to physical attributes lead to greater physical similarity between related than non-related individuals (see Pośpiech et al., 2022). This explains, in part, the tendency to view faces of one's own race as more attractive (Rhodes et al., 2005) and more trustworthy (Birkás et al., 2014). Zajonc et al. (1987) even found that spouses reported higher marital satisfaction the more similar their physical appearances. Beyond physical appearance, humans show favoritism to those with similar personalities (Byrne et al., 1967), similar attitudes (Byrne, 1961), and similar accents (Kinzler et al., 2009), all of which may imply a greater likelihood that another individual has been raised similarly to or in proximity to the self, increasing the chances of some level of genetic tie relative to those whose personalities, attitudes, or accents are strikingly dissimilar.

One experience that can be invoked by the adaptive motivation to tend to inclusive fitness is compassion for those who are suffering. In the following section, we argue that inclusive

fitness motivations invoke preferential compassion for groups with whom one or one's acquaintances identify.

Compassion

The term *compassion* is often used interchangeably with terms such as *empathy*, *sympathy*, and *pity*. Although these terms may all belong to the same emotional family (Ekman, 1982), insofar as they recognize the suffering or pain of another, they differ in people's reactions to the recognized distress. Empathy involves vicariously experiencing another's emotional state (Fernandez & Zahavi, 2020), sympathy is the experience of grief and concern based on the suffering of others (Gerace, 2020), and pity recognizes the suffering of others, but is accompanied by a sense of superiority toward the sufferer (Ben-Ze'ev, 2000). Unlike these emotional states, compassion not only involves noticing and feeling another's suffering, but also includes the ambition to respond by supporting those in distress (Kanov et al., 2004; Miller, 2007). Specifically, compassion is "the feeling that arises in witnessing another's suffering and that motivates a subsequent desire to help" (Goetz et al., 2010, p. 2). From an evolutionary perspective, the desire to help reduce suffering is influenced by the costs and benefits of helping the person in need (e.g., Sober & Wilson, 1998). To assess these costs and benefits, people engage in an appraisal process. An important aspect of this appraisal process is deservingness, which leads us to a discussion of research investigating how people decide whether a suffering group deserves compassion as opposed to blame or reproach.

Who Deserves Compassion?

In general, compassion occurs toward those who are vulnerable (Oveis et al., 2010), such as children, the elderly, and those who are ill or poor. Of note, prior research suggests that the severity of one's suffering may predict the amount of compassion received. For example, one

experiment showed greater perceived seriousness of natural disaster news coverage elicited greater compassion (Yan, 2012). Compassion is also felt for those judged as having no or minimal control over the outcomes of a situation and are deemed as not responsible for their suffering (Smith & Ellsworth, 1985). Thus, deservingness of one's suffering is an important appraisal that leads to feelings of compassion, or in some cases, blame. Often, these judgments are made regarding one's character and actions. A person may first notice another individual's suffering and subsequently engage in information seeking (Miller, 2007), and one potential result is concluding the person is responsible for their own suffering. In these instances, suffering individuals are less likely to receive compassion (Goetz et al., 2010). On the other hand, compassion is often felt toward those who are experiencing undeserved suffering (Nussbaum, 2001). Thus, those who are seen as not responsible for their suffering are likely recipients of compassion from others.

Ingroup Preference and Identification with Suffering Groups

Ingroup preference may also reduce compassion to those who are suffering in what is considered a dissimilar group from one's own (Berger et al., 2018), insofar as compassion for members of outgroups is not as adaptive for inclusive fitness as compassion for ingroups. Evidence suggests this phenomenon occurs at the neurological level. The portion of the brain responsible for experiencing empathy for others' pain (the anterior cingulate cortex) displayed greater activation when participants viewed members of a racial ingroup experiencing pain, in comparison to viewing people in a racial outgroup experiencing pain (Xu et al., 2009). Additionally, there is a strong motivation to improve the other's well-being especially when they identify with one another's experiences and needs (Cosley et al., 2010). In addition to identifying or not identifying with a suffering group and one's own ingroup preference, a person's own

perceived level of loneliness may also affect compassion felt toward suffering groups. The following section reviews the literature in support of this possibility.

Does Experiencing Loneliness Affect Compassion Toward Suffering Groups?

