

RACIAL DISCRIMINATION: THE ROLE OF PSYCHOLOGICAL FACTORS

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Abstract

Since racial discrimination is associated with mental health consequences (Vargas et al., 2020) such as depression (Flores et al., 2008) and anxiety (Ong et al., 2009), the following research investigated how racialized individuals cope with these consequences as well as the roles that learned helplessness (a psychological state resulting in uncontrollable distress; Hiroto & Seligman, 1975), and general self-efficacy (the belief in one's ability to organize and execute action to manage prospective situations; Bandura, 1995) may have. Correlational results for Study 1 replicated existing relationships in the literature except for one. The results of Study 2 showed that contrary to hypotheses, general self-efficacy did not moderate the mediation of learned helplessness in the relationships between racial discrimination to feelings depression or anxiety. This research contributes to the existing research on the negative consequences of racial discrimination by providing ideas for future research.

Keywords: Racial discrimination, Learned helplessness, General self-efficacy, Depression, Recall method

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Introduction

Racial discrimination, defined as treating someone differently due to their race (Equity and Human Rights Commission, n.d.), continues to be researched due to many reasons, such as the deleterious mental health consequences and societal inequities that affect racialized people. Research suggests that mental health consequences of racial discrimination include depression, anxiety, and distress (Paradies, 2006; Vargas et al., 2020; Williams & Mohammed, 2009). Further, recent events such as the COVID-19 pandemic and the resurgence of Black Lives Matter in 2020 has resulted in large-scale increases in anti-Asian hate crimes worldwide (Human Rights Watch, 2020) and has shed light on police brutality towards Black people (Black Lives Matter, 2020), respectively.

Previous research has shown that racial discrimination is positively related to state feelings of depression (Brown et al., 2000; Hudson et al., 2016; Hwang & Goto, 2008; Litam & Oh, 2022; Noh et al., 1999; Wei et al., 2010; Whitbeck et al., 2002) as well as state-level anxiety (Hwang & Goto, 2008; Ong et al., 2009). Specifically, researchers have found that perceived racial discrimination correlates with past-week depressive feelings ($r = .44$, Flores et al., 2008) and state anxiety ($r = .28$, Hwang & Goto, 2008). Research shows that learned helplessness partially mediates racial discrimination on past-week depressive feelings in African American (Madubata et al., 2018). Given the negative consequences of racial discrimination, it is important to increase our understanding of how these negative consequences can be mitigated. One way might be through general self-efficacy, an individual's belief that they can organize and execute action to manage prospective situations (Bandura, 1995), seen as a protective factor of depression (Bandura, 2001). In this thesis, Study 1, a cross-sectional study, examined the relationship between self-reported experiences of racial discrimination and psychological

variables. In Study 2, an experimental manipulation investigated outcome differences in those who recall an experience of racial discrimination versus those in a Control condition. Two moderated mediation models also explored the role of general self-efficacy in reducing state feelings of depression and anxiety through learned helplessness in response to racial discrimination.

Depression and Anxiety

Depression, a mood disorder, leads to common symptoms of hopelessness, intense sadness, and helplessness (Government of Canada, 2016) and can range from feeling low to full-blown symptoms of mood disorder that affects a person's daily life (American Psychiatric Association, n.d.). Studies show that there is a positive association between perceived racial discrimination and depressive feelings in Canadian refugees (Noh et al., 1999), Black Americans (Brown et al., 2000; Hudson et al., 2016), Chinese Americans (Litam & Oh, 2022), Asian Americans (Hwang & Goto, 2008; Litam & Oh, 2022; Wei et al., 2010), Latino students in the US (Hwang & Goto, 2008), Indigenous Americans (Whitbeck et al., 2002), and Brazilian adolescents (Santana et al., 2007). Additional research shows that self-reported racial discrimination was associated with past-year depression in African Caribbeans and African Americans who reported low levels of everyday discrimination (Molina & James, 2016). Thus, this is consistent with the possibility that racial discrimination can have deleterious effects such as depressive feelings.

Anxiety, defined as emotional responses of worrying and tension (American Psychological Association, n.d.) has also been shown to be positively related to racial discrimination (Hwang & Goto, 2008; Ong et al., 2009). For example, Hwang and Goto (2008) found that perceived racial discrimination was associated with short-lived anxiety such that

recalling past racial discrimination affects one's current anxiety feelings. Therefore, it is imperative to understand how racial discrimination affects state-level feelings of depression and anxiety, as well as the contextual factors that may contribute to these outcomes following experiences of racial discrimination. For example, does recalling racial discrimination experiences from childhood have a different effect on these outcomes compared to racial discrimination experiences within the last year? As another example, does recalling personal experiences of racial discrimination elicit different affective responses compared to recalling experiences of racial discrimination that occurred to one's friends or family or compared to ones seen through social media?

Theoretical Framework of Coping

According to the Transactional Theory of Stress and Coping (Lazarus & Folkman, 1984), if an individual perceives an event that negatively affects their well-being, the incident is appraised as a stressor. This is called primary appraisal, where the stressor is seen as threatening and potentially harmful to their well-being. With secondary appraisal, individuals assess whether they have the resources to cope with the stressor. Coping may be problem-focused which focuses directly on the stressor, or emotion-focused coping where individuals manage their emotional reactions to the stressor (Folkman & Lazarus, 1984). Since racial discrimination is uncontrollable and gives rise to many negative psychological outcomes such as depression, anxiety, and distress (Paradies, 2006; Vargas et al., 2020; Williams & Mohammed, 2009), individuals may use emotion-focused coping to deal with state feelings of depression and anxiety associated with racial discrimination (Paradies, 2006).

Mediators of Racial Discrimination on State Depression and Anxiety

Although there seems to be a dearth of research on the mediators of racial discrimination on anxiety, the literature on racial discrimination and depression has pointed to several partial mediators of this relationship such as having negative social support (i.e., having friends or family who criticize, argue, or let one down; Paradies & Cunningham, 2012), internalized racism (i.e., accepting negative stereotypes about one's own racial group; Carr et al., 2014), avoidant coping (Seaton et al., 2014), and learned helplessness (Madubata et al., 2018). In other words, previous research has found that having negative social support, internalized feelings of racism, and engaging in avoidant coping explain why racial discrimination is associated with more depressive feelings. In this section, I briefly summarize the research on avoidant coping and learned helplessness as mediators.

Avoidant Coping

Avoidant coping, behaviourally or cognitively evading thoughts about stressful situations (Carver et al., 1989), is an emotion-focused coping strategy (Lazarus & Folkman, 1984; Mallett & Swim, 2009; Noh & Kaspar, 2003) that may be used to cope with racial discrimination. This type of coping may be maladaptive as it has been positively correlated with racial discrimination ($r = .19$, Noh & Kaspar, 2003; $r = .20$, Wei et al., 2008; $r = .30$, West et al., 2010) and with depression ($r = .30$, West et al., 2010). Avoidant coping has also been positively associated with anxiety symptoms in a sample of Black American participants ($r = .48$, Mercier et al., 2022). Studies have shown that African Americans (Mallett & Swim, 2009; Utsey et al., 2000), Asian international students in the US (Wei et al., 2008), and Korean Canadians (Noh & Kaspar, 2003) have used avoidant coping to cope with racial discrimination and it has been found to mediate Black adolescent's racial discrimination experiences on past-week feelings of depression (Seaton et al., 2014). In other words, it seems as if avoidant coping may explain why racial

discrimination is associated with depressive feelings over the past-week. However, it remains unclear whether avoidant coping mediates the effect of racial discrimination on anxiety, although, depression and anxiety symptoms are highly correlated in Black Americans ($r = .66$, Mercier et al., 2022) and racial discrimination is also correlated with past-week anxiety in Black undergraduates from the U.S. ($r = .33$, Sosoo et al., 2020).

Learned Helplessness

Learned helplessness, a psychological state resulting in uncontrollable distress (Hiroto & Seligman, 1975), has been associated with depression (Miller & Seligman, 1975; Seligman, 1972; 1974; 1975). Racial discrimination may lead to learned helplessness since both have previously been established as uncontrollable (Broman et al., 2000; Christophe et al., 2019; Maxie-Moreman & Tynes, 2022; Seligman, 1975; Williams et al., 2018). Learned helplessness has also been shown to be a partial mediator of racial discrimination on feelings of depression. Madubata and colleagues (2018) report that learned helplessness partially mediated perceived racial discrimination on past-week depressive feelings in Black Americans. Therefore, learned helplessness may be seen as a maladaptive coping mechanism, especially since Madubata et al. (2018) found that racial discrimination and learned helplessness were both associated with more depressive feelings and that learned helplessness and depressive feelings were positively correlated ($r = .53$).

General Self-Efficacy

General Self-Efficacy, defined as beliefs about our ability to achieve a goal (Bandura, 1977), is associated with less depression. As per the Self-Efficacy Theory of Depression, when individuals face a stressful situation, with high general self-efficacy, they believe that they should be able to handle the situation, and as a result, should experience less depression (Maddux &

Meier, 1995). Based on definitions alone, general self-efficacy and learned helplessness appear to be opposing concepts, and research has found support for their negative correlation (Filippello et al., 2015; Smallheer & Dietrich, 2019, Wu & Tu, 2019) such as a correlation of $-.43$ found in an Italian sample (Filippello et al., 2015). Further, both have been theorized to be related to depression as suggested by the Learned Helplessness Model of Depression (Miller & Seligman, 1975) and the Self-Efficacy Theory of Depression (Maddux & Meier, 1995). Thus, in this thesis, I investigated the role of general self-efficacy as a moderator in lessening the effects of racial discrimination on state feelings of depression as higher general self-efficacy is theorized to be a protective factor against the harmful effects of racial discrimination.

Gender

Previous research has reported gender differences in depression with women often reporting significantly more depression than men (Piccinelli & Wilkinson, 2000) and that racialized minorities report more depressive symptoms than their White majority counterparts (Hargrove et al., 2020). This trend does not appear in anxiety research. Generally, compared to men, women report higher prevalence rates of anxiety (McLean et al., 2011) but White Americans report higher prevalence rates for anxiety disorders compared to racialized Americans who likely do not meet the criteria of anxiety disorders (Asnaani et al., 2010).

Taken together, these studies suggest that racial discrimination leads to feelings of depression through maladaptive mediators, i.e., learned helplessness, which are associated with increased depressive feelings. However, previous research raises other issues that have not been adequately dealt with to date, namely, what are the factors that may weaken the relationship between racial discrimination and depressive feelings or between racial discrimination and feelings of anxiety?

Overview of Research

The following two studies investigated the relationships between racial discrimination and psychological variables. Both studies were comprised of racialized undergraduate students at a large Canadian university. Study 1 was a cross-sectional study assessing relationships between variables and some exploratory questions. Study 2 featured an experimental manipulation and the investigation of a moderated-mediated model.

Study 1: Racial Discrimination Correlations

Study 1 examined psychological factors related to the experience of racial discrimination in racialized individuals in a cross-sectional, self-report online study. This study examined racial discrimination, learned helplessness, general self-efficacy, avoidant coping, state anxiety, state depression, and additional questions to assess the timeframe that participants were able to recall previous experiences of racial discrimination.

Hypotheses

Study 1 has seven correlational hypotheses which aim to replicate those found in the literature:

Hypothesis 1: Racial discrimination and learned helplessness will be positively correlated.

Hypothesis 2: Racial discrimination will be positively correlated with state depression and state anxiety.

Hypothesis 3: Racial discrimination and avoidant coping will be positively correlated.

Hypothesis 4: Learned helplessness and state depression will be positively correlated.

Hypothesis 5: Avoidant coping and state depression will be positively correlated.

Hypothesis 6: General self-efficacy and state depression will be negatively correlated.

Hypothesis 7: General self-efficacy and learned helplessness will be negatively correlated.

Method

Design

This study was conducted online with *Qualtrics* using self-report measures of all variables. This study was preregistered on the Open Science Framework (OSF) prior to data collection and the preregistration and cleaned data can be found here: <https://osf.io/n8vya/>.

Participants

Participants were undergraduate students recruited from York University's Undergraduate Research Participant Pool (URPP) who received 0.5 URPP credit upon participation. Data collection occurred from November to December of 2023. Inclusion criteria include those who self-identified as a racialized individual. This inclusion criteria was presented to participants in the study description on SONA Systems, prior to signing up for the study, and was also presented at the start of the study to ensure that only participants who meet the criteria can continue. The targeted sample size was 132 participants (80% Power, effect size = .30, $\alpha = .05$) as determined by G*Power for a correlation of two independent Pearson r 's. (Faul et al., 2007).

Exclusion Criteria

Prior to data cleaning, recruitment yielded $N = 288$. In accordance with the study pre-registration, participants' data were removed if they indicated in the pre-screening that they were not racialized ($n = 41$), were random responders as per the Conscientious Responders Scale (CRS; Marjanovic et al., 2014; $n = 36$), completed the study on non-computer devices ($n = 30$), took shorter than 5 minutes ($n = 6$), took longer than one hour ($n = 10$), indicated on the demographics that they were solely white ($n = 0$) and if they indicated that they knew the true

purpose of the study ($n = 0$). After data cleaning, the final sample size was $n = 165$. See Figure 1 for the data collection and exclusion procedure. Of the final sample size, 116 participants had complete responses to all measures and scale items, and the other 49 participants had up to 14 missing data points. In most cases, participants' scores were averaged for each measure and analyses were conducted as normal. In select cases, participants with missing data for entire scales (i.e., the depression scale) were excluded if the analyses were unable to be conducted in *R*.

Demographics

The final sample had 124 females (75%), 40 males (24%), and 1 participant (1%) who preferred not to respond to the question assessing gender. Age of the participants ranged from 17 to 43, with the mean age of 19.74 ($SD = 4.10$). See Figure 2 for the number of participants per racial group.

Procedure

Those who signed up for the study on SONA Systems received a *Qualtrics* link to the study. Once participants selected the link, they were provided with the consent form. After reading and signing the consent form, participants were presented with a pre-screening prompt to indicate whether they were or were not a racialized person. Following this, participants were asked to fill out scales and measures in the order presented directly below. See Appendix A for the procedure.

Materials and Measures

Learned Helplessness. Learned helplessness was measured using the Learned Helplessness Scale (LHS) (Quinless & Nelson, 1988), a 20-item Likert scale with responses from 1 = "strongly agree" to 4 = "strongly disagree" ($\alpha = .85$). The instructions were, "Please use the scale below to indicate how closely the statement describes you or your feelings about

yourself.” A sample item is, “I can find solutions to difficult problems.” Scores on this scale were positively correlated with hopelessness ($r = .252$) and negatively correlated with self-esteem ($r = -.622$) (Quinless & Nelson, 1988). In the final sample, $\alpha = .84$. See Appendix A.

General Self-Efficacy. General self-efficacy was assessed using the General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995), a widely used scale consisting of 10 items where participants respond to each item on a four-point Likert scale from 1 = Not at all true, to 4 = Exactly true. Instructions were, “Indicate how true each of these statements is depending on how you feel about the situation by selecting the appropriate response.” A sample item is, “If someone opposes me, I can find means and ways to get what I want.” Cronbach’s alphas were reported by the developers as ranging from .82 to .93. In the final sample, $\alpha = .85$. See Appendix A.

Avoidant Coping. The Avoidant subscale of the Coping Strategy Indicator (CSI) (Amirkhan, 1990) was used to measure avoidant coping when participants experienced racial discrimination. This was on a three-point Likert scale from 1 = “a lot,” 2 = “a little,” and 3 = “not at all.” Cronbach’s Alpha was shown to be .82 and .79 (Amirkhan, 1990) and .80 (Utsey et al., 2000). Amirkhan (1990) reports that scale scores are moderately correlated ($r = .554$) with the Avoidance Subscale from the Ways of Coping Checklist (Folkman & Lazarus, 1980). Instructions were, “When you encounter difficult situations, how often have you engaged in the following behaviours?” In the final sample, $\alpha = .79$. See Appendix A.

Racial Discrimination. The Discrimination Stress Scale (DSS) initially developed by Flores et al. (2008) to assess racial discrimination experiences in Spanish participants ($\alpha = .92$) was modified to assess racial discrimination experiences that racialized Canadians may face. The instructions were, “Using the scale below, please answer according to how you sometimes may feel as a racialized person living in Canada.” Scale scores are positively associated with past-

week depressive feelings and health symptoms and negatively associated with general health after controlling for acculturation, age, gender, and socio-economic status (Flores et al., 2008). The response scale is a five-point Likert scale that goes from 0, “not applicable” to 4, “very often.” An example item is, “How often is racism a problem in your life?” In the final sample, $\alpha = .90$. See Appendix A.

State Depression. Feelings of depression when racial discrimination is experienced was assessed using the Depression subscale from the Shortened Profile of Mood States (POMS) Scale ($\alpha = .907$) (Shacham, 1983). Instructions were to indicate how they felt when they experienced racial discrimination on a six-point Likert (0 = “not applicable” to 5 = “extremely”) on eight items. In the final sample, $\alpha = .95$. An example of an item is “Worthless.” See Appendix A.

State Anxiety. Anxiety, when participants experience racial discrimination, was measured using the Anxiety subscale from the Shortened Profile of Mood States (POMS) Scale ($\alpha = .803$) (Shacham, 1983). The instructions were to indicate how they felt when they experienced racial discrimination on a six-point Likert (0 = “not applicable” to 5 = “extremely”) on eight items. An example of an item is “Uneasy.” In the final sample, $\alpha = .94$. See Appendix A.

Additional Questions. Five questions created for this study were administered to assess whether participants can recall their own experiences of racial discrimination, the experiences of racial discrimination by their friends and family, and if they remember hearing about incidences of racial discrimination from the news or social media within the last year and since the COVID-19 pandemic began. Possible responses on these questions were “Yes,” “No,” and “Not sure.” These questions were included for descriptive and exploratory purposes. See Appendix A.

Demographics Questions. Three demographic questions assessing gender, age, and racial group identification were included in the questionnaire. See Appendix A.

Data Quality. The last questions presented to participants were an open-ended question and asked whether participants knew the purpose of the study, as well as whether participants completed the study on a computer. Moreover, in this study we used Marjanovic et al.'s (2014) Conscientious Responders Scale (CRS) to identify participants who answer randomly to the questionnaire. The scale consists of 5 items, randomly distributed throughout the questionnaire that instruct participants on how to answer a particular question (e.g., please answer this question by choosing number 1, "Strongly disagree"). Responding incorrectly to more than 2 of the 5 items indicates a random response pattern and these individuals were excluded from analyses. See Appendix A.

Data Analysis Plan

Pearson correlations were computed among all variables using *R*. Responses to the additional questions were analyzed for descriptive purposes to assess the timeframes of participants' and their friend's and family's experiences of racial discrimination in addition to whether they recall these experiences through social media.

Results

Descriptive Statistics

The means, standard deviations, minimum and maximum values, ranges, and Cronbach's alpha for all measures are displayed in Table 1. All Cronbach's alphas were above 0.79.