When people perceive a gap between the quantity and quality of social connections they desire versus what they perceive they are experiencing, they suffer from loneliness (Peplau, 2022). Although most people will experience intermittent (i.e., temporary) loneliness at some point in their life (Hawkley & Cacioppo, 2010), a sizable portion of the population suffers from chronic or severe loneliness (Sherwood et al., 2014). Even before the COVID-19 pandemic, the prevalence of loneliness in the United States was considered a significant public health problem, with loneliness rates in the U.S. population rising from 54% in 2018 to 61% one year later (Cigna, 2020). These experiences of loneliness are consequential, as there are several well-documented detrimental effects of loneliness on one's mental and physical health (e.g., Cooper et al., 2021). For example, loneliness correlates with mental health detriments including depression (Gallagher et al., 2021) and suicide ideation (Goldsmith et al., 2002). Loneliness also contributes to a variety of physical detriments, including cardiovascular disease (Hawkley & Cacioppo, 2010) and all-cause mortality (Holt-Lunstad et al., 2015).

Why, though, would experiences of loneliness impair compassion toward others who are suffering? Cacioppo and Cacioppo's (2018) evolutionary theory of loneliness (ETL) recognizes the potential benefits and dangers of engaging in social relationships in terms of one's survival and reproduction efforts to preserve one's genetic legacy. ETL posits that when people experience loneliness, they are more likely to perceive social interactions as threatening. That is, loneliness activates a survival mechanism that results in a hypervigilant sensitivity to threats from others. This results in lonely people becoming more self-focused as they experience an

unconscious increase in concern for their own welfare (Cacioppo et al., 2017), and this may hinder the perspective-taking aspects of connecting with others that are needed to experience compassion (Stiff et al., 1988).

In line with the inward focus initiated by loneliness, research has documented that lonely individuals give less attention to conversational partners than do non-lonely individuals (Jones et al., 1982). Moreover, Twenge et al. (2007) showed in seven experiments that social exclusion decreases prosocial behavior. Notably, the effect of social exclusion on decreased prosocial behavior was mediated by empathy, which aligns with our claim that compassion is affected by identification with a suffering group or the number of people known in a suffering group.

A related outcome of the hypervigilance initiated by loneliness is the tendency to evaluate other people and their behaviors more negatively. For instance, when people assess hypothetical others, their own loneliness predicts more negative evaluations of those individuals (Rotenberg & Kmill, 1992) and of their social behavior (Hanley-Dunn et al., 1985). Moreover, in social interactions with strangers, loneliness predicted negative evaluations of partners, albeit for men only (Jones et al., 1983). Some research shows that people's loneliness is negatively associated with evaluations of people they know (Wittenberg & Reis, 1986).

Based on the hypervigilance, inward self-focus, and tendency to evaluate others negatively that are initiated by loneliness, we contend that loneliness results in an increased concern for one's own welfare and a reduction in prosocial behaviors, specifically the emotional experience of compassion that facilitates prosocial behaviors toward suffering groups. As a context for testing this possibility, we now turn our attention to three specific groups in the United States who may have experienced an acute need for compassion due to the events of 2020.

Compassion for Suffering Social Groups in the Year 2020

The year 2020 presented several challenges for the U.S. population and, consequently, several opportunities to feel compassion toward those who were suffering. Three groups in particular experienced considerable suffering during 2020: the Black community (primarily due to the high-profile deaths of George Floyd and Breonna Taylor at the hands of law enforcement officers); the LGBTQ community (primarily due to the rescinding of federal rules preventing discrimination based on gender identity); and the community of those affected by COVID-19 (primarily due to the physical, mental, and social consequences of the virus and resulting policies). Therefore, we pose the following hypotheses, which we investigate in the context of these three groups that experienced considerable suffering during the year 2020 during which we collected our data.

First, on the basis that compassion is felt toward vulnerable populations (Oveis et al., 2010) and compassion is perceived to be deserved by those thought not to be personally responsible for their suffering (Nussbaum, 2001), we predict the following:

H1: Compassion is a) positively related to perceptions of a group's current suffering and b) inversely related to a group's responsibility for its own suffering.

Second, as previously reviewed, identification with others based on characteristics such as race may affect the extent to which people can identify with others' suffering (Xu et al., 2009). Additionally, people are particularly motivated to help improve the well-being of those who are suffering when they can identify with the suffering group's experiences and needs (Cosley et al., 2010). According to our theoretic argument, the tendency for a person's ingroup preference and/or level of identification with or connection to members of a suffering social group to affect compassion toward these groups is adaptive.

We further propose that compassion is positively related to the number of people known in a suffering group. Intergroup contact (Allport, 1954) is positively associated with the experience of empathy and empathic concern, the underlying “other-oriented” distress associated with the recognition of the suffering of another (Davis, 1983), for outgroup members (Abbott & Cameron, 2014; Bateson et al., 2005; Pettigrew & Tropp, 2011). Bateson et al. (1997) found that the experience of positive empathy for even a single individual within a stigmatized group is associated with greater generalized positive empathy toward the stigmatized group as a whole. Additionally, Cialdini et al. (1997) found that relational closeness is predictive of empathic concern and willingness to help, the conceptual definition of compassion presented within this research. These findings support the prediction that familiarity with individuals in a suffering group increases the experience of compassion toward that group. Formally stated, we hypothesize the following:

H2: Compassion is a) inversely related to ingroup preference, b) positively related to self-identification with a suffering group, and c) positively related to the number of people known in a suffering group.

Third, as the evolutionary theory of loneliness provides, the experience of loneliness results in an increasingly inward, self-centered focus on one’s own welfare (Cacioppo & Cacioppo, 2018) and a decrease in prosocial behaviors (Twenge et al., 2007). Because compassion motivates prosocial behavior (Leiberg et al., 2011), we hypothesize the following association between compassion and loneliness:

H3: Compassion is inversely related to loneliness.

Finally, we consider the possibility that an individual’s loneliness works in tandem with their identification with and connection to individuals in suffering social groups, as well as their

level of ingroup preference. If it is true that compassion is inhibited by loneliness (as Cacioppo and Cacioppo's ETL leads us to consider) but is enhanced by self-identification with a group and/or knowing people in a group (as our evolutionary argument leads us to consider), then it is likely that the inhibitory effect of loneliness on compassion is lessened when a personal connection to the group is present, as opposed to absent. Conversely, to the extent that ingroup preference leads to wariness of strangers and a potent self-focus (Tajfel & Turner, 1986), the inhibitory effect of loneliness on compassion is likely enhanced when ingroup preference is strong, as opposed to weak. Therefore, we hypothesize the following:

H4: The correlation between compassion and loneliness is moderated by a) self-identification with a suffering group, b) number of people known in a suffering group, and c) strength of ingroup preference.

Method

Participants

A total of 436 individuals started the survey; however, 69 individuals (15.8%) did not complete enough of the survey to be included in the final sample. The sample ($N = 367$) was composed of 261 female and 106 male adults ranging in age from 18 to 75 years ($M = 34.44$ years, $SD = 13.14$). With respect to ethnicity, most (89.9%) identified as non-Hispanic; with respect to racial identity, 75.2% identified as White, 4.9% as Black, 9.8% as Asian/Pacific Islander, 7.6% as Latino/a, and 7.4% as having another racial background or a multi-racial background. These percentages sum to $>100\%$ because some respondents claimed more than one racial identity. At the time of the study, 10.0% of participants had completed a high school diploma or less, 18.5% had some college credit but no degree, 13.8% had completed an associate's (2-year) degree, 48.5% had completed a baccalaureate degree, and 9.2% had

completed a graduate degree. Among those reporting a relational status, 42.1% were married, 35.3% were single, 8.4% were divorced, 7.9% were in a serious dating relationship, 2.6% were casually dating, 2.1% were engaged, 1.1% were separated, and 0.5% were widowed.

Approximately half (47.4%) reported earning \$60,000US or less per year, with the remainder reporting an annual income exceeding \$60,000US. An *a priori* power analysis indicated that a sample size of 361 would provide 85% power to identify small ($f^2 = 0.02$) effect sizes in multiple regression, assuming $\alpha = .05$.

Procedure

All procedures outlined herein were approved by one of the author's university's Institutional Review Board. Some participants were recruited via the Amazon.com crowdsourcing marketplace Mechanical Turk (MTurk). MTurk participants filled out and submitted an online questionnaire and received \$2.50US in exchange for their participation. The median time to complete the survey was 8 minutes and 25 seconds. Although samples recruited on MTurk for academic research are not truly representative of the U.S. adult population, they are typically more representative than in-person convenience samples (Paolacci et al., 2010). Other participants were recruited via a combination of social media and snowball recruitment strategies and completed this questionnaire as part of a broader longitudinal project. Participants recruited via social media/snowball sampling were entered into a drawing to win one of a dozen \$50US Amazon eGift cards.

Regardless of recruitment strategy, inclusion criteria were that participants had to be 18 years of age or older and able to read and write in English. In addition, those recruited via MTurk were required to have achieved "master worker" status (a designation indicating consistently high quality in submitted work) and have an average approval rate equaling or exceeding 90%.

Manipulation

Participants were told that they would be asked to consider a specific social group when responding to the questions in the study. This manipulation was designed to encourage participants to focus on a social group experiencing identifiable suffering at the time. In this study, participants were randomly assigned to report either on the Black American community ($n = 125$; 34.1%), the LGBTQ (lesbian, gay, bisexual, transgender, and queer/questioning) community ($n = 125$; 34.1%), or the community of people infected with COVID-19 ($n = 117$; 31.8%).