Confirmatory Analyses

All hypotheses which were Pearson's correlations were supported. First, for Hypothesis 1, racial discrimination and learned helplessness were significantly positively correlated, $r(165)$

= 0.179, $p = 0.02$. For Hypothesis 2, racial discrimination was positively correlated with state depression, $r(158) = 0.482, p < .001$, and state anxiety, $r(160) = 0.430, p < .001$. Hypothesis 3 was supported as racial discrimination and avoidant coping were positively correlated, $r(165) = 0.225, p = .004$. For Hypothesis 4, learned helplessness and state depression were positively correlated, $r(158) = 0.406, p < .001$. Further, avoidant coping and state depression were positively correlated for Hypothesis 5, $r(158) = 0.384, p < .001$. General self-efficacy and state depression were negatively correlated for Hypothesis 6, $r(158) = -0.335, p < .001$. Lastly, for Hypothesis 7, general self-efficacy and learned helplessness were negatively correlated, $r(165) = -0.633, p < .001$. See Table 2 for the full correlation matrix and Figure 3 for a visual depiction of the correlation matrix.

Exploratory Analyses

Five exploratory questions were administered to participants to exploratorily assess their ability to recall experiences of racial discrimination within certain timeframes. These questions were given to participants to lay the foundation for Study 2 where there would be stricter participant recruitment criteria. Thus, the results from these questions were only analyzed for descriptive purposes. For the first question, “Have you personally had an experience of racial discrimination within the last year?”, 59 (36%) participants indicated “Yes,” 75 (45%) indicated “No,” and 31 (19%) indicated “I don’t know.” See Figure 4 for a visual depiction of this in the form of a pie chart. For the question, “Do you know anyone (friend or family) who have had an experience of racial discrimination within the last year?”, 95 (58%) participants answered “Yes,” 35 (21%) answered “No,” and 35 (21%) answered “I don’t know.” See Figure 5 for a visual depiction of this in the form of a pie chart. The third question was, “Do you remember hearing about an incidence of racial discrimination from the news or social media within the last year?”

Most participants responded “Yes” ($n = 150, 91\%$) with the remainder answering “No” ($n = 8, 5\%$) and “I don’t know” ($n = 7, 4\%$). See Figure 6 for a visual depiction of this in the form of a pie chart. For the question, “Do you know anyone (friend or family member) who have had an experience of racial discrimination during the COVID-19 pandemic?”, 64 (39%) participants answered “Yes,” 67 (41%) answered “No,” and 34 (21%) answered “I don’t know.” See Figure 7 for a visual depiction of this in the form of a pie chart. Lastly, when asked, “Do you remember hearing about an incidence of racial discrimination the news or social media during the COVID-19 pandemic?”, most participants indicated “Yes” ($n = 132, 80\%$) with 10 (6%) participants indicating “No” and 23 (14%) answering “I don’t know.” See Figure 8 for a visual depiction of this in the form of a pie chart. Figure 9 shows all percentage results for these five questions together.

An additional exploratory analysis was conducted to examine the amount of variance accounted for in participants’ scores of racial discrimination by the other psychological variables. Specifically, a multiple linear regression ($n = 157$) was conducted with the variables of learned helplessness, state depression, state anxiety, general self-efficacy, and avoidant coping predicting to racial discrimination. The results of the regression indicated that the overall model significantly accounted for 22.9% of the variance in racial discrimination, $R^2_{adj} = .229, F(1, 151) = 10.26, p < .001$. State depression was the only predictor that significantly predicted racial discrimination, $B = .16, p = .001, 95\% \text{ CI } [0.07, 0.26]$. See Table 3 for the full results.

Discussion

As expected, all hypothesized correlations replicate ones found in the literature. Notably, in previous research, Madubata et al. (2018) found that perceived racial discrimination was significantly correlated with learned helplessness feelings during the past month ($r = .34, p <$

.001) in a sample of Black Americans ($n = 172$). This relationship was shown in the present research with a more diverse sample of racialized people even though Madubata et al. (2018) used a past-month measure of learned helplessness (six-item Helplessness Domain from the Ten-Item Perceived Stress Scale; Cohen et al., 1983) whereas in the present research, learned helplessness was measured by a more global measure.

The exploratory multiple linear regression showed that although the overall model was significant at predicting racial discrimination, only state depression was a significant predictor when the variance from the other predictors was controlled for. This finding was unsurprising given the strong association between feelings of depression and racial discrimination (Brown et al., 2000; Hudson et al., 2016; Hwang & Goto, 2008; Litam & Oh, 2022; Noh et al., 1999; Santana et al., 2007; Wei et al., 2010; Whitbeck et al., 2002). As such, this indicates that there is a large amount of shared variance between the variables of state anxiety, avoidant coping, learned helplessness, and general self-efficacy. In other words, these variables do not explain any additional variance in racial discrimination beyond the variance explained by state depression.

Study 2: Moderated-Mediation Models

The purpose of Study 2 was to carry out two objectives. First, this study experimentally manipulated racial discrimination to determine effects on state depression, state anxiety, and learned helplessness. Second, this study investigated two moderated-mediation models with learned helplessness as a partial mediator, general self-efficacy as the moderator, racial discrimination as the independent variable, and state depression and state anxiety as the outcome variables (see Figure 10). All scales used in Study 2 were also ones used in Study 1.

Hypotheses

Study 2 has the following hypotheses to assess differences between conditions and to test the proposed moderated-mediation models:

Hypothesis 1: Learned helplessness will be significantly higher in the racial discrimination condition than in the control condition.

Hypothesis 2: State depression will be significantly higher in the racial discrimination condition than in the control condition.

Hypothesis 3: State anxiety will be significantly higher in the racial discrimination condition than in the control condition.

Hypothesis 4: Learned helplessness will partially mediate the relationship between racial discrimination and state depression such that racial discrimination will lead to higher learned helplessness which then leads to higher state depression.

Hypothesis 5: Learned helplessness will partially mediate the relationship between racial discrimination and state anxiety such that racial discrimination will lead to higher learned helplessness which then leads to higher state anxiety.

Hypothesis 6: For those higher on general self-efficacy, the effects of racial discrimination on state depression through learned helplessness will be weaker. Thus, a moderated mediation effect is predicted with general self-efficacy moderating the mediating effects of learned helplessness on state depression.

Hypothesis 7: For those higher on general self-efficacy, the effects of racial discrimination on state anxiety through learned helplessness will be weaker. Thus, a moderated mediation effect is predicted with general self-efficacy moderating the mediating effects of learned helplessness on state anxiety.

Method

Design

This study was conducted online through *Qualtrics*. The manipulated variable was racial discrimination, the dependent variables are state depression and state anxiety, the mediator variable was learned helplessness, and the moderator was general self-efficacy. This study was preregistered on the Open Science Framework (OSF) prior to data collection. The preregistration and cleaned data can be found here: <https://osf.io/n8vya/>.

Participants

Participants were recruited from York University's Undergraduate Research Participant Pool (URPP) and they were given 0.5 URPP credit for their participation. Data collection for this study occurred a bit concurrently with Study 1 starting in November 2023 to February 2024, with the restriction that participants could only participate in one of the two studies. Study inclusion depended on 1) identification as a racialized individual and 2) the ability to remember having had an experience of racial discrimination within the last year. These conditions were presented to participants in the study description on SONA Systems, prior to signing up for the study. These conditions were also shown at the start of the study to ensure that only participants who meet the criteria can continue. The targeted sample size for this study was determined by the maximum sample size feasible (MSSF; Beribisky et al., 2019) which is the number of participants who sign up for the study during the months of data collection.

Exclusion Criteria

Data collection yielded $N = 707$. In accordance with the study pre-registration on OSF, participants' data were removed if they indicated in the pre-screening that they were not racialized ($n = 45$) and could not remember an experience of past-year racial discrimination ($n = 311$). Further, participants' data were removed if they were deemed random responders as per the

Conscientious Responders Scale (CRS; Marjanovic et al., 2014; $n = 36$), completed the study on non-computer devices ($n = 101$), took shorter than 5 minutes ($n = 1$), took longer than one hour ($n = 14$), indicated on the demographics that they were solely white ($n = 0$) and if they indicated that they knew the true purpose of the study ($n = 0$). After data cleaning, the final sample size was $n = 206$. See Figure 11 for the data collection and exclusion procedure. Of the final sample size, 152 participants had complete responses to all measures and scale items, and the other 54 participants had up to 14 missing data points.

Demographics

In the final sample, there were 151 female participants (73%), 52 males (25%), and three who identified as another gender or chose not to answer (2%). Participants' mean age was 19.57 years ($SD = 3.21$) and ranged from 17 to 38 years. Participants ranged in self-identified race (See Figure 12). See Table 4 for age and gender by condition.

Procedure

Participants were provided a link to the study through the URPP. After providing their consent to participate, they were asked two pre-screening questions to ensure that firstly, they were racialized and secondly, were able to recall past-year racial discrimination that they have experienced. If these conditions were met, they were then randomly assigned to one of two conditions, the experimental condition, or the control condition. See Appendix B for the procedure.

Experimental Condition. In the experimental condition, participants were asked to recall an experience of racial discrimination they had within the last year (Racial Discrimination condition). They were given a textbox to write about this experience. See Appendix B.

Control Condition. In the control condition, participants were asked to recall a time when they have engaged in a leisurely activity within the last year. They were given a textbox to write about this experience. See Appendix B.

Materials

Manipulation Checks. There were three manipulation checks for both conditions. First, participants had to write about an experience that was asked of them in their assigned condition. Second, the Positive and Negative Affect Scale (PANAS; Watson et al., 1988) was administered which consists of a positive affect and a negative affect subscale. It was expected that those who were in the racial discrimination recall condition would score higher on the negative affect subscale and lower on the positive affect subscale than those in the control condition. This was the logical expectation as racialized participants who recall their past-year racial discrimination experience should feel more negative emotions (i.e., upset) than happy emotions (i.e., inspired). Third, “angry” feelings were measured as Cooper and colleagues (2014) found that participants who recalled racist and angry experiences reported similar scores of state anger. It was expected that those in the racial discrimination condition would score higher on the angry item than those in the control condition. This was the logical expectation as racialized participants who recall their past-year racial discrimination experience should feel more angry by the injustice of that experience. For both the PANAS (Watson et al., 1988) and the angry item, participants in both conditions were asked, “Using the scale below, please answer according to how you felt when you had the experience you just wrote about.” Both of these were on a five-point Likert scale (1 = “Very slightly or not at all” to 5 = “Extremely”). See Appendix B.

Learned Helplessness. Learned helplessness was measured using the Learned Helplessness Scale (LHS) (Quinless & Nelson, 1988). Instructions were, “Please use the scale

below to indicate how closely the statement describes you or your feelings about yourself.” An example item is, “I can find solutions to difficult problems.” In the final sample, $\alpha = .83$. See Appendix B.

General Self Efficacy. General self-efficacy was measured using the General Self-Efficacy Scale (Schwarzer & Jerusalem; 1995). Instructions were, “Indicate how true each of these statements is depending on how you feel about the situation by selecting the appropriate response.” A sample item is, “If someone opposes me, I can find means and ways to get what I want.” In the final sample, $\alpha = .87$. See Appendix B.

Racial Discrimination. The Discrimination Stress Scale (DSS; Flores et al., 2008) measured everyday experiences of racial discrimination. Instructions were, “Using the scale below, please answer according to how you sometimes may feel as a racialized person living in Canada.” An example item is, “How often is racism a problem in your life?” In the final sample, $\alpha = .90$. See Appendix B.

State Depression. State depression was measured using the Depression Subscale of the Shortened Profile of Mood States (POMS) Scale (Shacham, 1983). Instructions were tailored to each condition. Those in the racial discrimination condition were asked, “Using the scales below, please answer according to how you felt when you experienced racial discrimination within the last year.” Those in the control condition were asked, “Using the scales below, please answer according to how you felt when you engaged in a leisurely activity within the last year.” A sample item is “Worthless.” In the final sample, $\alpha = .95$. See Appendix B.

State Anxiety. The Anxiety subscale from the Shortened Profile of Mood States (POMS) Scale ($\alpha = .803$) (Shacham, 1983) will measure anxiety when participants experience racial discrimination. Instructions are tailored to each condition. Those in the racial discrimination

condition were asked, “Using the scales below, please answer according to how you felt when you experienced racial discrimination within the last year.” Those in the control condition were asked, “Using the scales below, please answer according to how you felt when you engaged in a leisurely activity within the last year.” An example of an item is “Uneasy.” In the final sample, $\alpha = .94$. See Appendix B.

Demographics. Participants’ gender, age, and racial group were assessed with the same questions and response options used in Study 1. See Appendix B.

Data Quality. Marjanovic et al.’s (2014) Conscientious Responders Scale (CRS) identified participants who responded randomly. The scale consists of 5 items that instruct people how to answer a particular question (e.g., “please answer this question by choosing number 1, ‘Strongly disagree’”). Responding incorrectly to more than two of the five items indicated a random response pattern and these individuals were excluded from statistical analyses. Participants were also excluded if they correctly identified the purpose of the experiment, identified as White, did not remember an experience of racial discrimination within the last year, did not complete the study on a computer, completed the questionnaire too quickly (less than 5 minutes), too slowly (more than 60 minutes), or not at all, and/or did not provide informed consent. See Appendix B.

Data Analysis Plan

For the manipulation checks, *t*-tests were conducted in *R* for the PANAS subscales (Watson et al., 1988), the POMS subscales (Shacham, 1983) and the angry item to assess differences between the racial discrimination and control conditions. In subsequent analyses, racial discrimination was dummy coded based on the two conditions (1 = racial discrimination, 0 = control). Data analyses for the hypotheses were conducted as follows:

Hypothesis 1: An independent samples *t*-test assessed differences between the racial discrimination and control conditions on learned helplessness.

Hypothesis 2: An independent samples *t*-test assessed differences between the two conditions on state depression.

Hypothesis 3: An independent samples *t*-test assessed differences between the two conditions on state anxiety.

Hypothesis 4: Process Macro Model 4 (Hayes, 2017) tested the proposed partial mediation of learned helplessness in the relationship of racial discrimination to state depression.

Hypothesis 5: Process Macro Model 4 (Hayes, 2017) tested the proposed partial mediation of learned helplessness in the relationship of racial discrimination to state anxiety.

Hypothesis 6: Process Macro Model 7 (Hayes, 2017) tested the proposed moderator of general self-efficacy in the partial mediation of learned helplessness in the relationship of racial discrimination to state depression.

Hypothesis 7: Process Macro Model 7 (Hayes, 2017) tested the proposed moderator of general self-efficacy in the partial mediation of learned helplessness in the relationship of racial discrimination to state anxiety.

Results

Manipulation Checks

Results of the manipulation checks were as expected. First, those in the experimental condition ($M = 2.72$, $SD = .88$) scored higher on the negative affect subscale from the PANAS compared to those in the control condition ($M = 1.69$, $SD = .70$), $t(204) = -9.12$, $p < .001$. Additionally, those in the experimental condition ($M = 1.82$, $SD = .54$) scored lower on the

positive affect subscale from the PANAS compared to those in the control condition ($M = 3.57$, $SD = .80$), $t(204) = 18.65$, $p < .001$. Lastly, those in the experimental condition ($M = 3.72$, $SD = 1.14$) scored higher on the angry item compared to those in the control condition ($M = 1.52$, $SD = .85$), $t(204) = -15.28$, $p < .001$.

Descriptive Statistics

Table 5 depicts the descriptive statistics. The correlation matrix for study variables is shown in Table 6. The correlation matrix conducted in *R* shows that the independent variable, racial discrimination, was significantly correlated with the outcome variables of state depression ($r(203) = 0.37$, $p < .001$) and state anxiety ($r(203) = 0.36$, $p < .001$), but not with the mediator variable of learned helplessness ($r(202) = 0.02$, $p = .74$) nor with the moderated variable of general self-efficacy ($r(204) = 0.11$, $p = .113$). Learned helplessness was also significantly negatively correlated with general self-efficacy ($r(202) = -0.71$, $p < .001$).

Confirmatory Analyses

T-Test Hypotheses. For the hypotheses concerning significant differences between the experimental and control conditions, all but one was significant as predicted through independent samples *t*-tests. The first hypothesis was not supported: those in the experimental condition ($M = 2.29$, $SD = .33$) did not significantly differ from those in the control condition ($M = 2.31$, $SD = .40$) on learned helplessness, $t(202) = 0.422$, $p = 0.67$. See Figure 13. The second hypothesis was supported since those in the experimental condition ($M = 2.76$, $SD = 1.19$) scored significantly higher on state depression than those in the control condition ($M = 1.66$, $SD = .92$), $t(203) = -7.20$, $p < .001$. See Figure 14. The third hypothesis was also significant as predicted, with higher scores on state anxiety amongst those in the experimental condition ($M = 3.06$, $SD = 1.17$)

compared to those in the control condition ($M = 2.05$, $SD = 1.02$), $t(203) = -6.46$, $p < .001$. See Figure 15. See Table 7 for an overview.

Mediation Hypotheses. For Hypotheses four to seven, the racial discrimination variable in the proposed model (Figure 10) was dummy coded as 0 = control condition, 1 = experimental condition. Hypotheses four and five predicted a partial mediation of learned helplessness in the relationship between racial discrimination to state depression and state anxiety, respectively. Specifically, the independent variable was Racial Discrimination, mediator variable was learned helplessness, and dependent variables were state depression and state anxiety. See Table 7 for the full correlation matrix between study variables. Bootstrapping analyses using Process Macro Model 4 by Hayes (2017) in *R* was used to conduct the mediation analyses with $N = 203$ (3 participants excluded due to missing responses). Contrary to the hypotheses, there were no significant indirect effects from racial discrimination to state depression nor state anxiety through learned helplessness. Specifically, the results indicated no indirect effect of racial discrimination to state depression through learned helplessness, $B = -0.02$, 95% CI [-0.10, 0.05]. The results also indicated no indirect effect of racial discrimination to state anxiety through learned helplessness, $B = 0.01$, 95% CI [-0.08, 0.04]. However, the direct pathways from racial discrimination to state depression ($B = 1.11$, $p < .001$) and state anxiety ($B = 1.01$, $p < .001$) were significant. The paths from learned helplessness to state depression ($B = 0.65$, $p = .002$) and learned helplessness to state anxiety ($B = 0.61$, $p = .004$) were significant as well. Thus, hypotheses four and five were not supported as there is no indication of partial mediation. See Figure 16 for all pathways in the model.

Moderated-Mediation Hypotheses. Hypotheses six and seven built on hypotheses four and five, with the addition of general self-efficacy as the moderator. Specifically, it was

hypothesized that general self-efficacy would interact with racial discrimination, such that higher general self-efficacy would predict lower learned helplessness, which then predicts lower feelings of depression and anxiety. Bootstrapping analyses using Process Macro Model 7 by Hayes (2017) in *R* was used to analyze these moderated-mediated hypotheses with $N = 203$ (3 participants excluded due to missing responses). The results showed that the interaction between racial discrimination and general self-efficacy was non-significant, $B = 0.12$, $p = .08$.