The data collection occurred at a time when the Black Lives Matter movement called attention to systemic racial injustice (Updegrave et al., 2020), the U.S. presidential administration was publicly challenging protective regulations for LGBTQ adults (Jaffe, 2000), and more than 150,000 U.S. American adults had died from COVID-19 (Bogel-Burroughs, 2020). After learning of the group to which they had been assigned to report, participants were asked to what extent they identified as a member of that group and the extent to which they personally know people who belong to that group. Additional information on the format of these questions, as well as the other measures used in this study are detailed next.

Measures

Except when otherwise noted, all of the following measures were measured using 9-point semantic differential items. Answer choices were anchored by the same adjective pair for each item (1 = *Strongly Disagree*; 9 = *Strongly Agree*). Participants received and responded to the items for each variable in an individually randomized order. Descriptive statistics and zero-order intercorrelations appear in Table 1.

Compassion for target group (henceforth, *compassion*) was measured with the five-item Santa Clara Brief Compassion Scale (Hwang et al., 2008). Items included “When I hear about someone in this community going through a difficult time, I feel a great deal of compassion for him or her” and “I would find it highly meaningful to help people in this community if they needed me.” The scale demonstrated excellent internal reliability (McDonald’s $\omega = .92$).¹

Perceived current suffering of the target group (henceforth, *current suffering*) was measured with three items developed for this study. An example item was “People in this community are suffering a great deal right now.” The scale also included one reverse-coded item: “It is an easy time for people in this community.” Except for the reverse-coded item, higher scores indicated greater levels of current suffering. The scale demonstrated adequate internal reliability ($\omega = .87$).

Perception that target group is responsible for its own problems (henceforth, *responsibility*) was measured with a four-item scale developed for this study. Example items were “This community bears responsibility for the problems it is facing right now” and “The community contributes to its own problems.” A reverse-coded item was also included: “The problems this community is dealing with right now are not their fault.” Except for this reverse-coded item, higher scores indicated greater responsibility. The items demonstrated adequate reliability ($\omega = .87$).

Ingroup preference was measured with seven items developed for this study. An example item was “Most of the time, I prefer interacting with people who are similar to me.” Two reverse-coded items were included (e.g., “I love interacting with people who are very different from myself”). Except for the two reverse-coded items, higher scores indicated greater levels of ingroup preference. The scale demonstrated sufficient internal reliability ($\omega = .81$).

Extent to which a person identifies with their randomly assigned group was measured using the item, “To what extent do you consider yourself to be a member of this community?”. Participants were instructed to respond using a slider ranging from 1 to 100, wherein higher numbers indicated stronger identification with the group to which they were randomly assigned (the Black American community, the LGBTQ community, or the community of people infected with COVID-19).

Extent to which a person personally knows people belonging to their randomly assigned group was measured using the item “Do you know many people in this community? (Note: We are not asking how many specific people you know, but the extent to which you know or do not know many people in this community).” Responses were collected using a slider ranging from 1 to 100, with higher values indicating a greater number of people known in the group to which they were randomly assigned (the Black American community, the LGBTQ community, or the community of people infected with COVID-19).

Loneliness was measured with the 20-item Revised UCLA Loneliness Scale (Russell, 1996), which includes 10 negatively worded items (e.g., “No one really knows me well”) and 10 positively worded (reverse-scored) items (e.g., “There are people I feel close to”). Participants responded to the items using a 4-point scale (1 = *Never*; 4 = *Often*). The scale demonstrated excellent internal reliability ($\omega = .95$).

Data Analysis

Data analyses were conducted using Statistical Package for the Social Sciences (SPSS) version 26. After exploring the data for potential covariates using correlations, Welch’s *t*-tests, and ANOVAs, a series of hierarchical regressions was conducted to test the study’s hypotheses. Continuous variables were grand mean centered (Cohen et al., 2003).

Results

Descriptive Statistics

We began by examining loneliness and compassion scores relative to participants' demographic characteristics. Men reported slightly higher scores on loneliness ($M = 2.10$, $SD = .66$) than did women ($M = 2.04$, $SD = .61$), but the difference was nonsignificant. Loneliness was nonsignificantly correlated with age, $r(362) = -.01$, p (two-tailed) = .81. Loneliness was unrelated to race/ethnicity and education level, but it varied as a function of annual income, $F(12, 352) = 2.45$, $p = .004$, $\eta^2 = .07$. A post-hoc comparison with the moderately conservative Student-Newman-Keuls (SNK) test revealed that those making \$90,000 to \$99,999 per year were significantly less lonely than those making \$10,000 to \$19,999 per year and those making \$60,000 to \$69,999 per year.

Women reported higher scores on compassion ($M = 7.12$, $SD = 1.74$) than did men ($M = 6.19$, $SD = 1.98$), Welch's $t(174.61) = 4.22$, p (two-tailed) < .001, Cohen's $d = .50$. Compassion was unrelated to age, $r(362) = .06$, p (two-tailed) = .26. Compassion scores were unrelated to race/ethnicity, education level, and annual income.

Next, we compared participants assigned to the three social groups on scores for compassion, current suffering, and perceived responsibility for problems. Compassion varied for groups, $F(2, 363) = 5.84$, $p = .003$, $\eta^2 = .03$. An SNK test showed that compassion was highest for COVID-19 sufferers ($M = 7.12$, $SD = 1.41$) and Black Americans ($M = 7.05$, $SD = 1.83$), significantly higher than for LGBTQ Americans ($M = 6.39$, $SD = 2.13$).

Current suffering varied for groups, $F(2, 363) = 25.92$, $p < .001$, $\eta^2 = .12$. A post-hoc SNK test showed that suffering was highest for Black Americans ($M = 7.71$, $SD = 1.62$) and

COVID-19 sufferers ($M = 7.70, SD = 1.25$), significantly higher than for LGBTQ Americans ($M = 6.37, SD = 2.05$).

Perceived responsibility for current problems did not vary among groups, $F(2, 363) = 2.01, p = .14$. The group means were similar among COVID-19 sufferers ($M = 3.91, SD = 1.83$), Black Americans ($M = 3.53, SD = 1.98$), and LGBTQ Americans ($M = 3.42, SD = 2.11$).

Hypotheses

H1 predicted that compassion is a) positively related to current suffering and b) negatively related to responsibility. To test the hypothesis, we constructed two hierarchical regressions. Because compassion scores varied by sex and by social group, we entered participant sex and two dummy codes representing group assignment in the first stage of both of the regressions. In the first regression, we entered current suffering in the second step. The regression produced a significant overall effect, $F(4, 362) = 74.04, p < .001$. Collinearity diagnostics were unremarkable; VIF scores were ≤ 1.51 and tolerance scores were $\geq .66$. As predicted by H1a, compassion was positively related to current suffering, $\beta = .66, p < .001$. H1a is confirmed.

In the second regression, we entered responsibility in the second step. The regression produced a significant overall effect, $F(4, 362) = 49.91, p < .001$. VIF scores were ≤ 1.39 and tolerance scores were $\geq .72$. As predicted, compassion was inversely related to responsibility, $\beta = -.53, p < .001$. H1b is confirmed. Results of both regressions appear in Table 2.

H2 predicted that compassion is a) negatively related to ingroup preference and b) positively related to self-identification with group and c) number of people known in group. To test the hypothesis, we constructed three hierarchical regressions. We entered participant sex and two dummy codes representing group assignment in the first stage of the regressions. In the first

regression, we entered ingroup preference in the second step. The regression produced a significant overall effect, $F(4, 362) = 24.01, p < .001$. VIF scores were ≤ 1.37 and tolerance scores were $\geq .73$. As predicted by H2a, compassion was inversely related to ingroup preference, $\beta = -.36, p < .001$. H2a is confirmed.

In the second regression, we entered self-identification with group in the second step. The regression produced a significant overall effect, $F(4, 362) = 9.97, p < .001$. VIF scores were ≤ 1.35 and tolerance scores were $\geq .74$. As predicted by H2b, compassion was positively related to self-identification with group, $\beta = .18, p = .001$. H2b is confirmed.

In the third regression, we entered number of people known in group in the second step. The regression produced a significant overall effect, $F(4, 362) = 20.43, p < .001$. VIF scores were ≤ 1.47 and tolerance scores were $\geq .68$. As predicted by H2c, compassion was positively related to number of people known in group, $\beta = .34, p < .001$. H2c is confirmed. Results for all three regressions appear in Table 3.