Additionally, results showed no indication of moderated-mediated effects for both state depression ($B = 0.08$, 95% CI [-0.11, 0.26]) and state anxiety ($B = 0.07$, 95% CI [-0.01, 0.23]).

Thus, hypotheses six and seven were not supported as there is no indication of moderated-mediation in the proposed model. See Figure 17 for all pathways in the model. Additionally, the simple slopes graph for moderated-mediation shows no significant interaction (Figure 18).

Exploratory Analyses of the Moderated-Mediated Model with Study 1 Data

For exploratory purposes, the proposed model for Study 2 (Figure 10) was fit onto the data from Study 1 with a sample of 158 participants using bootstrapping and the Process Macro by Hayes (2017) in *R*. Specifically, learned helplessness was the mediator, racial discrimination as measured by the Discrimination Stress Scale (DSS; Flores et al., 2008) was the independent variable, general self-efficacy was the moderator, and the outcome variables were feelings of depression and anxiety. The mediation results using Process Macro Model 4 (Hayes, 2017) showed that learned helplessness partially mediated the relationship between racial discrimination and state depression, $B = 0.145$, 95% CI [0.02, 0.32] (Figure 19), but not between racial discrimination and state anxiety. Further, the moderated-mediation results using Process Macro Model 7 (Hayes, 2017) showed that general self-efficacy moderated the indirect effect

through learned helplessness, $B = 0.281$, 95% CI [0.02, 0.56]. See Figure 20 for a visual depiction.

Since the proposed theoretical model put forth here was partially supported by Study 1 data with state depression as the outcome, it was notably previously tested with Study 2 data. Nevertheless, while the model was partly supported in Study 1, it was not supported in Study 2. One possible explanation for the inconsistent support of the proposed model (Figure 10) between the Study 1 and Study 2 datasets, is that even though in both studies data collection occurred at around the same time, the pre-screening criteria differed between the two studies. In particular, while both studies required participants to self-identify as racialized, Study 2 had an *additional* pre-screening criterion, which was that participants had to recall an incident of past-year racial discrimination. Further, in Study 2, learned helplessness did not partially (nor fully) mediate racial discrimination on feelings of depression or anxiety and consequently, general self-efficacy did not moderate this indirect effect. However, as detailed in the above paragraph, in Study 1, learned helplessness did partially mediate racial discrimination on state depression but not state anxiety, and general self-efficacy did moderate the indirect effect from racial discrimination to state depression through learned helplessness. Thus, given that the proposed moderated-mediation model was partly supported with Study 1 data, the following paragraph details further exploratory analyses that were conducted to determine *why* the model is partly supported with Study 1 data, but not Study 2 data, as was hypothesized initially.

To determine why the proposed moderated-mediation model with state depression as the outcome variable was partly supported with Study 1 data (detailed in the above paragraph), two more exploratory analyses were conducted. Participants in Study 1 were asked to answer five additional questions regarding whether they could recall their own experiences of racial

discrimination, their friend's and family's experiences of racial discrimination, if they could recall hearing and seeing racial discrimination incidences on the news or social media, and whether such incidents occurred since the COVID-19 pandemic. One of these additional questions was, "Have you personally had an experience of racial discrimination within the last year?" to which 59 participants responded yes, 75 responded no, and 31 responded they were not sure. The first exploratory analysis here was conducted amongst the 75 participants who answered yes to this question. Specifically, using Process Macro Models 4 and 5 (Hayes, 2017) in *R*, the proposed moderated-mediation model tested here had racial discrimination (as measured by the DSS; Flores et al., 2008) as the independent variable, learned helplessness as the mediator, general self-efficacy as the moderator, and state depression as the outcome variable. This was tested with the participants who indicated that they could remember past-year racial discrimination ($n = 59$) and the results from this analysis was nonsignificant. In other words, amongst the participants in Study 1 that recalled a past-year racial discrimination, learned helplessness did not explain why their perceived feelings of racial discrimination predicted their feelings of depression and consequently, their general self-efficacy did not function as a moderator. However, when this same moderated-mediated model was tested amongst Study 1 participants who indicated that they could not remember past-year racial discrimination ($n = 70$; five participants were dropped from analyses due to incomplete responses), the model was supported. Specifically, there was a partial mediation of racial discrimination to state depression through learned helplessness, $B = 0.083$, 95% CI [0.02, 0.18] (Figure 21) and there was a moderated effect of general self-efficacy on the indirect effect, $B = 0.242$, 95% CI [0.02, 0.58], (Figure 22). Therefore, amongst the participants who could not recall past-year racial

discrimination, learned helplessness partly explained why their perceived racial discrimination predicted feelings of depression, and general self-efficacy moderated this effect.

Thus, with 2 sets of data, including participants in Study 2 who recalled past-year racial discrimination ($n = 203$) and a subset of Study 1 participants who indicated that they could recall past-year racial discrimination ($n = 59$), the proposed moderated-mediation model was not supported. However, when state depression was the outcome in Study 1, the model was supported among those who indicated they could *not* recall past-year racial discrimination. Therefore, learned helplessness functioned as a mediator of state depression when participants could not recall an experience of racial discrimination. One reason for these results could be related to the defense mechanism of repression which is the subconscious blocking of unpleasant emotions, impulses, memories, and thoughts from the conscious mind (Freud, 1915). While repression may help to shield the person from distress, it is associated with psychological distress later. These individuals may have experienced learned helplessness when they experienced racial discrimination, and this may have been the reason they repressed the experience entirely. Future empirical research could further address these questions.

Discussion

The first hypothesis of significant differences between the experimental and control conditions on learned helplessness was not supported by the data which was quite surprising given that racial discrimination is often not an experience that can be controlled (i.e., a racialized person cannot control when and how others are racially discriminatory towards them) and learned helplessness has also been described as uncontrollable (Broman et al., 2000; Christophe et al., 2019; Maxie-Moreman & Tynes, 2022; Seligman, 1975; Williams et al., 2018). Thus, it was logical to predict that participants who recalled an experience of racial discrimination may

have correspondingly higher feelings of learned helplessness, and that participants who recalled engaging in a leisurely activity may have lower feelings of learned helplessness as thinking about something that is leisurely should not cause negative feelings. However, the results show no significant difference between the conditions on learned helplessness which may speak to a measurement issue. Indeed, in past research showing that learned helplessness partially mediates racial discrimination on past-week feelings of depression in a sample of African American participants, Madubata and colleagues (2018) used a different measure of learned helplessness than the one selected in this research. Specifically, they used the six-item Helplessness Domain from the Ten-Item Perceived Stress Scale (PSS; Cohen et al., 1983), which measured learned helplessness feelings over the last month (i.e., “How often have you felt that you were unable to control the important things in your life?”) whereas this study used the Learned Helplessness Scale (LHS; Quinless & Nelson, 1988) which was a more global measure of learned helplessness (i.e., “I have the ability to solve most of life’s problems”). To be clear, the reliability of these measures is acceptable as the PSS in Madubata and colleagues’ sample was .86 and the one in this study was .83 with the LHS. It may be that LHS was too general and was not specific to the participants’ recall of racial discrimination or engaging in a leisurely activity. This issue could be pursued in future research.

From the seven hypotheses investigated in this study, only two were supported. These were hypotheses two and three which concerned significant differences between the experimental and control conditions on state depression and state anxiety, respectively. Specifically, the results showed that there were significant differences between the conditions on feelings of depression and anxiety, with those who recalled past-year racial discrimination scoring higher on both these outcomes than those who recalled engaging in a leisurely activity. It

should also be pointed out that these differences occurred when the participants recalled the events in each condition. For example, in the experimental condition, participants were asked to answer according to how they felt when they experienced racial discrimination within the last year. In the control condition, participants were instructed to respond according to how they felt when they engaged in a leisurely activity within the last year. Needless to say, experiences of racial discrimination are negatively perceived (Jackson et al., 2012), such that racialized participants may cry when thinking about these experiences that happened years ago and may find thinking about them as recalling past racial trauma (Lowe et al., 2012). Moreover, extant literature shows that racial discrimination is positively correlated with depressive feelings (Brown et al., 2000; Hudson et al., 2016; Hwang & Goto, 2008; Litam & Oh, 2022; Noh et al., 1999; Wei et al., 2010; Whitbeck et al., 2002) and feelings of anxiety (Hwang & Goto, 2008; Ong et al., 2009). Therefore, it was quite predictable that that these two hypotheses were supported.

Hypotheses four and five, which predicted partial mediation of learned helplessness in the relationship between racial discrimination to feelings of depression and anxiety, respectively, were not supported. It was particularly surprising that learned helplessness did not significantly partially mediate racial discrimination on state depression in this study's sample of 206 racialized participants, as Madubata and colleagues (2018) found support for this exact partial mediation with their sample of 172 African American participants using different measures. As the paragraph above details, it may be the different measures used in this study that resulted in the lack of replication of Madubata and colleague's (2018) findings.

Lastly, hypotheses six and seven, which were built on hypotheses four and five predicting that general self-efficacy would moderate the indirect pathways of racial discrimination to state

depression and state anxiety, respectively, was non-significant. It was not surprising that these hypotheses were not supported given that hypotheses four and five were not. Specifically, hypothesis six stated, for those higher on general self-efficacy, the effects of racial discrimination on state depression through learned helplessness will be weaker. Thus, a moderated mediation effect is predicted with general self-efficacy moderating the mediating effects of learned helplessness on state depression. Hypothesis seven stated that for those higher on general self-efficacy, the effects of racial discrimination on state anxiety through learned helplessness will be weaker. Thus, a moderated mediation effect is predicted with general self-efficacy moderating the mediating effects of learned helplessness on state anxiety. The results showed that the proposed moderator of general self-efficacy interacting with racial discrimination to predict learned helplessness and consequently, feelings of depression and anxiety was not supported in the data. This could be due to measurement issues that were discussed previously, but it could also be due to how general self-efficacy may be unrelated to instances of racial discrimination. For example, a participant may believe that they have the resources to handle day-to-day difficult situations, and thus have high general self-efficacy, but since racial discrimination occurs unexpectedly and uncontrollably, they may feel that their general self-efficacy has no role in situations where they experience racial discrimination. More specifically, racial discrimination usually occurs between two people, where one person enacts racial discrimination on someone else. As such, general self-efficacy may be irrelevant in these interpersonal relationships where someone else's actions are uncontrollable. This would then render general self-efficacy unrelated to racial discrimination. Further, general self-efficacy is an individual-level trait, whereas racial discrimination is tied to societal structures (i.e., racist educational policies, police brutality, etc.).

This also may be another reason that general self-efficacy may be unrelated to racial discrimination amongst study participants.

Limitations

The limitations to this experimental design concern the manipulation of racial discrimination and demand characteristics. First, due to the development of this study under time and financial constraints, a recall method was chosen as the manipulation method for racial discrimination which may not have been the best manipulation method. Specifically, participants had to write about these experiences, with some participants writing more than others. There were also no directions given to participants in typing out these responses, such as to detail their feelings, whether they were with others, or how it affects them today. There was also a past-year timeframe imposed on these experiences to limit memory bias and since past-year racial discrimination is more consequential on one's health compared to lifetime occurrences (Carter et al., 2019). However, this timeframe restricted the participant pool as likely, not all racialized participants can recall personally experiencing racial discrimination within the last year. In fact, this was supported in Study 1 data where only 36% of participants were able to recall past-year racial discrimination and this number is likely to be higher if racialized participants were asked, "Are you able to recall experiencing racial discrimination sometime in your lifetime?" More importantly, this imposed timeframe may be unjustified as racial discrimination that occurred outside of the past-year timeframe are still valid experiences even though they may be subjected to more memory biases (i.e., erroneous memory). As Hardt and Rutter (2004) state, even though there is some evidence of bias in retrospective recall of aversive experiences (i.e., racial discrimination), this bias is not sufficient as a reason to invalidate these aversive experiences. Thus, this study could have used a recall method without any timeframe restrictions.

Another issue with the manipulation is the overall method which is just one of the few that exist for manipulating racial discrimination. For example, *Cyberball*, an online game, has been previously used to experimentally manipulate racial discrimination. These games, which feature ball throwing between players, are supposed to mimic racial discrimination with some racialized participants successfully coming to the conclusion that they were excluded from the ball tossing due to their race (Calixte-Civil & Brandon, 2021). However, this manipulation method is limited due to the inconsistency of racialized participants coming to this conclusion and due to the online nature of the game, there may be weaker feelings and cognitions as a result of the experimental racial discrimination (Calixte-Civil & Brandon, 2021). Moreover, *Cyberball* also induces feelings of not belonging in addition to feeling racially discriminated (Gerrard et al., 2012).

Another limitation of this study has to do with demand characteristics as the prompt given to participants at the start of the study (after the consent form; Appendix B) might have alluded participants as to what the study entails. Specifically, this prompt tells participants,

The purpose of this study is to investigate racialized people's experiences of racial discrimination within the last year. So, in order to participate in this study, you must be a racialized person, and you must remember an experience of racial discrimination within the last year.

Following this, qualifying participants were randomly assigned to one of the two conditions, the Racial Discrimination condition, or the Control condition. There may have been an issue for those in the Control condition as right after this prompt, participants in this condition are asked if they have engaged in a leisurely activity within the last year (the randomized condition). Specifically, this question may have greatly juxtaposed the study prompt, and participants may

be left wondering when they were going to get asked about their past-year experiences of racial discrimination. Moreover, regardless of the condition that participants were placed in, they may have answered the measures according to what was expected of them based on their condition. For example, those in the Racial Discrimination condition might have indicated higher feelings of depression on the state depression scale, as the instructions for this scale were to answer according to how they felt when they experienced racial discrimination within the last year. Likewise, those in the Control condition might also have answered according to what was expected of them as they were asked to answer the state depression scale according to how they felt when they engaged in a leisurely activity within the last year. More importantly, both conditions responded to the Discrimination Stress Scale (Flores et al., 2008) which measures perceived racial discrimination and participants in both conditions may have indicated higher scores on this measure as a result of knowing that the study was about racial discrimination from the prompt given at the start. In other words, the experimental manipulation may not have been as effective due to demand characteristics.

General Discussion

This program of research sought to develop a deeper understanding of the psychological factors associated with racial discrimination. Study 1 sought to replicate existing relationships commonly found in the literature and Study 2 sought to investigate a moderated-mediation model to understand why and how racial discrimination causes feelings of depression and anxiety.

In the first study, findings replicated previously reported correlations between racial discrimination, state depression, state anxiety, and avoidant coping. Other correlational hypotheses include learned helplessness with state depression, avoidant coping with state

depression, and lastly, general self-efficacy with state depression and learned helplessness. As this study provided some preliminary understanding of these variables, it served as a foundation for the development of Study 2 which had the same variables of interest.

Additionally, Study 2 sought to experimentally investigate a moderated-mediation model. This was an approach that combined both an experimental manipulation and a moderated-mediation model, where the experimental manipulation conditions represented the independent variable in the model. Further, learned helplessness was previously found as a mediator in the relationship between racial discrimination and past-week depression (Madubata et al., 2018), yet scant research has investigated mediators in the relationship between racial discrimination and anxiety. Thus, this study particularly had implications for the understanding of why and how racial discrimination causes state depression and state anxiety, although, the proposed moderated-mediation model was not supported. However, this study presented a few interesting findings.

First, the experimental manipulation was successful as indicated by the manipulation checks, but there were no differences on learned helplessness between those who recalled past-year racial discrimination and those who recalled engagement in a leisurely activity which was surprising. There were, however, significant differences between these conditions on state depression and state anxiety, with those who recalled past-year racial discrimination indicating higher feelings of depression and anxiety relative to the control condition. These results were particularly expected. Further, the proposal of a moderated-mediation model was not supported with this data, as there was no indication of partial mediation of racial discrimination to feelings of depression and anxiety through learned helplessness nor was there any indication of general-self-efficacy moderating the effect of racial discrimination on learned helplessness. Again, this

could be due to measurement differences in the learned helplessness measure used in this study as it was a global measure and was not specific to the learned helplessness participants may feel when they experience racial discrimination.

Strengths, Limitations and Future Directions

A strength of this research is the quantitative approach taken to investigate the role of psychological factors in racial discrimination. Namely, a moderated-mediation model was theorized based on relationships and a simple mediation model by Madubata et al. (2018) seen in previous literature. Through this approach and potentially future research, a further understanding of why racial discrimination leads to feelings of depression and anxiety could be investigated as it is important to address how individuals cope with racial discrimination in order to preserve their mental health. Coping strategies, provision of social support, and community support are all factors which could be incorporated in future research on the psychological effects of racial discrimination. By reframing racial discrimination from a health perspective, we may access ways in which its effects can be diminished so that individuals' health can be maintained.

As discussed above, one limitation of this research is the learned helplessness measure which may have been too general and broad, thus, unrelated to participants' feelings of racial discrimination. Moreover, this research was unable to disaggregate the results based on the participants' race, which was limited by the small sample sizes, although, a large portion of participants identified as South Asian (Figures 2 and 12). Another limitation as discussed above was that participants who were able to recall past-year racial discrimination had unrelated feelings of learned helplessness. This was shown with Study 2's full data set ($N = 203$) through the mediation and moderated-mediation analyses (Figures 16 and 17) as well as with the

exploratory subset of Study 1 participants who could recall past-year racial discrimination ($n = 59$). Conversely, the proposed model with state depression as the outcome was supported amongst the Study 1 participants who could not recall past-year racial discrimination ($n = 70$; Figures 21 and 22). Future replications could address whether the proposed moderated-mediation model (Figure 10) is supported amongst a larger sample of racialized participants who could not recall past-year racial discrimination. Future research could also directly replicate the research presented here, with a learned helplessness measure that is specific to the experience of racial discrimination. It may also be worthwhile to investigate other mediators of racial discrimination to feelings of depression and anxiety, such as internalized racism, the acceptance of the negative stereotype about an individual's own racial group, which was previously found as a partial mediator in the relationship between racial discrimination and depressive symptoms in a sample of African American women (Carr et al., 2014).

A limitation also lies in the varying effects across genders, racialized groups, and cultural factors in both studies. Unfortunately, disaggregated analyses for these varying effects could not have been conducted due to the limitations with sample size. For example, both studies had about triple the amount of female to male participants, and there were a limited number of other participants who identified as binary or another gender. Thus, gender differences could not have been explored due to the small samples of male and non-binary or other gendered participants. Moreover, there were a larger percentage of South Asian participants in both studies compared to the other races so racial differences could not have been analyzed. Lastly, participants' cultural background and other cultural factors was not collected in the demographic questions although, these would have been important factors in understanding the participants.

Regardless of the inability to explore effects across genders, racialized groups, and cultural factors, some speculative arguments could be made. For instance, there could be differences between male and female participants in the present research on state depression and state anxiety as previous longitudinal research found that Black male youth who had an increase in perceived racial discrimination in their early twenty's was predicted to have higher feelings of depression and anxiety up to age 32, yet for Black female youth, changes in perceived racial discrimination does not predict future changes in their feelings of depression or anxiety (Assari et al., 2017). There may also be racial discrimination differences between racialized groups, as previous research found that African Americans and Afro-Caribbeans report higher rates of perceived everyday racial discrimination compared to Asian Americans and Latinx Americans (Gong et al., 2017). Lastly, cultural differences are important considerations for how racialized people are affected by racial discrimination (Carter et al., 2019) since, for example, horizontal individualism (valuing individuality with an emphasis on self-reliance and equality rather than competition) among British Caribbean Americans predicted lower perceptions of racial discrimination, yet horizontal individualism does not predict African Americans' perceptions of racial discrimination (Hunter, 2008). In other words, it is likely that in the present research, some effects (i.e., scores on the racial discrimination measure) may differ depending on the cultural factors (i.e., individualism) endorsed by participants, however, no cultural factors were measured. Future research could easily address this limitation.

Conclusion

The present series of research offers a deeper understanding of the psychological factors associated with racial discrimination through two distinct studies. Study 1 showed relationships between variables and Study 2 utilized an experimental paradigm in conjunction with a

moderated-mediated model to investigate why racial discrimination causes feelings of depression and anxiety through the mediator of learned helplessness and the moderator of general self-efficacy. Ultimately, the investigation of a mediator and moderator in the relationship between racial discrimination to state depression and state anxiety was futile as pre-registered hypotheses were not supported. However, exploratory analyses revealed that the proposed moderated-mediation model was somewhat supported with data from Study 1.

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Tables

Table 1. *Study 1 Descriptive Statistics and Psychometric Properties of Study Variables*

	<i>M</i>	<i>SD</i>	Min	Max	Range	Cronbach's α
Learned Helplessness	2.33	0.36	1.35	3.30	20-80	0.84
Racial Discrimination	1.89	0.50	1.00	3.21	0-56	0.90
State Depression	2.61	1.15	1.00	5.00	0-40	0.95
State Anxiety	2.92	1.19	1.00	5.00	0-30	0.94
General Self-Efficacy	2.81	0.47	1.30	4.00	10-40	0.85
Avoidant Coping	2.35	0.40	1.36	3.00	11-33	0.79

Note. Min and max values are for the score means. Range values are for total scores for each measure before averages were computed.

Table 2. *Study 1 Correlation Matrix (Pearson's R)*

	1.	2.	3.	4.	5.	6.
1. Learned Helplessness	--					
2. Racial Discrimination	0.18*	--				
3. State Depression	0.41***	0.48***	--			
4. State Anxiety	0.27***	0.43***	0.77***	--		
5. General Self-Efficacy	-0.63***	-0.08	-0.34***	-0.31***	--	
6. Avoidant Coping	0.41***	0.23**	0.38***	0.35***	-0.23**	--

Note. Sample sizes are not consistent per cell due to some incomplete responses. Sample sizes ranged from 157 to 165.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 3. *Study 1 Exploratory Regression Predicting to Racial Discrimination*

Variable	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	95% CI
Constant	.53	.54	.99	.324	[-0.53, 1.59]
Learned Helplessness	.07	.14	.58	.563	[-0.19, 0.35]
State Depression	.16	.05	3.35	.001	[0.07, 0.26]
State Anxiety	.05	.04	1.11	.270	[-0.04, 0.14]
General Self-Efficacy	.15	.09	1.49	.139	[-0.05, 0.34]
Avoidant Coping	.10	.10	.98	.328	[-0.10, 0.29]

Note. $N = 157$ (8 observations deleted due to missingness). Coefficients and standard errors are unstandardized.

Table 4. *Study 2 Demographic Characteristics by Condition*

	Racial Discrimination Condition (<i>n</i> = 117)	Control Condition (<i>n</i> = 89)	Total Sample (<i>n</i> = 206)
<i>Age</i>			
<i>M</i>	19.73	19.36	19.57
<i>SD</i>	3.33	3.07	3.21
Range	17-38	17-36	17-38
<i>Gender, n (%)</i>			
Female	87 (74.36)	64 (71.91)	151 (73.30)
Male	28 (23.93)	24 (20.51)	52 (25.24)
Other	2 (1.71)	1 (1.12)	3 (1.46)

Note. Gender = “Other” includes participants who self-identify as non-binary and those who chose not to answer this question.

Table 5. *Study 2 Descriptive Statistics and Psychometric Properties of Study Variables*

	<i>M</i>	<i>SD</i>	Min	Max	Range	Cronbach's α
Learned Helplessness	2.30	0.36	1.20	3.45	20-80	0.83
Racial Discrimination	2.01	0.51	1.00	3.71	0-56	0.90
State Depression	2.29	1.21	1.00	5.00	0-40	0.95
State Anxiety	2.63	1.22	1.00	5.00	0-30	0.94
General Self-Efficacy	2.90	0.50	1.00	3.50	10-40	0.87

Note. Min and max values are for the score means. Range values are for total scores for each measure before averages were computed.

Table 6. *Study 2 Correlation Matrix*

	1.	2.	3.	4.	5.	6.
1. Learned Helplessness	--					
2. Racial Discrimination	0.02	--				
3. State Depression	0.18*	0.37***	--			
4. State Anxiety	0.17*	0.36***	0.78***	--		
5. General Self-Efficacy	-0.71***	0.11	0.00	-0.03	--	
6. Condition (1 = racial discrimination, 0 = control)	-0.03	0.16*	0.45***	0.41***	0.10	--

Note. Sample sizes are not consistent per cell due to some incomplete responses. Sample sizes ranged from 204 to 206.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 7. Study 2 Means, Standard Deviations, and T-Test Statistics for Hypotheses 1 to 3

Dependent Variable	Control Condition	Experimental Condition	<i>t</i>	<i>df</i>	<i>p</i>
	<i>M (SD)</i>	<i>M (SD)</i>			
Learned Helplessness	2.32 (0.40)	2.29 (0.33)	0.42	202	.670
State Depression	1.66 (0.92)	2.76 (1.19)	-7.20	203	< .001
State Anxiety	2.05 (1.02)	3.06 (1.17)	-6.46	203	< .001

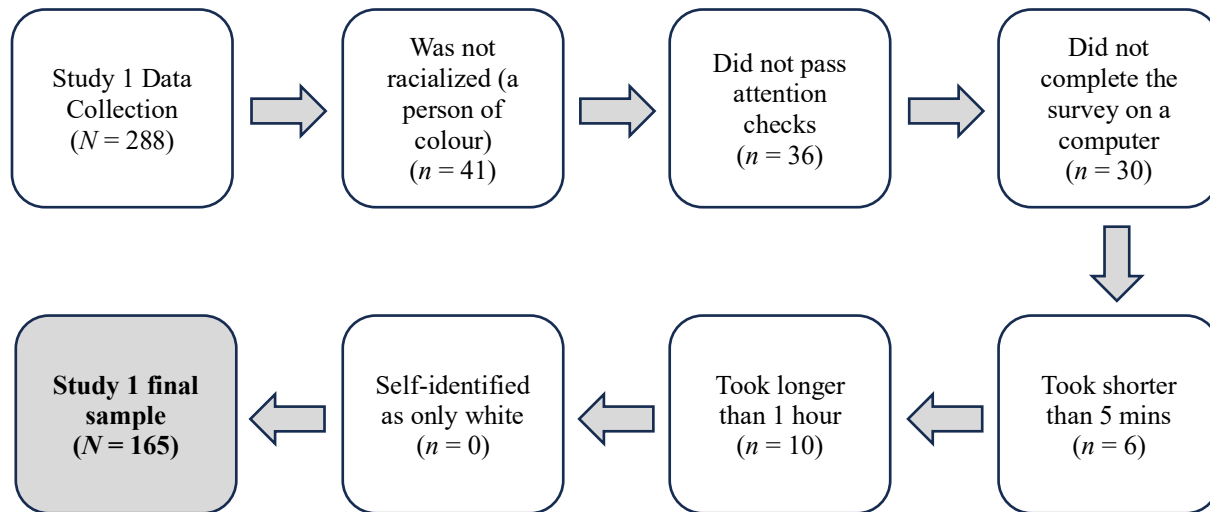
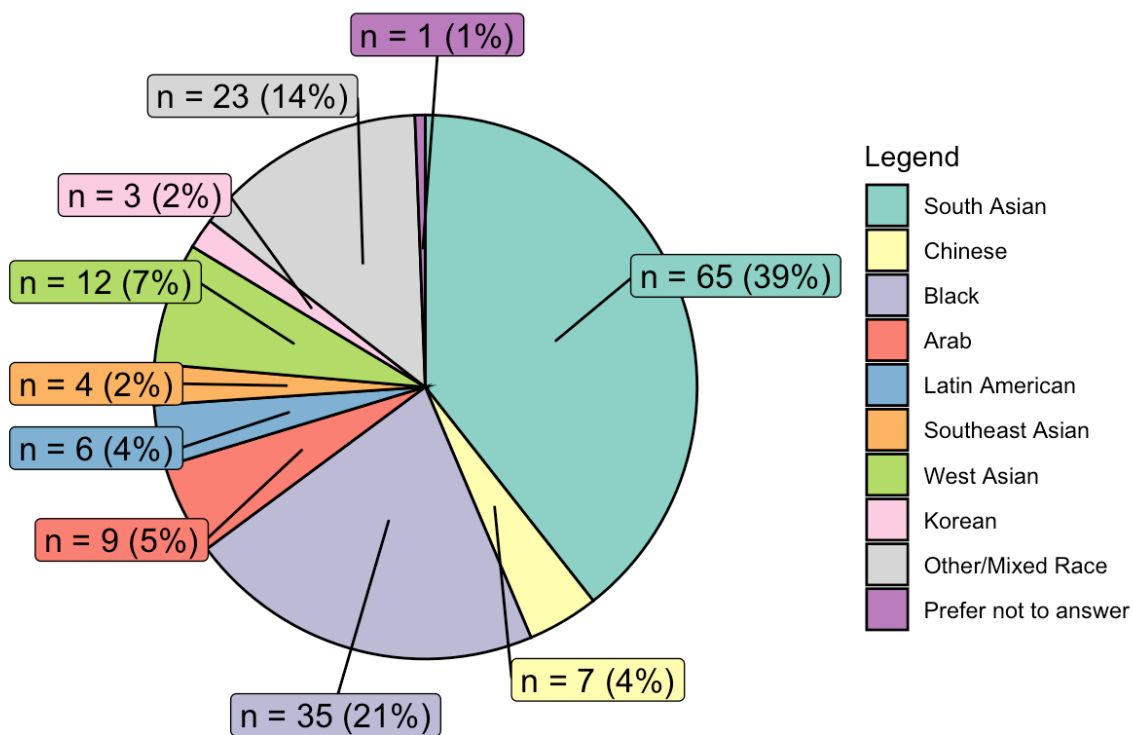
Figure 1. *Study 1 Data Collection and Exclusion Procedure*

Figure 2. *Self-Identified Race of Participants in Study 1*



Note. No participants indicated that they were solely white, Indigenous, Filipino, or Japanese.

Mixed race participants were included in the “Other/Mixed Race” category.

Figure 4. *Additional Question 1: “Have You Personally Had an Experience of Racial Discrimination Within the Last Year?”*

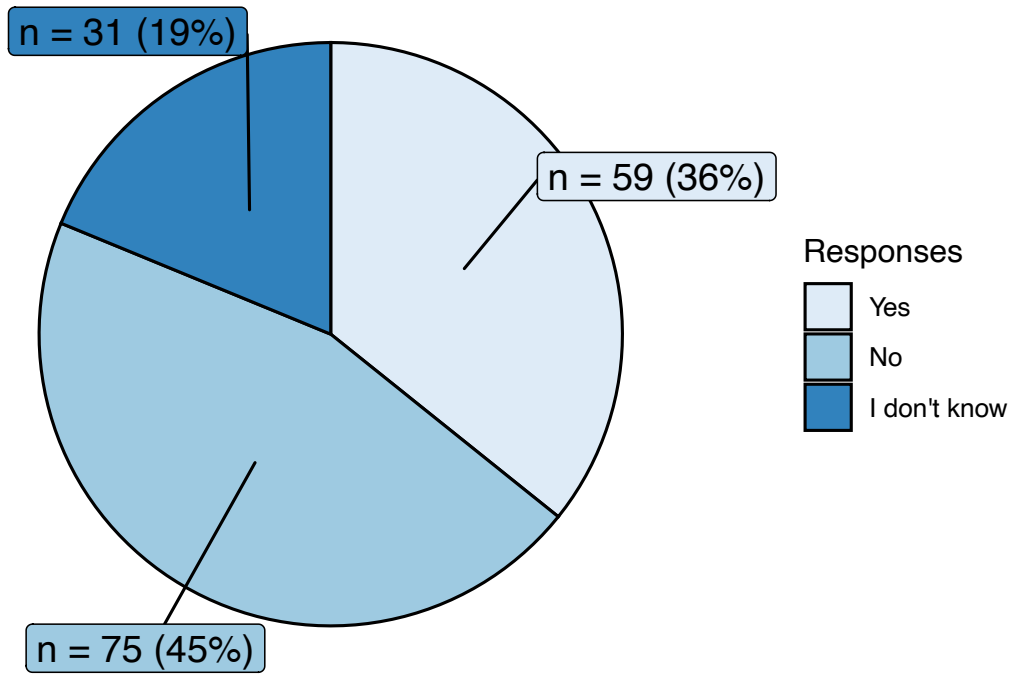


Figure 5. *Additional Question 3: "Do You Know Anyone (Friend or Family) Who Have Had an Experience of Racial Discrimination Within the Last Year?"*

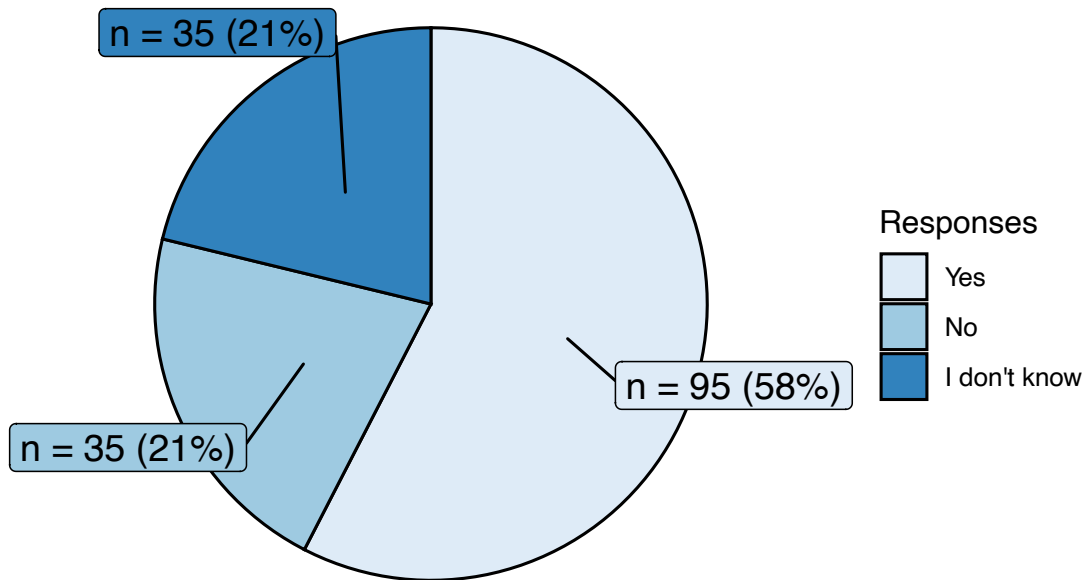


Figure 6. *Additional Question 3: “Do You Remember Hearing About an Incidence of Racial Discrimination from the News or Social Media Within the Last Year?”*

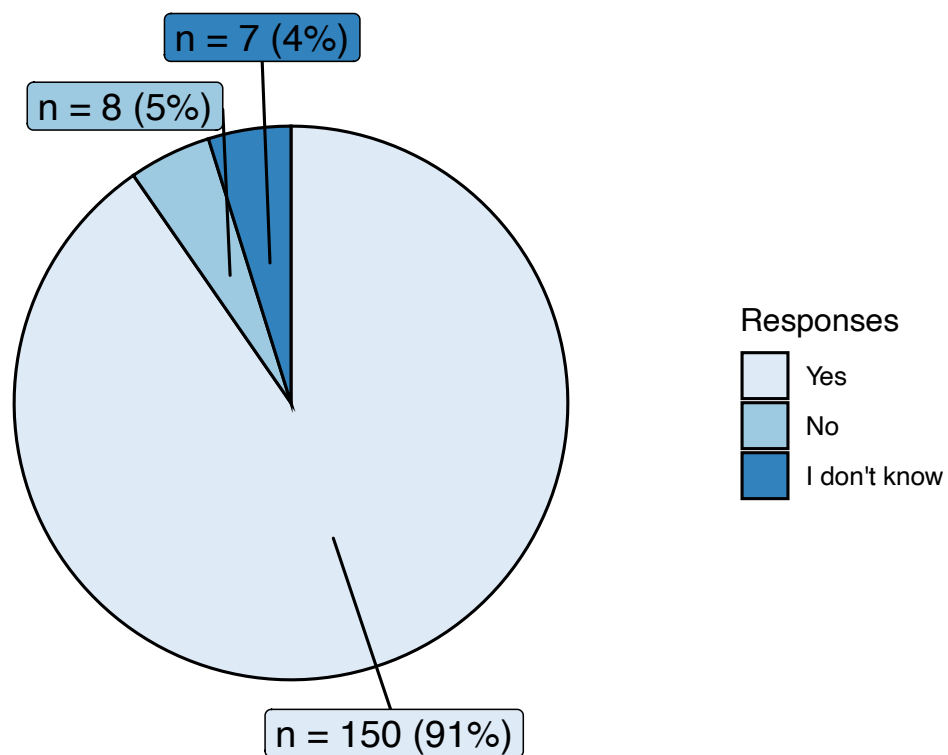


Figure 7. *Additional Question 4: “Do You Know Anyone (Friend or Family Member) Who Have Had an Experience of Racial Discrimination During the COVID-19 Pandemic?”*