H3 predicted that compassion is negatively related to loneliness, and H4 predicted that the association between compassion and loneliness is moderated by a) self-identification with group, b) number of people known in group, and 3) ingroup preference. To test both hypotheses, we constructed two hierarchical regressions. Because compassion scores varied by sex and by social group, we entered participant sex and two dummy codes representing group assignment in the first stage of the regressions. In the first regression, we entered loneliness and self-identification in the second stage, and the loneliness-by-self-identification interaction in the third stage. The overall regression was significant, $F(5, 293) = 7.07, p < .001$, yet the interaction effect was nonsignificant, $\beta = .07, p = .73$. H4a was unsupported, so we reconfigured the regression by removing self-identification and the loneliness-by-self-identification interaction

effect. The reconfigured regression produced a significant overall effect, $F(4, 362) = 9.45, p < .001$. VIF scores were ≤ 1.39 and tolerance scores were $\geq .73$. As predicted, compassion was inversely related to loneliness, $\beta = -.12, p = .015$. Regression results appear in Table 2. H3 is confirmed.

To test H4b, we ran a new regression with participant sex and group membership in the first stage, loneliness and number of people known in the second stage, and the interaction between loneliness and number of people known in the third stage. The regression produced a significant overall effect, $F(5, 353) = 15.07, p < .001$, yet the interaction effect was nonsignificant, $\beta = .25, p = .07$. H4b is unsupported.

To test H4c, the regression featured participant sex and group membership in the first stage, loneliness and ingroup preference in the second stage, and the interaction between loneliness and ingroup preference in the third stage. The regression produced a significant overall effect, $F(6, 183) = 11.48, p < .001$, but the interaction effect was nonsignificant, $\beta = .47, p = .11$.

Discussion

Compassion is a relevant prosocial interpersonal behavior whenever suffering is evident, and the events in the year 2020 brought about acute suffering for many people. Three social groups in the U.S. arguably experienced heightened suffering during this year: the Black American community, the LGBTQ community, and those infected with COVID-19. This study explored the extent to which compassion toward these three groups was associated with participants' loneliness, their ingroup preference, their identification with and knowledge of members of the social group, their perception of the group's level of suffering, and their attribution for the group's responsibility for its own suffering.

Compassion for social groups was higher when participants believed those groups were suffering, when people personally identified with those groups, and when people knew people who belonged to those groups. These findings regarding compassion towards suffering groups align with prior research that has investigated compassion towards individuals. For example, the perceived seriousness of the suffering experienced by an individual positively correlates with compassion for that individual (Yan, 2012), and our study reaffirmed this positive association regarding severity of suffering and compassion at the social group level. On the contrary, compassion was lower when participants exhibited an ingroup preference and when they believed the social groups bore responsibility for their own suffering. Again, these findings were consistent with prior research regarding compassion towards individuals. For example, research on compassion towards individuals suggests that individuals responsible for their suffering receive less compassion (Nussbaum, 2001), and this same correlation was shown in the present study at the group level. Likewise, the tenet of social identity theory that people are wary of those from outgroups (Tajfel & Turner, 1986) was affirmed by the negative correlation between compassion and ingroup preference observed in this study. Notable were the magnitudes of the associations, which ranged from $\beta = .18$ for self-identification to $\beta = .69$ for current suffering. These correspond to Cohen's d values ranging from .37 (95% CI: 0.160 – 0.573) for self-identification to 1.91 (95% CI: 1.665 – 2.159) for current suffering.

Based on the claim from the evolutionary theory of loneliness (ETL) that loneliness initiates a heightened sense of vulnerability to threat and an inward focus (Cacioppo & Cacioppo, 2018), we predicted that loneliness would be inversely associated with compassion (net of the effects of the particular group being considered), and that self-identification with the group and number of people known in the group would moderate this effect. When people are

lonely, they are more likely to perceive others as a potential threat and to evaluate them negatively (Rotenberg & Kmill, 1992). Considering that a prerequisite for experiencing compassion is an openness and receptivity to others' experiences (Kanov et al., 2004), we proposed the experience of lonely individuals viewing others as a threat would translate into impaired compassion for the suffering of others. Indeed, loneliness showed the predicted inverse main effect on compassion, suggesting that when people are lonely, their attention may be more focused on their own suffering than on the suffering of others. The beta value for the main effect of loneliness was $-.12$; although not enormous, this translates to a Cohen's d value of $.24$ (95% CI: $0.037 - 0.448$). This finding aligns with prior research using ETL that has shown lonely people to be more self-focused and concerned with their own well-being than others (Cacioppo et al., 2017).

Of note, the moderating effects were nonsignificant, suggesting that loneliness can impair compassion even for groups with which one identifies and/or is familiar. This aligns with prior studies that have shown that loneliness is associated with more negative views towards strangers and new acquaintances (Jones et al., 1981), as well as people that lonely individuals know well (Wittenberg & Reis, 1986). Thus, regardless of how much one has an ingroup preference, knows people in a social group, or identifies with a social group, the experience of loneliness appears to generate a negative perception of others, and this may explain why the main effect of loneliness on compassion was not moderated by variables related to social groups.