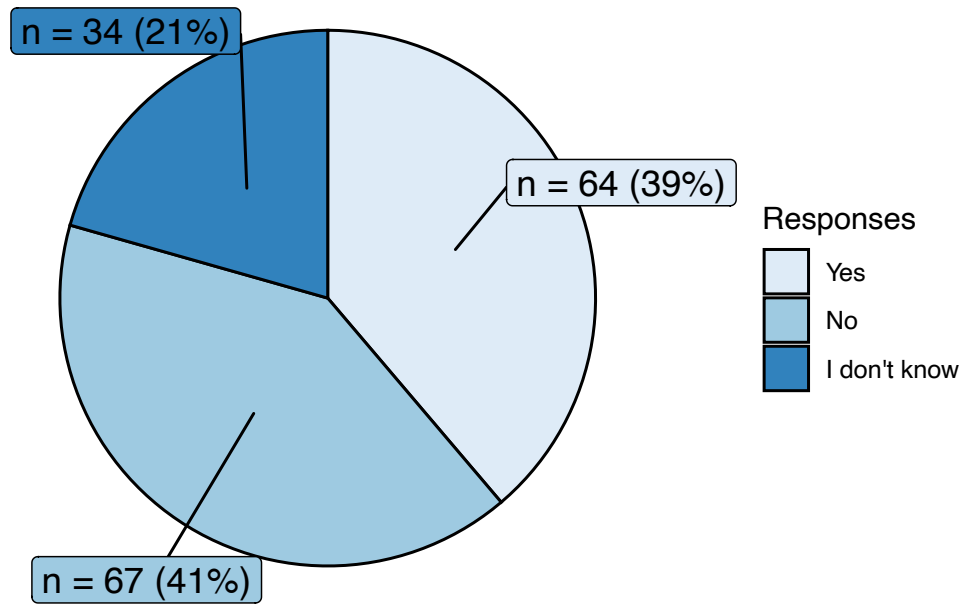


Figure 8. *Additional Question 5: “Do You Remember Hearing About an Incidence of Racial Discrimination in the News or Social Media During the COVID-19 Pandemic?”*

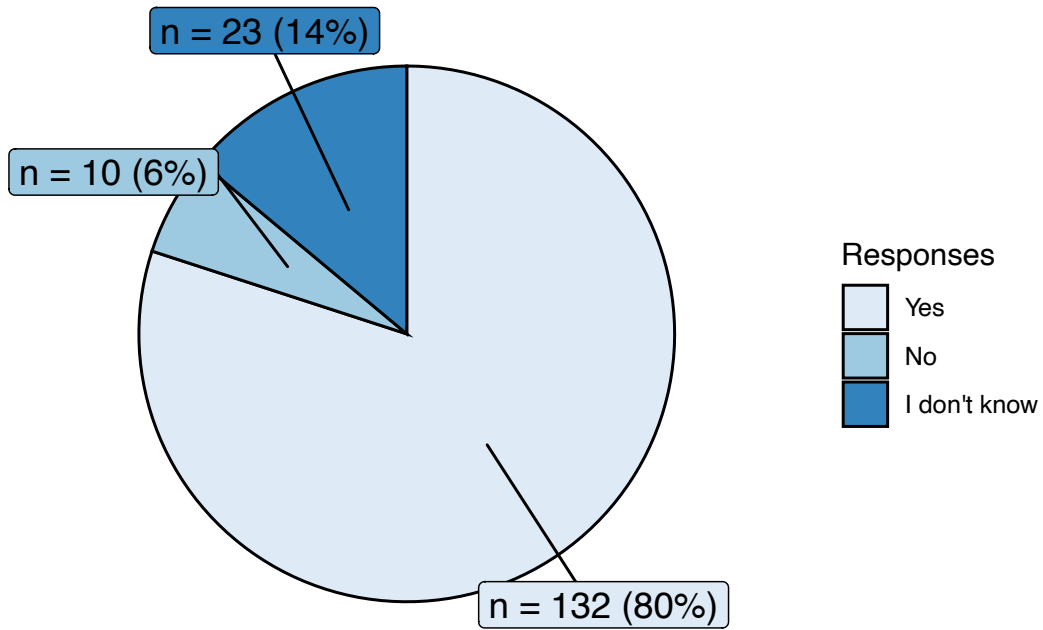


Figure 9. Summary of Additional Questions Asked to Participants in Study 1

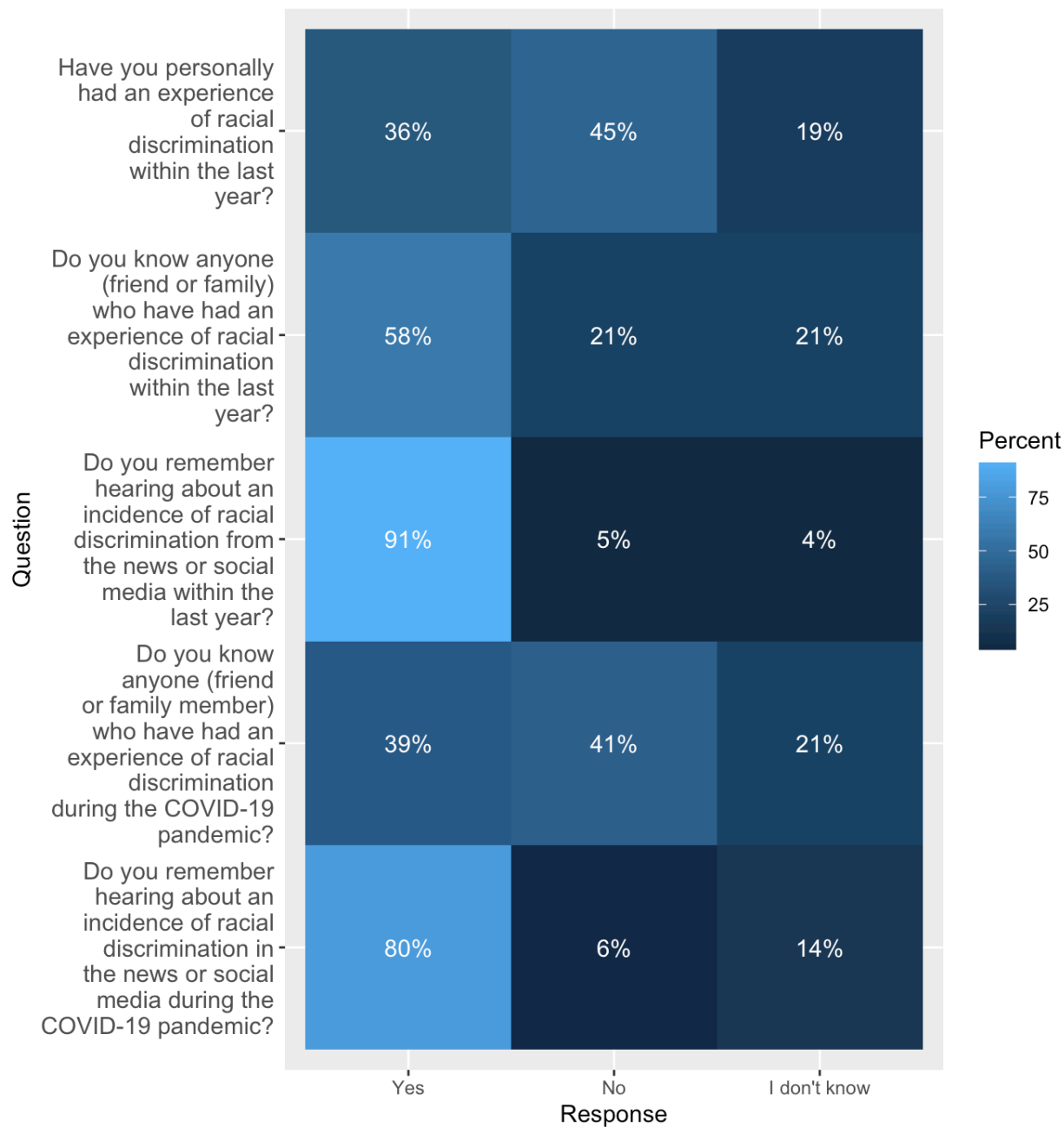


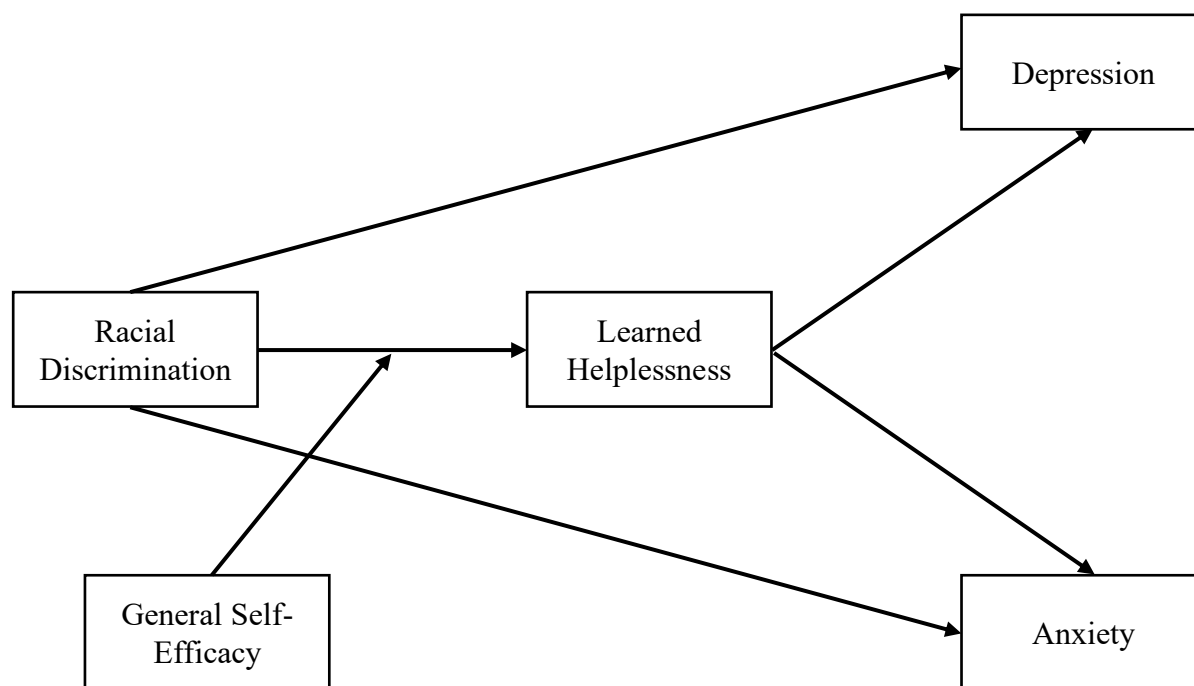
Figure 10. *Proposed Moderated-Mediation Model for Study 2*

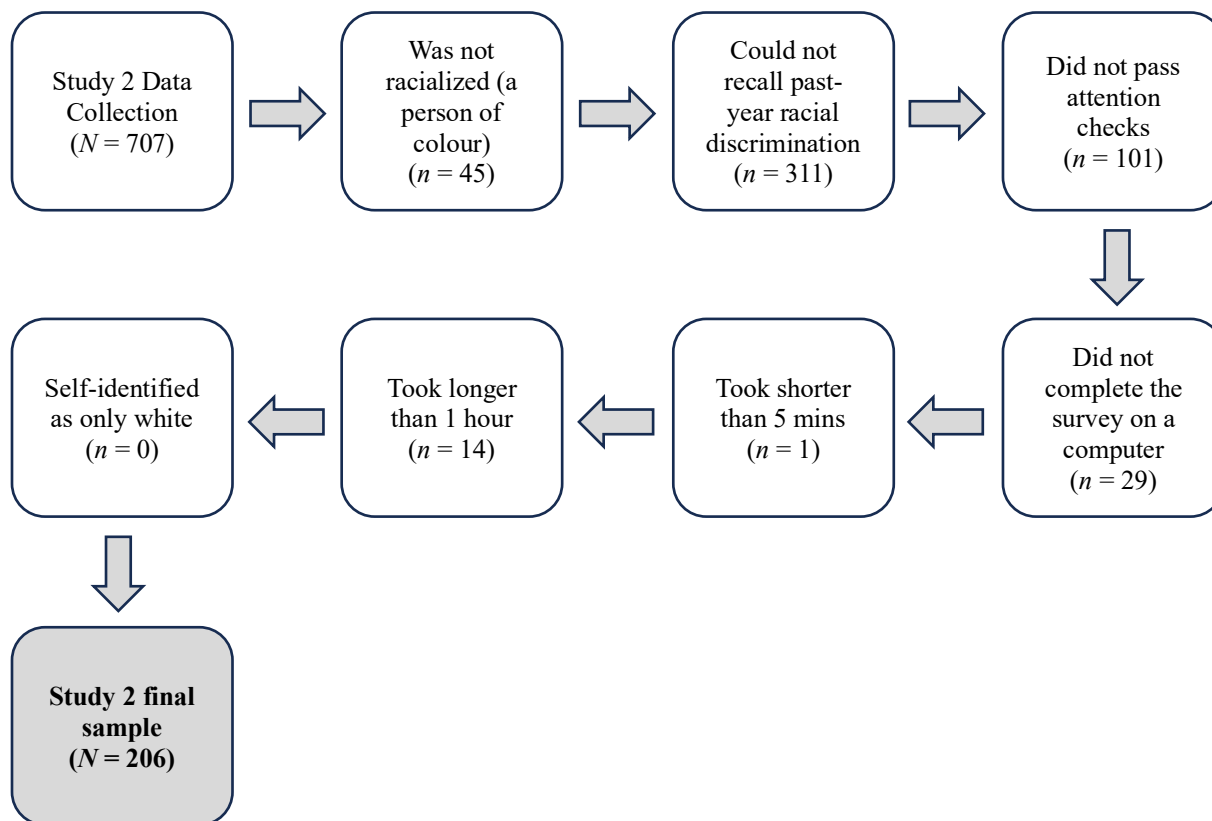
Figure 11. *Study 2 Data Collection and Exclusion Procedure*

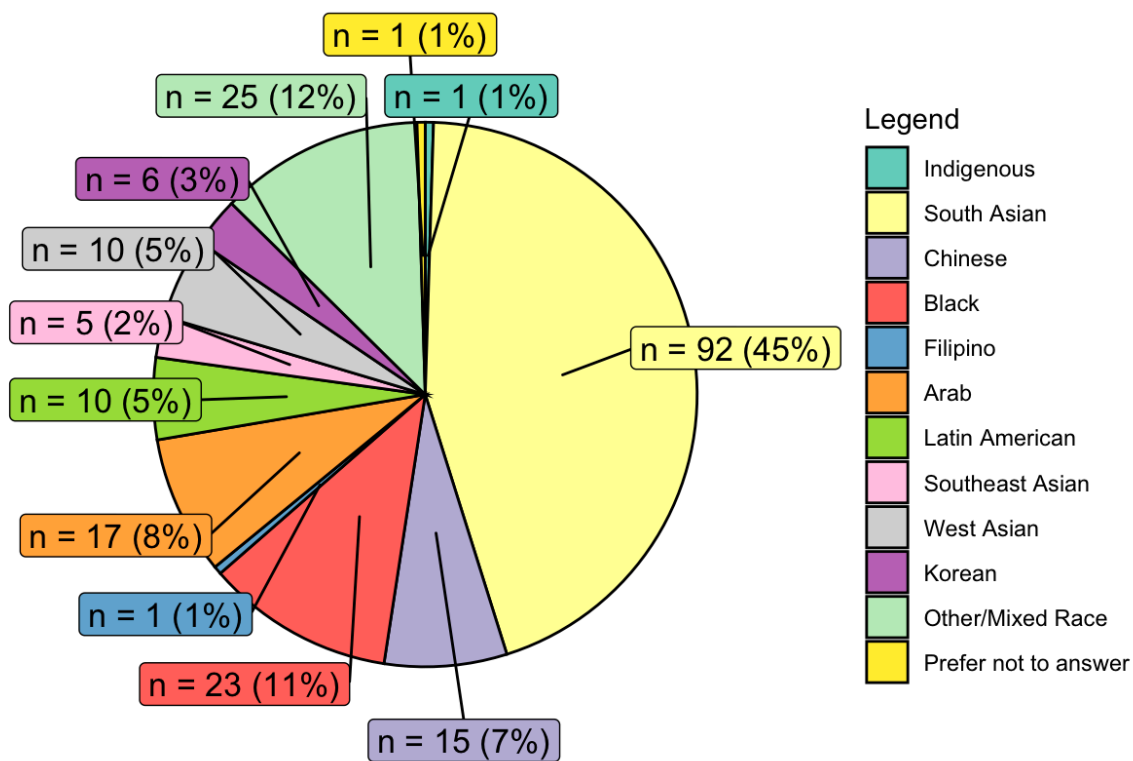
Figure 12. *Self-Identified Race of Participants in Study 2*

Figure 13. *Violin Plot Depicting Mean Learned Helplessness Scores Per Condition (Hypothesis 1)*

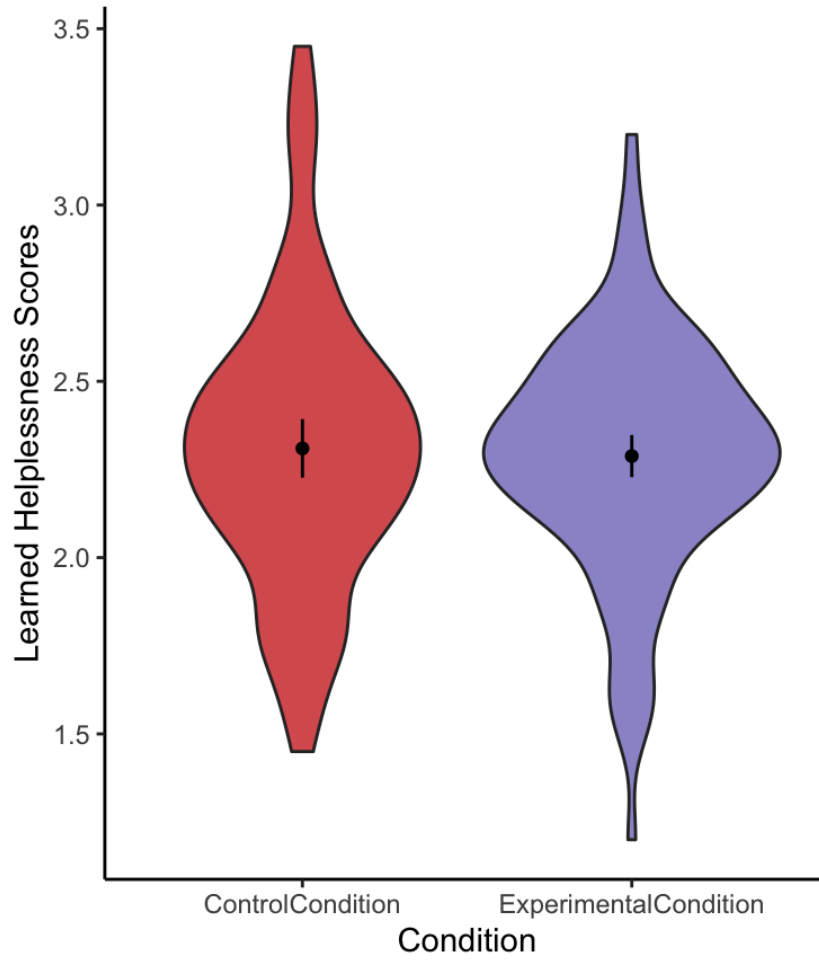


Figure 14. *Violin Plot Depicting Mean State Depression Scores Per Condition (Hypothesis 2)*

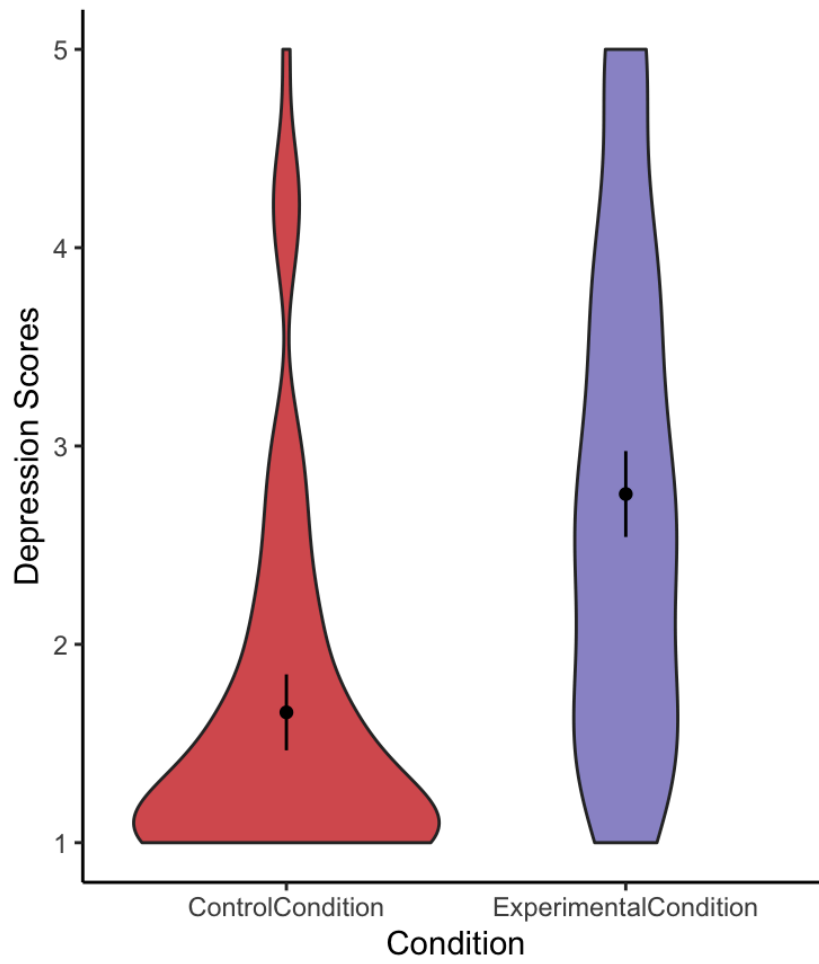


Figure 15. *Violin Plot Depicting Mean State Depression Scores Per Condition (Hypothesis 3)*

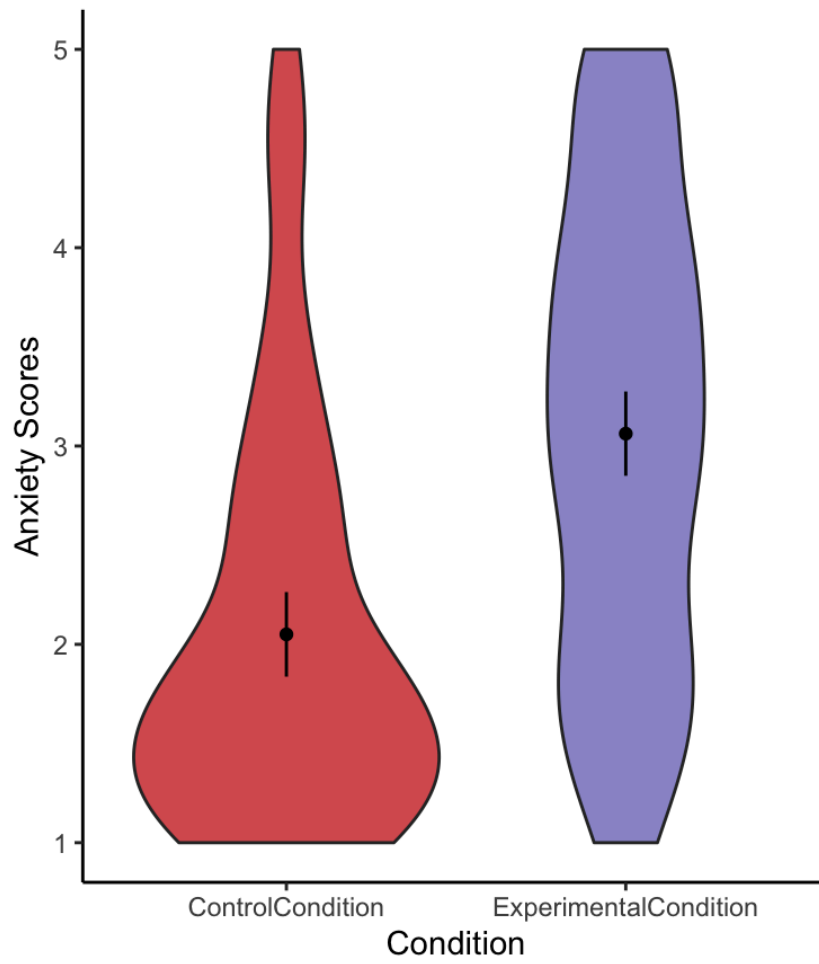
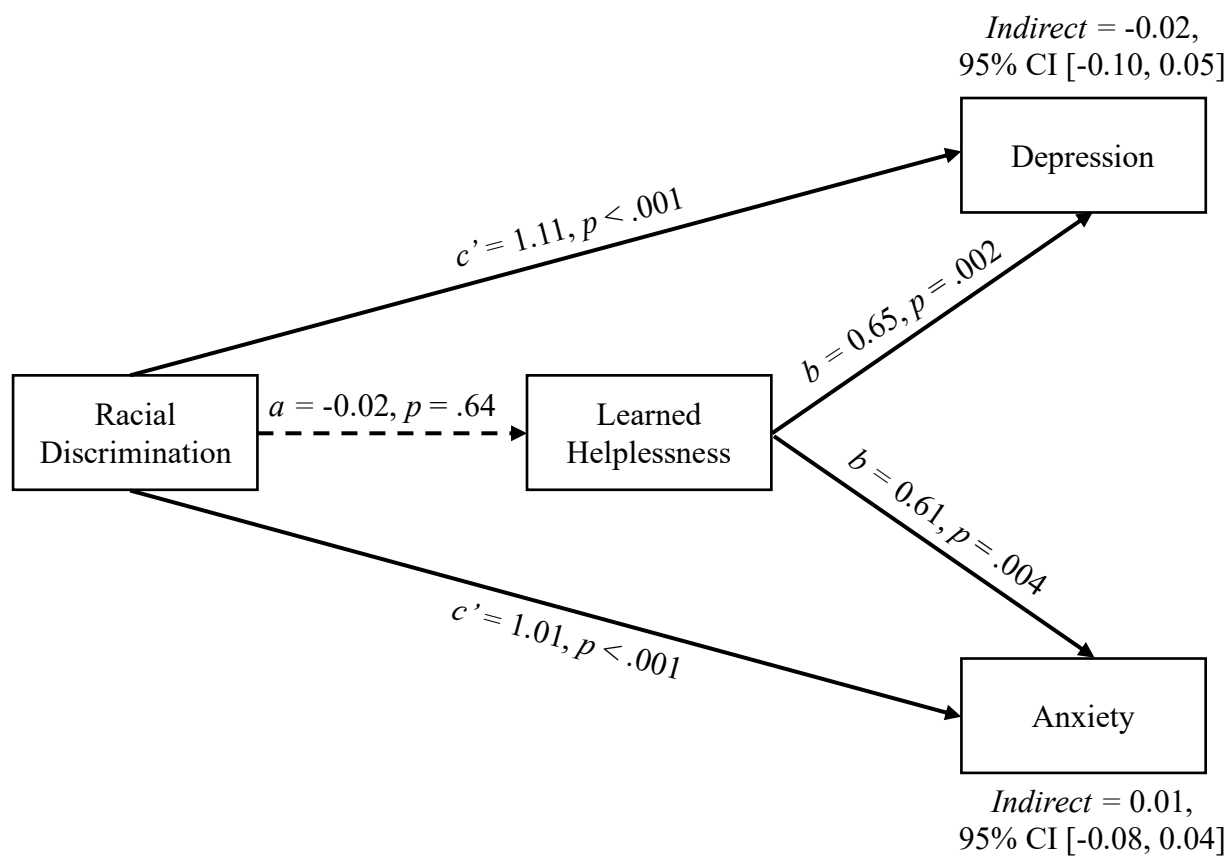
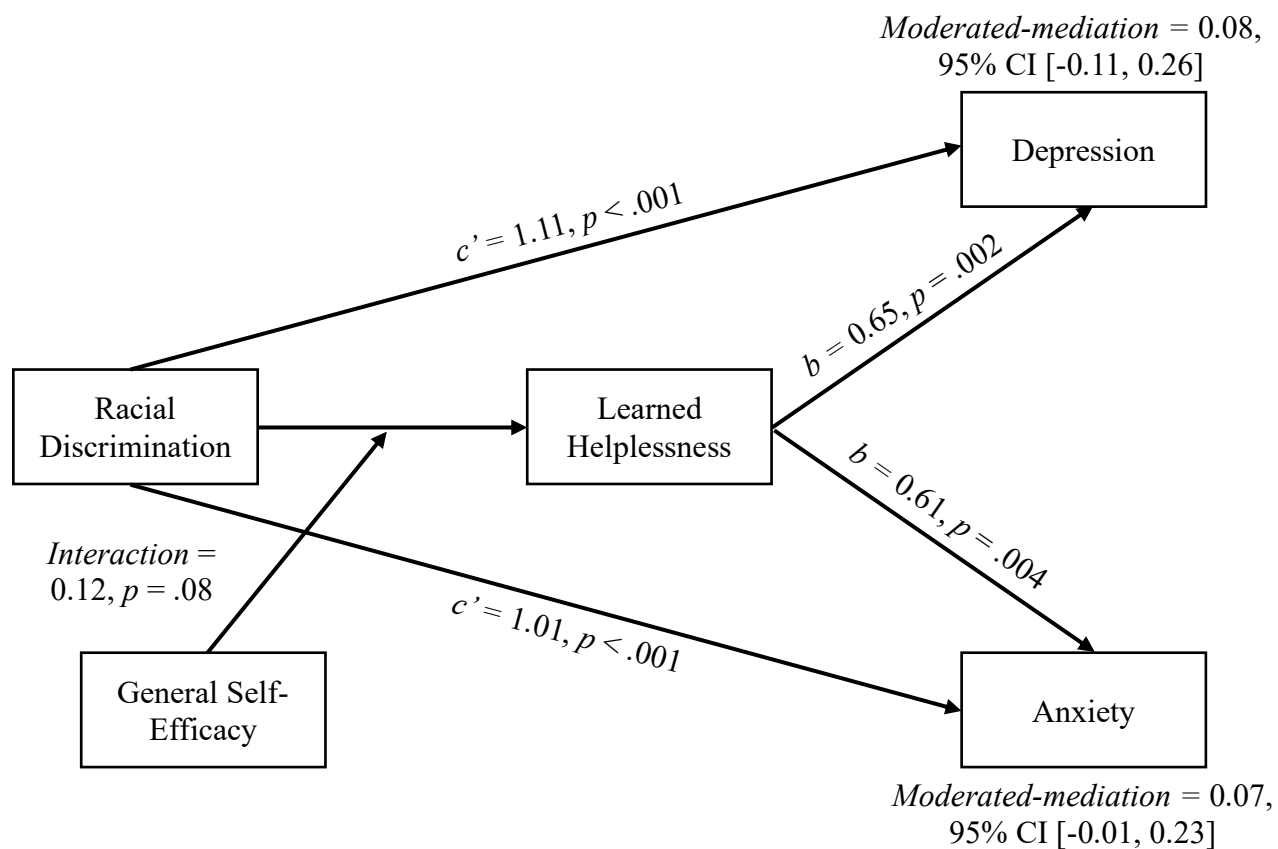


Figure 16. *Mediation Results for Study 2*

Note. Racial Discrimination was dummy coded by condition (0 = control condition, 1 = experimental condition). $N = 203$ with 3 participants excluded due to missing responses.

Figure 17. *Moderated-Mediation Results for Study 2*

Note. Racial Discrimination was dummy coded by condition (0 = control condition, 1 = experimental condition). $N = 203$ with 3 participants excluded due to missing responses.

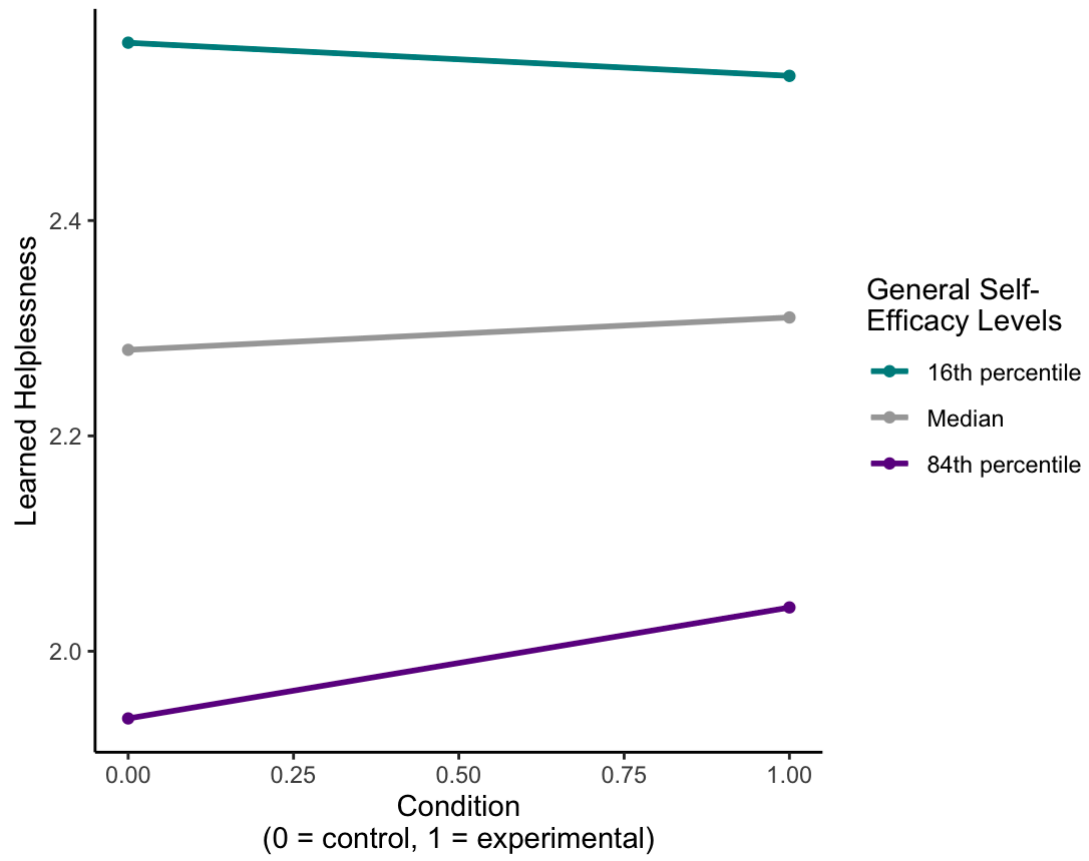
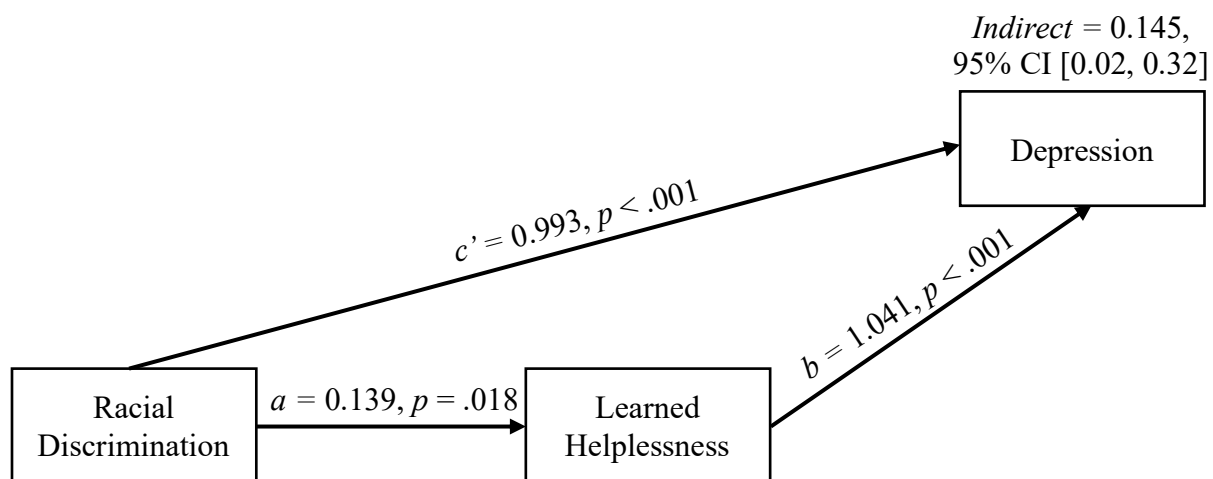
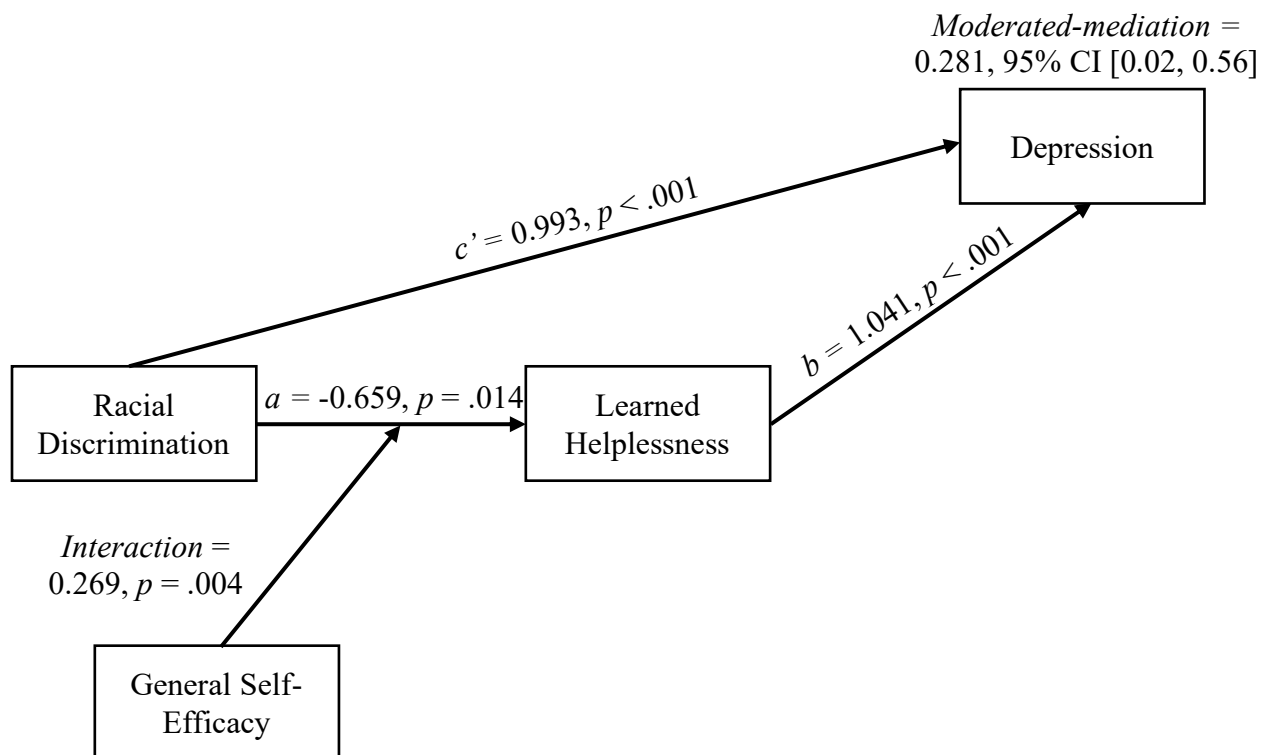
Figure 18. *Simple Slopes Graph for the Moderated-Mediation Interaction*