Implications

The most evident implication of the current findings relates to the efficacy of appeals to compassion for persuasive purposes. For instance, Lu and Schuldt (2016) induced compassion for climate change victims and found that compassion increased participants' support for climate

change mitigation efforts. Myrick and Oliver (2015) similarly showed that mixed-emotion messages invoked compassion for the subject of a skin cancer video. The present findings suggest, first, that compassion appeals may be more effective when targeted at more socially connected audiences, whereas they may have lower efficacy with lonely or socially disconnected participants. Our findings also suggest that compassion appeal messages may be more effective to the extent that they emphasize both the magnitude and the undeserved nature of the group's suffering, appeal to the audience's identification with the group, and/or prime the audience to consider who they personally know in the suffering group. These implications await verification, of course, but they provide reason to believe that these specific elements of a compassion appeal message may support the effectiveness of that message.

Second, although a fair amount has been written on the inverse association between loneliness and *self*-compassion (e.g., Akin, 2010), this study is the first (to our knowledge) to document such an association between loneliness and compassion for others. Although no causal claim can be advanced from these cross-sectional data, the evolutionary theory of loneliness states that loneliness induces hypervigilance to threat, which may in fact cause lonely individuals to focus on their own suffering and to evaluate others more negatively, both of which can reduce their compassion for others. If true, this raises the possibility that efforts to induce a focus on, and compassion for, others may be useful when treating the symptoms of loneliness psychotherapeutically.

Third, at a practical level, the results of this study suggest that people should seek opportunities to develop and maintain close relationships with people from diverse backgrounds. By finding opportunities to connect with people from different social groups from one's own, people can both combat loneliness and also foster compassion towards others. Forming these

connections may require people to set aside preconceived notions about social groups besides their own and enter into such potential relationships with an open mind and to seek understanding of why people may have different perspectives or values than their own. Specifically, opportunities to develop relationships with those from other social groups might occur around shared activities, such as volunteering for a charitable organization or joining other community organization with members from a variety social groups.

Strengths, Limitations, and Future Directions

Like all studies, this project benefited from certain strengths and endured certain limitations. One strength was the use of three social groups perceived to be enduring moderately substantial suffering for a variety of reasons in 2020. Indeed, participants rated the suffering of Black Americans at an average of 7.71, COVID-19 sufferers at an average of 7.70, LGBTQ Americans at an average of 6.37 on a 9-point scale. Given the social, political, and health-related challenges endured by these groups, particularly in the year 2020, all three were prime examples of groups that would be expected to elicit compassion. Indeed, average compassion scores ranged from 6.39 to 7.12 on a 9-point scale.

Of course, these were only three of many potential groups whose suffering was highlighted in 2020. For instance, Americans of Asian descent endured nearly a 150% increase in violence and hate crimes in 2020 (Yam, 2021), many of which were linked ostensibly to President Donald Trump's repeated references to the "China virus" and the "Kung flu" when describing the novel coronavirus (Restuccia, 2020). For this study, we selected Black Americans, LGBTQ Americans, and COVID-19 sufferers as the test groups because they suffered a diversity of offenses and for a variety of reasons, but other groups would also have been viable candidates for our focus on compassion. In a similar vein, participants in our study were assigned to

consider only one social group, precluding consideration of individuals who belonged to more than one group (e.g., a Black adult diagnosed with COVID-19).

Some may regard our recruitment of MTurk workers as a limitation. Online samples are often criticized, particularly for their representativeness (e.g., Paolacci & Chandler, 2014), and it is certainly true that an MTurk sample is not representative of the U.S. adult population. These concerns aside, however, we submit that the sample we recruited from MTurk was likely more diverse in terms of age, socioeconomic status, education, ethnicity, and geography than typical relational communication samples. Our participants ranged in age from 18 to 75 years, with an average of 34 years of age, and they represented a range of racial groups, educational levels, relational statuses, and income. Finally, we also note the potential for common method variance inflating the strength of the correlations amongst the variables tested in this study.

Future research could expand upon the present efforts in at least two ways. First, as noted above, future studies could examine additional social groups experiencing suffering at the time of the study. Our theoretic arguments do not propose or assume that the associations between compassion, loneliness, group identification, and ingroup preference vary as a function of the particular social group on which an individual is reporting, so expanding the range of groups considered in this research can confirm that the proposed associations are not group specific. Second, in line with Lu and Schuldt (2016), future research may explore whether compassion for suffering social groups can be deliberately induced by appealing to the elements of self-identification, familiarity with the group, and current suffering. Induced compassion could then be used to predict support for policies aimed at ameliorating group suffering.

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Table 1

Descriptive Statistics and Intercorrelations for Self-Report Measures (N = 367)

Outcome	Min	Max	<i>M</i>	<i>SD</i>	2.	3.	4.	5.	6.	7.
1. Self-identification with group	0.00	100.00	23.74	33.57	.50**	.20**	.02	.08	.01	-.12*
2. People known in group	0.00	100.00	38.98	31.33	--	.32**	-.05	.16**	-.18**	-.23**
3. Compassion	1.00	9.00	6.85	1.86		--	-.14**	.66**	-.54**	-.38**
4. Loneliness	1.00	4.00	2.06	0.63			--	-.04	.06	.21**
5. Current suffering	1.00	9.00	7.26	1.79				--	-.52**	-.27**
6. Responsibility	1.00	9.00	3.61	1.99					--	.31**
7. Ingroup preference	0.00	8.33	4.36	1.36						--

Note. All variables were measured on a scale of 1-9, except loneliness (measured on a 1-4 scale) and identification with community and people known in community (which were both measured on a scale of 0-100). **p* < .05; ***p* < .01 (two-tailed).

Table 2

Hierarchical Regressions Predicting Compassion from Current Suffering, Responsibility, and Loneliness (N = 367)

Step	Variables	B	SE B	β	ΔR^2	B	SE B	β	ΔR^2	B	SE B	β	ΔR^2	B	SE B	β	ΔR^2
1	Sex	-.90	.21	-.22 [†]	.08 [†]												
	Condition dummy 1 = LGBTQ	-.68	.23	-.17 [*]													
	Condition dummy 2 = Black	-.04	.23	-.01													
2	Current suffering					.66	.04	.69 [†]	.37 [†]								
2	Responsibility									-.50	.04	-.53 [†]	.28 [†]				
2	Loneliness													-.37	.15	-.12 [*]	.02 [*]

Notes. Three separate regression analyses were conducted. Step 1 was identical in each. Each step 2 featured either perceptions of current suffering (H1a), responsibility (H1b), or loneliness (H3). For current suffering, $R^2 = .45$; adjusted $R^2 = .44$; $F(4, 362) = 74.04, p < .001$. For responsibility, $R^2 = .36$; adjusted $R^2 = .35$; $F(4, 362) = 49.91, p < .001$. For loneliness, $R^2 = .10$; adjusted $R^2 = .09$; $F(4, 362) = 9.45, p < .001$. * $p < .05$; [†] $p < .01$.

Table 3

Hierarchical Regressions Predicting Compassion from Ingroup Preference, Self-Identification with Group, and Number of People Known in Group (N = 367)

Step	Variables	B	SE B	β	ΔR^2	B	SE B	β	ΔR^2	B	SE B	β	ΔR^2	B	SE B	β	ΔR^2
1	Sex	-.90	.21	-.22 [†]	.08 [†]												
	Condition dummy 1 = LGBTQ	-.68	.23	-.17 [*]													
	Condition dummy 2 = Black	-.04	.23	-.01													
2	ingroup preference					-.50	.06	-.36 [†]	.13 [†]								
2	Self-identification									.01	.01	.18 [*]	.03 [*]				
2	People known													.02	.01	.34 [†]	.11 [†]

Notes. Three separate regression analyses were conducted. Step 1 was identical in each. Each step 2 featured either ingroup preference (H2a), self-identification with group (H2b), or number of people known in group (H2c). For ingroup preference, $R^2 = .21$; adjusted $R^2 = .20$; $F(4, 362) = 24.01, p < .001$. For self-identification, $R^2 = .12$; adjusted $R^2 = .11$; $F(4, 362) = 9.97, p < .001$. For people known, $R^2 = .19$; adjusted $R^2 = .18$; $F(4, 362) = 20.43, p < .001$. * $p < .05$; [†] $p < .01$.

Footnote

¹ Cronbach's alpha is the most widely reported measure of internal reliability in several academic disciplines; however, researchers have recently begun encouraging the use of its parent measure, McDonald's omega (ω). Proper use of Cronbach's alpha assumes essential tau-equivalence—that “each item measures the same latent variable, on the same scale, but with possibly different degrees of precision” (Graham, 2006, p. 934). McDonald's omega does not need to meet this assumption, but of note, McDonald's omega reduces to Cronbach's alpha when the essential tau-equivalence assumption is met (Hayes & Coutts, 2020). Thus, McDonald's omega should be used in place of Cronbach's alpha as it depends on fewer statistical assumptions being met.