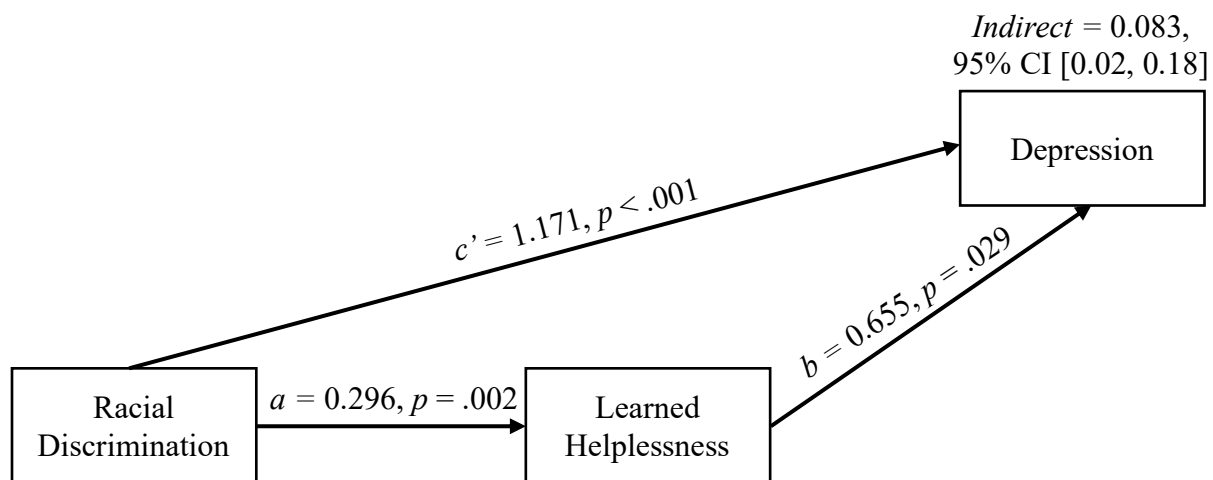
Figure 19. *Exploratory Mediation to State Depression with Study 1 Data*

Note. $N = 158$.

Figure 20. *Exploratory Moderated-Mediation on State Depression with Study 1 Data*

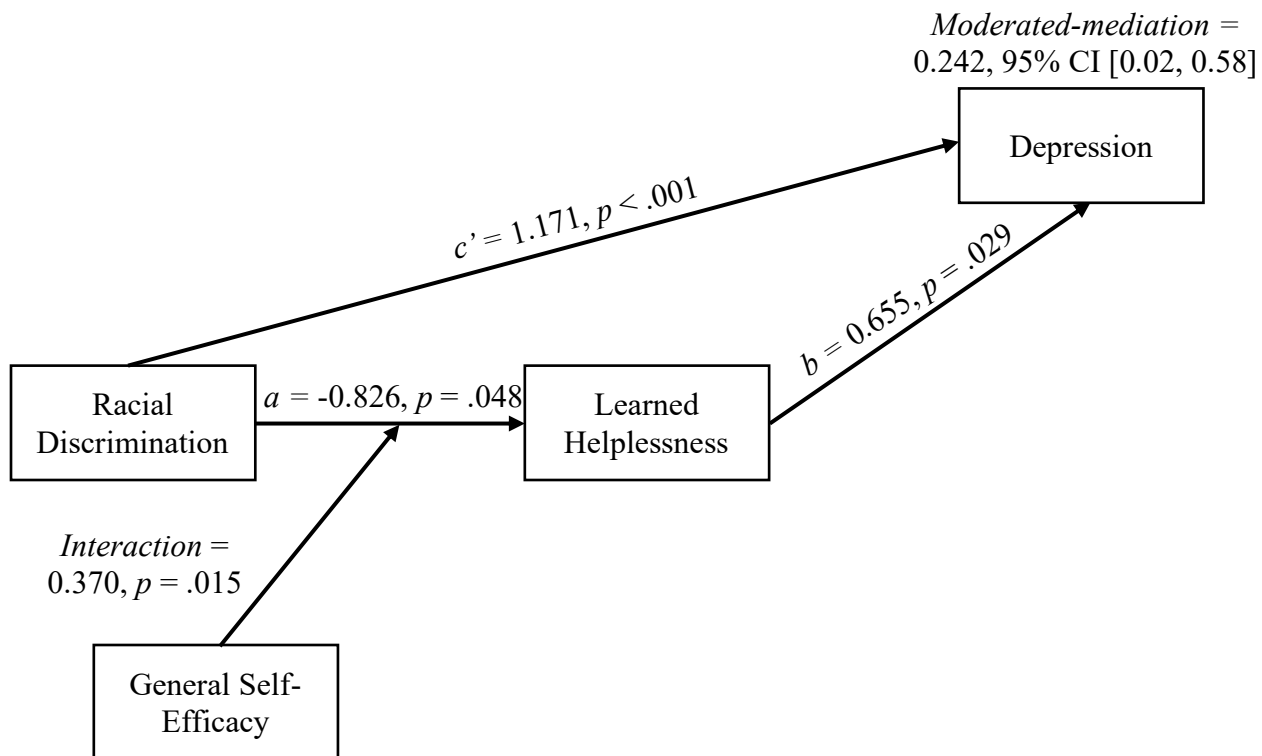
Note. $N = 158$.

Figure 21. *Exploratory Mediation on State Depression Amongst Study 1 Participants Who Could Not Recall Past-Year Racial Discrimination*



Note. $n = 70$.

Figure 22. *Exploratory Moderated-Mediation on State Depression Amongst Study 1 Participants Who Could Not Recall Past-Year Racial Discrimination*



Note. $n = 70$.

Appendix A

Outline of Study 1 Procedure and Materials

1. Informed Consent Form (1 minute)
2. Purpose of the study (1 item) (1 minute)
3. Learned Helplessness Scale (LHS; 20 items) (2 minutes)
4. General Self-Efficacy scale (10 items) (1 minute)
5. Avoidant subscale from the Coping Strategy Indicator (CSI subscale; 11 items) (1 minute)
6. Discrimination Stress Scale (DSS; 14 items) (2 minute)
7. Depression and anxiety subscales
 - a. Depression subscale from the Profile of Mood States scale (POMS subscale; 8 items) (1 minute)
 - b. Anxiety subscale from the Profile of Mood States scale (POMS subscale; 6 items) (1 minute)
8. Additional racial discrimination questions (5 items) (1 minute)
9. Demographics (3 items) (1 minute)
10. Data quality questions (2 items) (1 minute)
11. Debriefing Form (1 minute)

Total completion time: ~14 minutes

1. Informed Consent Form

Date: TBD

Study Name: The Penguin Study

Researcher Name: My name is Naomi Phung, and I am an MA student in the Social/Personality Psychology program at York University. I am the Principal Investigator for this research. You can contact me at nphung@yorku.ca if you have any questions.

Purpose of the Research: This online study aims to investigate various psychological factors and experiences that racialized individuals may face. This research study is a partial requirement for my master's thesis and will be written up and presented to a committee. Results from this study may be presented at academic conferences and/or in academic journals but will not be used for commercial purposes.

What You Will Be Asked to do in the Research: For this study, you will be asked to answer a few questionnaires about your feelings and experiences. The approximate time for completion is 14 minutes and you will be eligible to receive 0.5 experimental credits from the URPP for your participation.

Risks and Discomforts: We do not foresee any risks or discomfort from your participation in the research. If any of the materials in this study remind you of difficult experiences that you would like to discuss, you may contact Student Counselling, Health & Well-being (SCHW) at York University. SCHW provides confidential counseling about personal issues on an individual basis. You can contact SCHW by telephone at (416) 736-5297. More detailed information on SCHW is available at <https://counselling.students.yorku.ca/>.

Benefits of the Research and Benefits to You: Your participation in this study provides you with an opportunity to reflect on your personality and experiences while also learning more about the process of psychological research. You will also help advance scientific understanding in social psychological research.

Voluntary Participation and Withdrawal: Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to volunteer, to stop participating, or to refuse to answer particular questions will not influence the nature of the ongoing relationship you may have with the researchers or study staff, or the nature of your relationship with York University either now, or in the future.

If you stop participating, you will still be eligible to receive the course credits for agreeing to be in the project, even if you withdraw without completion of the research. Should you wish to withdraw after the study, you will have the option to also withdraw your data up until the analysis is complete.

Confidentiality: All information you supply during the research will be held in confidence.

Your data will be collected online and will be safely stored electronically in a locked computer file, and only research staff will have access to this information. Your name or any identifying information is not stored with your data. The data will be archived in a publicly accessible electronics repository on the Open Science Framework (osf.io). Researchers will have access to your data though always on an anonymous basis. Confidentiality will be provided to the fullest extent possible by law.

The researchers acknowledge that the host of the online survey (i.e., Qualtrics) may automatically collect participant data without their knowledge (i.e., IP addresses). Although this information may be provided or made accessible to the researchers, it will not be used or saved without participant's consent on the researcher's system. Further, because this project employs e-based collection techniques, data may be subject to access by third parties as a result of various security legislation now in place in many countries and thus *the confidentiality and privacy of data cannot be guaranteed during web-based transmission*.

Questions About the Research? If you have questions about the research in general or about your role in the study, please feel free to contact me at nphung@yorku.ca or my supervisor, Dr. Esther Greenglass, estherg@yorku.ca.

This research has received ethics review and approval by the Human Participants Review Subcommittee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Director, Research Ethics in the Office of Research Ethics, 3rd Floor, Kaneff Tower, York University (e-mail: ore@yorku.ca).

Legal Rights and Consent:

I consent to participate in the _____ (study name) study conducted by Naomi Phung and Dr. Esther Greenglass. I have understood the nature of this project and wish to participate. I am not waiving any of my legal rights by agreeing to participate in this study. Selecting 'I agree' below indicates my consent to participate. Selecting 'I do not agree' indicates that I do not agree to participate.

- I agree to participate
- I do not agree to participate

2. Purpose of the Study

Prompt to participants:

Thank you for consenting to participate in this study. The purpose of this study is to investigate various psychological factors and experiences that racialized individuals may sometimes face living in Canada. Therefore, in order to participate in this study, you must be a racialized person.

If you are a racialized person, please select “I AM a racialized person.”

If you are not a racialized person, please select “I AM NOT a racialized person.”

- I AM a racialized person.
- I AM NOT a racialized person.

3. Learned Helplessness Scale (Quinless & Nelson, 1988)

Instructions: Please use the scale below to indicate how closely the statement describes you or your feelings about yourself.

#	Item	Strongly Agree	Agree	Disagree	Strongly Disagree
1	No matter how much energy I put into a task, I feel I have no control over the outcome.	1	2	3	4
2	I feel that my ability to solve problems is the cause of my success.	1	2	3	4
3	I can find solutions to difficult problems.	1	2	3	4
4	I don't place myself in situations in which I cannot predict the outcome.	1	2	3	4
5	If I complete a task successfully, it is probably because of my ability.	1	2	3	4
6	I have the ability to solve most of life's problems.	1	2	3	4
7	When I do not succeed at a task, I do not attempt any similar tasks because I feel that I would fail them also.	1	2	3	4
8	When something doesn't turn out the way I planned, I know it is because I didn't have the ability to start with.	1	2	3	4
9	Other people have more control over their success and/or failure than I do.	1	2	3	4
10	I try new tasks if I have failed similar ones in the past.	1	2	3	4
11	When I perform poorly, it is because I don't have the ability to perform better.	1	2	3	4
12	I accept tasks even if I am not sure that I will succeed at them.	1	2	3	4
13	I feel that I have little control over the outcomes of my work.	1	2	3	4
14	I am successful at most tasks I try.	1	2	3	4
15	I feel that anyone else could be better than me at most tasks.	1	2	3	4
16	I am able to reach my goals in life.	1	2	3	4
17	When I don't succeed at a task, I find myself blaming my own stupidity for my failure.	1	2	3	4
18	For this question, please select the option "Agree"	1	2	3	4
19	No matter how hard I try, things never seem to work out the way I want them to.	1	2	3	4
20	I feel that my success reflects my ability, not chance.	1	2	3	4
21	My behaviour seems to influence the success of a work group.	1	2	3	4

4. Generalized Self-Efficacy Scale (Schwarzer & Jerusalem, 1995)

Instructions: Indicate how true each of these statements is depending on how you feel about the situation by selecting the appropriate response.

#	Item	Not at All True	Barely True	Moderately True	Exactly True
1	I can always manage to solve difficult problems if I try hard enough.	1	2	3	4
2	If someone opposes me, I can find means and ways to get what I want.	1	2	3	4
3	It is easy for me to stick to my aims and accomplish my goals.	1	2	3	4
4	I am confident that I could deal efficiently with unexpected events.	1	2	3	4
5	Thanks to my resourcefulness, I know how to handle unforeseen situations.	1	2	3	4
6	I can solve most problems if I invest the necessary effort.	1	2	3	4
7	I can remain calm when facing difficulties because I can rely on my coping abilities.	1	2	3	4
8	When I am confronted with a problem, I can usually find several solutions.	1	2	3	4
9	If I am in a bind, I can usually think of something to do.	1	2	3	4
10	No matter what comes my way, I'm usually able to handle it.	1	2	3	4

5. Avoidant Subscale from the Coping Strategy Indicator (Amirkhan, 1990)

Instructions: When you encounter difficult situations, how often have you engaged in the following behaviours?

#	Item	Not at all	A little	A lot
1	Tried to distract yourself from the problem.	1	2	3
2	Did all you could to keep others from seeing how bad things really are.	1	2	3
3	Daydreamed about better times.	1	2	3
4	Spent more time than usual alone.	1	2	3
5	Watched television more than usual.	1	2	3
6	Avoided being with people in general.	1	2	3
7	Buried yourself in a hobby or sports activity to avoid the problem.	1	2	3
8	Slept more than usual.	1	2	3
9	For this question, please select the option "A lot"	1	2	3
10	Fantasized about how things could have been different.	1	2	3
11	Identified with characters in movies or novels.	1	2	3
12	Wished that people would just leave you alone.	1	2	3

6. Discrimination Stress Scale (Flores et al., 2008)

Instructions: Using the scale below, please answer according to how you sometimes may feel as a racialized person living in Canada.

#	Item	Not Applicable	Never	Sometimes	Often	Always
1	How often are you treated rudely or unfairly because of your race?	0	1	2	3	4
2	How often are you discriminated against because of your race?	0	1	2	3	4
3	How often do others lack respect for you because of your race?	0	1	2	3	4
4	How often do you have to prove your abilities to others because of your race?	0	1	2	3	4
5	How often is racism a problem in your life?	0	1	2	3	4
6	How often do you find it difficult to find work you want because of your race?	0	1	2	3	4
7	For this question, please select the option, "Sometimes"	0	1	2	3	4
8	How often do people dislike you because of your race?	0	1	2	3	4
9	How often have you seen friends treated badly because of their race?	0	1	2	3	4
10	How often do you feel that you have more barriers to overcome than most people because of your race?	0	1	2	3	4
11	How often do you feel rejected by others because of your race?	0	1	2	3	4
12	How often is being racialized a limitation when looking for a job?	0	1	2	3	4
13	How often do people seem to have stereotypes about racialized people?	0	1	2	3	4
14	How often do people try to stop you from succeeding because of your race	0	1	2	3	4
15	How often do you not get as much recognition as you deserve	0	1	2	3	4

	for the work you do, just because of your race?					
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7. Depression and Anxiety Subscales from the Profile of Mood States (POMS) (Shacham, 1983)

Instructions: Please use the scale below to indicate how you feel when you experience discrimination on the basis of your race.

7a. Depression Subscale

#	Item	Not Applicable	Not at all	A little	Moderately	Quite a bit	Extremely
1	Unhappy	0	1	2	3	4	5
2	Sad	0	1	2	3	4	5
3	For this question, please select the option, "Not at all"	0	1	2	3	4	5
4	Worthless	0	1	2	3	4	5
5	Blue	0	1	2	3	4	5
6	Hopeless	0	1	2	3	4	5
7	Discouraged	0	1	2	3	4	5
8	Miserable	0	1	2	3	4	5
9	Helpless	0	1	2	3	4	5

Instructions: Please use the scale below to indicate how you feel when you experience discrimination on the basis of your race.

7b. Anxiety Subscale

#	Item	Not Applicable	Not at all	A little	Moderately	Quite a bit	Extremely
1	Tense	0	1	2	3	4	5
2	On edge	0	1	2	3	4	5
3	Uneasy	0	1	2	3	4	5
4	Nervous	0	1	2	3	4	5
5	Anxious	0	1	2	3	4	5
6	Restless	0	1	2	3	4	5

8. Additional Racial Discrimination Questions

Instructions: Please answer the following questions regarding your experience with racial discrimination. Only select 'Yes' if you can remember specific experiences.

#	Item	Yes	No	Not sure
1	Have you personally had an experience of racial discrimination within the last year?	1	2	3
2	Do you know anyone (friend or family) who have had an experience of racial discrimination within the last year?	1	2	3
3	Do you remember hearing about an incidence of racial discrimination from the news or social media within the last year?	1	2	3
4	Do you know anyone (friend or family member) who have had an experience of racial discrimination during the COVID-19 pandemic?	1	2	3
5	For this question, please select the option, "Yes"	1	2	3
6	Do you remember hearing about an incidence of racial discrimination in the news or social media during the COVID-19 pandemic?	1	2	3

9. Demographics Questions

Instructions: Please answer the following questions about yourself.

1. What is your gender?
 - a. Male
 - b. Female
 - c. Other (please specify: _____)

2. What is your age? [dropdown menu]

3. Which racial group do you identify with? (Select all that apply)
 - a. White
 - b. Indigenous (First Nations, Métis, Inuit)
 - c. South Asian (e.g., East Indian, Pakistani, Sri Lankan)
 - d. Chinese
 - e. Black
 - f. Filipino
 - g. Arab
 - h. Latin American
 - i. Southeast Asian (e.g., Vietnamese, Cambodian, Laotian, Thai)
 - j. West Asian (e.g., Iranian, Afghan)
 - k. Korean
 - l. Japanese
 - m. Other group (please specify: _____)
 - n. Prefer not to answer

10. Data Quality Questions

Instructions: Please answer these following 2 questions.

#	Item	Response Options	
1	As far as you can recall, what is the purpose of the study?	Open-ended response	
2	Did you complete this study on a computer?	Yes (1)	No (2)

11. Debriefing Form

Now that you have completed the study, you might be curious to know more about the purpose of the study and what we hope to find. Previous research shows that racialized individuals who have experienced racial discrimination face negative consequences in their physical and mental health (Paradies, 2006). The purpose of this research was to investigate the relationships between racial discrimination, depression, learned helplessness, avoidant coping, and general self-efficacy while also investigating whether you can remember specific examples of racial discrimination that occurred to you or someone you know within the last year, since COVID-19 started, and from the news/media. These findings will contribute to the existing research on the negative consequences of racial discrimination as well as whether these experiences are remembered in recent years.

If any of the materials in this study reminded you of unpleasant events and brought up unpleasant feelings that you would like to discuss, you may contact Student Counselling, Health & Well-being (SCHW) at York University which provides confidential counseling about personal issues on an individual basis. You can contact SCHW by telephone at (416) 736-5297 or visit their website (<https://counselling.students.yorku.ca/>) for more information.

We would ask you to maintain confidentiality about the purpose of the experiment since any pre-knowledge of the purpose will bias the data for that person and thus will detract from the validity of the research findings.

We are most grateful to you for taking the time to participate in this important research, which will contribute to knowledge about how people react during difficult economic times.

If you have any questions or concerns about this research, please feel free to contact Naomi Phung (Master's Thesis Researcher) at nphung@yorku.ca or Dr. Esther Greenglass (Project Supervisor) at estherg@yorku.ca. Thank you.

References

- Paradies, Y. C., & Cunningham, J. (2012). The DRUID study: Exploring mediating pathways between racism and depressive symptoms among Indigenous Australians. *Social Psychiatry and Psychiatric Epidemiology*, 47(2), 165–173. <https://doi.org/10.1007/s00127-010-0332-x>

Appendix B

Outline of Study 2 Procedure and Materials

1. Informed Consent Form (1 minute)
2. Purpose of the study (1 item) (1 minute)
3. Manipulation (Random Assignment to Condition):
 - a. Racial discrimination recall condition (6 minutes)
 - b. Control condition (6 minutes)
4. Manipulation checks:
 - a. Positive and Negative Affect schedule (Watson et al., 1988; 20 items) (3 minutes)
 - b. Anger item (1 item) (1 minute)
5. Learned Helplessness Scale (Quinless & Nelson, 1988; 20 items) (3 minutes)
6. General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995; 10 items) (2 minutes)
7. Discrimination Stress Scale (Flores et al., 2008; 14 items) (2 minutes)
8. Depression and anxiety subscales
 - a. Depression subscale from the Shortened Profile of Mood States (Shacham, 1983; 8 items) (1 minute)
 - b. Anxiety subscale from the Shortened Profile of Mood States (Shacham, 1983; 6 items) (1 minute)
9. Demographics questions (3 items) (1 minute)
10. Data quality questions (2 items) (1 minute)
11. Debriefing Form (1 minute)

Total completion time: ~24 minutes

1. Informed Consent Form

Date: TBD

Study Name: The Elephant Study

Researcher Name: My name is Naomi Phung, and I am an MA student in the Social/Personality Psychology program at York University. I am the Principal Investigator for this research. You can contact me at nphung@yorku.ca if you have any questions.

Purpose of the Research: This online study aims to investigate various psychological factors and the recall of experiences. This research study is a partial requirement for my master's thesis and will be written up and presented to a committee. Results from this study may be presented at academic conferences and/or in academic journals but will not be used for commercial purposes.

What You Will Be Asked to do in the Research: For this study, you will be asked to think about a time when you have experienced a specific experience. Then, you will be asked to write about that experience and respond to some questions. The approximate time for completion is 24 minutes and you will be eligible to receive 0.5 experimental credits from the URPP for your participation.

Risks and Discomforts: You may experience some mild discomfort when recalling an experience that you have had. If any of the materials in this study remind you of difficult experiences that you would like to discuss, you may contact Student Counselling, Health & Well-being (SCHW) at York University. SCHW provides confidential counseling about personal issues on an individual basis. You can contact SCHW by telephone at (416) 736-5297. More detailed information on SCHW is available at <https://counselling.students.yorku.ca/>.

Benefits of the Research and Benefits to You: Your participation in this study provides you with an opportunity to reflect on your personality and experiences while also learning more about the process of psychological research. You will also help advance scientific understanding in social psychological research.

Voluntary Participation and Withdrawal: Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to volunteer, to stop participating, or to refuse to answer particular questions will not influence the nature of the ongoing relationship you may have with the researchers or study staff, or the nature of your relationship with York University either now, or in the future.

If you stop participating, you will still be eligible to receive the course credits for agreeing to be in the project, even if you withdraw without completion of the research. Should you wish to withdraw after the study, you will have the option to also withdraw your data up until the analysis is complete.

Confidentiality: All information you supply during the research will be held in confidence.

Your data will be collected online and will be safely stored electronically in a locked computer file, and only research staff will have access to this information. Your name or any identifying information is not stored with your data. The data will be archived in a publicly accessible electronics repository on the Open Science Framework (osf.io). Researchers will have access to your data though always on an anonymous basis. Confidentiality will be provided to the fullest extent possible by law.

The researchers acknowledge that the host of the online survey (i.e., Qualtrics) may automatically collect participant data without their knowledge (i.e., IP addresses). Although this information may be provided or made accessible to the researchers, it will not be used or saved without participant's consent on the researcher's system. Further, because this project employs e-based collection techniques, data may be subject to access by third parties as a result of various security legislation now in place in many countries and thus *the confidentiality and privacy of data cannot be guaranteed during web-based transmission*.

Questions About the Research? If you have questions about the research in general or about your role in the study, please feel free to contact me at nphung@yorku.ca or my supervisor, Dr. Esther Greenglass, estherg@yorku.ca.

This research has received ethics review and approval by the Human Participants Review Subcommittee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Director, Research Ethics in the Office of Research Ethics, 3rd Floor, Kaneff Tower, York University (e-mail: ore@yorku.ca).

Legal Rights and Consent:

I consent to participate in the _____ (study name) study conducted by Naomi Phung and Dr. Esther Greenglass. I have understood the nature of this project and wish to participate. I am not waiving any of my legal rights by agreeing to participate in this study. Selecting 'I agree' below indicates my consent to participate. Selecting 'I do not agree' indicates that I do not agree to participate.

- I agree to participate
- I do not agree to participate

2. Purpose of the Study

Prompt to participants:

Thank you for consenting to participate in this study. The purpose of this study is to investigate racialized people's experiences of racial discrimination within the last year. So, in order to participate in this study, you must be a racialized person, and you must remember an experience of racial discrimination within the last year.

To continue, please select the option that best describes you:

- I AM a racialized person, and I CAN remember an experience of racial discrimination within the last year.
- I AM a racialized person, and I CANNOT remember an experience of racial discrimination within the last year.
- I AM NOT a racialized person, and I CAN remember an experience of racial discrimination within the last year.
- I AM NOT a racialized person, and I CANNOT remember an experience of racial discrimination within the last year.

3. Manipulation (Random Assignment to Condition)

Participants will be randomly assigned to either the Racial Discrimination or the Control Condition prior to starting the questionnaires. The questionnaire will be administered through Qualtrics and Qualtrics will be used to randomly assign participants to a condition.

1. Racial Discrimination condition
 - a. Presented with: “Have you experienced racial discrimination within the last year?”
 - i. If participants indicate “no” or “I don’t know,” then they will not be able to fill out the questionnaire and will automatically be directed to the debriefing form.
 - ii. If participants indicate “yes,” they will be presented with the following: “In the textbox provided below, please write a few sentences about your experience (s) of racial discrimination within the last year.”
2. Control condition
 - a. Presented with: “Have you engaged in a leisurely activity within the last year?”
 - i. If participants indicate “no” or “I don’t know,” then they will not be able to fill out the questionnaire and will automatically be directed to the debriefing form.
 - ii. If participants indicate “yes,” they will be presented with the following: “In the textbox provided below, please write a few sentences about your experience of engaging in a leisurely activity within the last year.”

4. Manipulation Checks

Instructions for the Racial Discrimination Condition: Using the scales below, please answer according to how you felt when you experienced racial discrimination within the last year.

Instructions for the Control Condition: Using the scales below, please answer according to how you felt when you engaged in a leisurely activity within the last year.

4a. Positive and Negative Affect Schedule (PANAS; Watson et al., 1988)

#	Item	Very slightly or not at all	A little	Moderately	Quite a Bit	Extremely
1	Interested	1	2	3	4	5
2	Distressed	1	2	3	4	5
3	Excited	1	2	3	4	5
4	Upset	1	2	3	4	5
5	Strong	1	2	3	4	5
6	Guilty	1	2	3	4	5
7	Scared	1	2	3	4	5
8	Hostile	1	2	3	4	5
9	Enthusiastic	1	2	3	4	5
10	Proud	1	2	3	4	5
11	Irritable	1	2	3	4	5
12	Alert	1	2	3	4	5
13	Ashamed	1	2	3	4	5
14	Inspired	1	2	3	4	5
15	Nervous	1	2	3	4	5
16	Determined	1	2	3	4	5
17	Attentive	1	2	3	4	5
18	Jittery	1	2	3	4	5
19	Active	1	2	3	4	5
20	Afraid	1	2	3	4	5

4b. Angry item

#	Item	Very slightly or not at all	A little	Moderately	Quite a Bit	Extremely
1	Angry	1	2	3	4	5

5. Learned Helplessness Scale (Quinless & Nelson, 1988)

Instructions: Please use the scale below to indicate how closely the statement describes you or your feelings about yourself.

#	Item	Strongly Agree	Agree	Disagree	Strongly Disagree
1	No matter how much energy I put into a task, I feel I have no control over the outcome.	1	2	3	4
2	I feel that my ability to solve problems is the cause of my success.	1	2	3	4
3	I can find solutions to difficult problems.	1	2	3	4
4	I don't place myself in situations in which I cannot predict the outcome.	1	2	3	4
5	If I complete a task successfully, it is probably because of my ability.	1	2	3	4
6	I have the ability to solve most of life's problems.	1	2	3	4
7	When I do not succeed at a task, I do not attempt any similar tasks because I feel that I would fail them also.	1	2	3	4
8	When something doesn't turn out the way I planned, I know it is because I didn't have the ability to start with.	1	2	3	4
9	For this question, please select the option, "Strongly Disagree"	1	2	3	4
10	Other people have more control over their success and/or failure than I do.	1	2	3	4
11	I try new tasks if I have failed similar ones in the past.	1	2	3	4
12	When I perform poorly, it is because I don't have the ability to perform better.	1	2	3	4
13	I accept tasks even if I am not sure that I will succeed at them.	1	2	3	4
14	I feel that I have little control over the outcomes of my work.	1	2	3	4
15	I am successful at most tasks I try.	1	2	3	4
16	I feel that anyone else could be better than me at most tasks.	1	2	3	4
17	I am able to reach my goals in life.	1	2	3	4
18	When I don't succeed at a task, I find myself blaming my own stupidity for my failure.	1	2	3	4
19	For this question, please select the option, "Agree"	1	2	3	4
20	No matter how hard I try, things never seem to work out the way I want them to.	1	2	3	4
21	I feel that my success reflects my ability, not chance.	1	2	3	4

22	My behaviour seems to influence the success of a work group.	1	2	3	4
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6. Generalized Self-Efficacy Scale (Schwarzer & Jerusalem, 1995)

Instructions: Indicate how true each of these statements is depending on how you feel about the situation by selecting the appropriate response.

#	Item	Not at All True	Barely True	Moderately True	Exactly True
1	I can always manage to solve difficult problems if I try hard enough.	1	2	3	4
2	If someone opposes me, I can find means and ways to get what I want.	1	2	3	4
3	It is easy for me to stick to my aims and accomplish my goals.	1	2	3	4
4	For this question, please select the option, "Moderately True"	1	2	3	4
5	I am confident that I could deal efficiently with unexpected events.	1	2	3	4
6	Thanks to my resourcefulness, I know how to handle unforeseen situations.	1	2	3	4
7	I can solve most problems if I invest the necessary effort.	1	2	3	4
8	I can remain calm when facing difficulties because I can rely on my coping abilities.	1	2	3	4
9	When I am confronted with a problem, I can usually find several solutions.	1	2	3	4
10	If I am in a bind, I can usually think of something to do.	1	2	3	4
11	No matter what comes my way, I'm usually able to handle it.	1	2	3	4

7. Discrimination Stress Scale (Flores et al., 2008)

Instructions: Using the scale below, please answer according to how you sometimes may feel as a racialized person living in Canada.

#	Item	Not Applicable	Never	Sometimes	Often	Always
1	How often are you treated rudely or unfairly because of your race?	0	1	2	3	4
2	How often are you discriminated against because of your race?	0	1	2	3	4
3	How often do others lack respect for you because of your race?	0	1	2	3	4
4	How often do you have to prove your abilities to others because of your race?	0	1	2	3	4
5	How often is racism a problem in your life?	0	1	2	3	4
6	How often do you find it difficult to find work you want because of your race?	0	1	2	3	4
7	For this question, please select the option, "Never"	0	1	2	3	4
8	How often do people dislike you because of your race?	0	1	2	3	4
9	How often have you seen friends treated badly because of their race?	0	1	2	3	4
10	How often do you feel that you have more barriers to overcome than most people because of your race?	0	1	2	3	4
11	How often do you feel rejected by others because of your race?	0	1	2	3	4
12	How often is being racialized a limitation when looking for a job?	0	1	2	3	4
13	How often do people seem to have stereotypes about racialized people?	0	1	2	3	4
14	How often do people try to stop you from succeeding because of your race	0	1	2	3	4
15	How often do you not get as much recognition as you deserve	0	1	2	3	4

	for the work you do, just because of your race?					
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8. Depression and Anxiety Subscales from the Profile of Mood States (POMS) (Shacham, 1983)

Instructions for the Racial Discrimination condition: Using the scales below, please answer according to how you felt when you experienced racial discrimination within the last year.

Instructions for the Control condition: Using the scales below, please answer according to how you felt when you engaged in a leisurely activity within the last year.

8a. Depression Subscale

#	Item	Not Applicable	Not at all	A little	Moderately	Quite a bit	Extremely
1	Unhappy	0	1	2	3	4	5
2	Sad	0	1	2	3	4	5
3	Worthless	0	1	2	3	4	5
4	Blue	0	1	2	3	4	5
5	Hopeless	0	1	2	3	4	5
6	Discouraged	0	1	2	3	4	5
7	Miserable	0	1	2	3	4	5
8	Helpless	0	1	2	3	4	5

8b. Anxiety Subscale

#	Item	Not Applicable	Not at all	A little	Moderately	Quite a bit	Extremely
1	Tense	0	1	2	3	4	5
2	On edge	0	1	2	3	4	5
3	Uneasy	0	1	2	3	4	5
4	Nervous	0	1	2	3	4	5
5	Anxious	0	1	2	3	4	5
6	For this question, please select the option, "Quite a bit"	0	1	2	3	4	5
7	Restless	0	1	2	3	4	5

9. Demographics Questions

Instructions: Please answer the following questions about yourself.

1. What is your gender?
 - a. Male
 - b. Female
 - c. Other (please specify): _____

2. What is your age? [Dropdown menu]

3. Which racial group do you identify with? (Select all that apply)
 - a. White
 - b. Indigenous (First Nations, Métis, Inuit)
 - c. South Asian (e.g., East Indian, Pakistani, Sri Lankan)
 - d. Chinese
 - e. Black
 - f. Filipino
 - g. Arab
 - h. Latin American
 - i. Southeast Asian (e.g., Vietnamese, Cambodian, Laotian, Thai)
 - j. West Asian (e.g., Iranian, Afghan)
 - k. Korean
 - l. Japanese
 - m. Other group (please specify: _____)
 - n. Prefer not to answer

10. Data Quality Questions

Instructions: Please answer these following 2 questions.

#	Item	Response Options	
1	As far as you can recall, what was the purpose of the study?	Open-ended response	
2	Did you complete this study on a computer?	Yes (1)	No (2)

11. Debriefing Form

Now that you have completed the study, you might be curious to know more about the purpose of the study and what we hope to find. This study had two conditions, where participants recalled an experience of racial discrimination or an experience of engaging in a leisurely activity. With these two conditions, we can determine whether recalling an experience of racial discrimination is associated with negative outcomes, compared to the leisure recall condition. In addition, previous research shows that racialized individuals who have experienced racial discrimination face negative consequences in their physical and mental health (Paradies, 2006). Specifically, research has shown that racial discrimination is associated with feelings of depression (Flores et al., 2008; Madubata et al., 2018) and that feelings of learned helplessness may explain why racial discrimination is associated with more feelings of depression (Madubata et al., 2018). In this study that you just participated in, we seek to replicate those findings in a more diverse sample (i.e., racialized Canadian university students) while also investigating whether this explanation is present in those who have low general self-efficacy. In other words, if you believe that you are unable to handle difficult situations such as situations of racial discrimination, would feelings of learned helplessness explain why your recall of racial discrimination is associated with more feelings of depression? These findings will contribute to the existing research on the negative consequences of racial discrimination as well as determine when a racialized individual may experience learned helplessness and depression when thinking about an experience of racial discrimination.

If any of the materials in this study reminded you of unpleasant events and brought up unpleasant feelings that you would like to discuss, you may contact Student Counselling, Health & Well-being (SCHW) at York University which provides confidential counseling about personal issues on an individual basis. You can contact SCHW by telephone at (416) 736-5297 or visit their website (<https://counselling.students.yorku.ca/>) for more information.

We would ask you to maintain confidentiality about the purpose of the experiment since any pre-knowledge of the purpose will bias the data for that person and thus will detract from the validity of the research findings.

We are most grateful to you for taking the time to participate in this important research, which will contribute to knowledge about how people react during difficult economic times.

If you have any questions or concerns about this research, please feel free to contact Naomi Phung (Master's Thesis Researcher) at nphung@yorku.ca or Dr. Esther Greenglass (Project Supervisor) at estherg@yorku.ca. Thank you.

References

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