

**The Influence of Rejection Sensitivity on Perceiving Racial Microaggressions and Anxiety  
Among South Asian Students**

**by**

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**A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Science  
(Psychology)  
in the University of Michigan-Dearborn  
2022**

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## **Acknowledgements**

I would like to acknowledge and thank those without whom this project would not have been possible. Thank you to Dr. McAuslan for your never-ending patience and guidance throughout this study. Without your support and expertise, this project would not have come to fruition. I would also like to thank my co-chair, Dr. Hymes, for his invaluable input, encouragement, and knowledge. Both of you have played a vital role in developing my academic and research capabilities. Additionally thank you to the entirety of the M.S Clinical Health Psychology faculty and my fellow cohort members, without you this journey would not have been possible nor as entertaining. Finally, thank you to my family and friends for encouraging me, guiding me, and believing in me. Your unconditional support is truly appreciated and will never go unnoticed.

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## **Abstract**

Past research has shown that three in four people of color experience discrimination within their daily lives. However, despite the well-known link between racial microaggressions and mental health, little is known about the impact of microaggressions on South Asian students (Beharry & Crozier, 2008; Ogunyemi et al., 2020; Torres-Harding et al., 2020; Wong-Padoongpatt et al., 2020). This study sought to examine the relationships between previously experienced discrimination, rejection sensitivity, and emotional/physiological reactions among 119 post-secondary South Asian Americans using a two-part longitudinal design. Participants completed self-report measures (rejection sensitivity, previous experience with discrimination, mood). Participants also recorded their heartrate via smartwatches prior to and after viewing a compilation of videos clips depicting discriminatory or neutral interactions with South Asians within popular shows/movies. An independent sample t-test demonstrated no significant differences between the intervention and control groups. However, correlation and mediation analysis revealed small to moderate associations among discrimination, rejection sensitivity, race centrality, mood, and physiological responses to microaggressions. Race centrality did not moderate the relationships between any of the variables in the model. Findings from this study suggest important relationships between previous discriminatory experiences and the emotional/physiological responses to a situation portraying racial microaggressions among South Asian Americans. Information from this study may help to inform strategies to mitigate distress associated with racial microaggression among South Asian American students and help increase awareness among post secondary institutes.



## Chapter I

### Introduction

Individuals of Asian descent are a growing minority group within North America as families immigrate with the hopes of improving quality of life (Bakhtiari et al, 2018; Beharry & Crozier, 2008; Sharma et al., 2020). Individuals of Asian ethnicity represent 5.9% and 17.7% of the total population in the United States of America (U.S.) in 2019 and Canada in 2016, respectively (Statistics Canada, 2020; United States Census Bureau, 2019). The total South Asian population in 2019 in the U.S. was estimated to be 5.4 million (SAALT, 2019). In 2016 the number of Canadians identifying as South Asian or of South Asian origin were approximately 3.9 million (Statistics Canada, 2019). Despite their growing population, studies inadvertently neglect intracultural diversity among the Asian population. South Asians (SAs), a subgroup within the Asian population, are individuals typically hailing from India, Pakistan, Bangladesh, Sri Lanka, and Nepal (Tummala-Narra et al., 2012). The SA population is often depicted as homogenous even though the group composition includes a variety of religious, ethnic, and linguistic individuals (Beharry & Crozier, 2008; Poolokasingham et al., 2014).

### Experience of Discrimination Against South Asians

The *model minority theory*, first coined by William Petersen in 1966, depicts individuals of Asian descent as industrious and accomplished minorities who have overcome racism and successfully integrated within American society (Watson & Cuban, 2003). The model minority theory is often promoted in the media depicting Asian Americans as a representation of the “American Dream” compared to other people of color (POC) whom the media would connect

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with social problems (Watson & Cuban, 2003). Because SAs are perceived as being a model minority, the negative discriminatory experiences they face are often diminished (Kaduvettoor-Davidson & Inman, 2013). This is possibly because the stereotype of being a “model minority” emphasizes success while minimizing issues such as discrimination, ethnic harassment, and racial profiling (Kaduvettoor-Davidson & Inman, 2013). Despite having the reputation of being a model minority, Asian Americans are predicted to experience the same amount of discrimination as other minorities although they are more likely to experience interpersonal rather than institutional discrimination (Chan & Mendoza-Denton, 2008).

Experiences of racial discrimination against SAs may potentially differ depending on geographic location as well. For example, discrimination within the U.S. was observed as early as 1907 with the passing of exclusionary laws which officially denied Indians into the country along with the Asian Exclusion Act (1924) which denied SA entry (Kaduvettoor-Davidson & Inman, 2013). Institutional and personal discrimination were frequently experienced post the 1965 influx of immigration, prior to which SA individuals encountered restrictions for land ownership, marriage, and voting (Kaduvettoor-Davidson & Inman, 2013). Hate crimes and verbal and physical abuse have been reported as well. For example, the “Dot Busters,” a hate group in New Jersey/New York targeted the Hindu community whom they perceived as foreign and a threat to the U.S. economy (Inman et al., 2015). Individuals within the SA population were often perceived as terrorists post 9/11 and deprived of their constitutional rights as U.S. citizens resulting in the vandalization of religious institutions, racial profiling at airports, deportation, and murder (Kaduvettoor-Davidson & Inman, 2013). The U.S. Department of Justice reported an increase in all police-reported hate crimes motivated by race/ethnicity/ancestry, attributing 61.9% of single-basis incidents to race/ethnicity/ancestry, 4.4% of which were of anti-Asian biases

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(U.S. Department of Justice, 2020). Similarly, Statistics Canada (2020) indicated an increase in police-reported hate crime against the Asian population; 62% of cases were motivated by race and/or ethnicity, with 21% pertaining to hate crime against East/Southeast Asian, SAs, Arab/West Asians.

Many Canadians will deny the presence of racism within the country due to liberal multicultural policies which are thought to foster cultural diversity. The official multicultural policy, adopted in 1971, accentuated the value of cultural diversity and advocated for equality (Housmand et al., 2014). Despite these liberal multicultural policies, racism is thought to be common within Canada, particularly within universities (Housmand et al., 2014). Although individuals may not experience overt pressures to assimilate, it has been proposed that the liberal multicultural policies depict a pseudo-tolerance for diversity (Beharry & Crozier, 2008; Housmand et al., 2014). Racism is observed in both the U.S. and Canada. However, the U.S. is often characterized as racist as compared to Canada (Housmand et al., 2014). And many Canadians deny the presence of racism or depict it as something that happened solely in the past (Gulliver, 2018; Housmand et al., 2014). Although Canada is often depicted as tolerating diversity and valuing multiculturalism, a fact that is advocated by the official multicultural policy, racism is still thought to be common within Canada (Gulliver, 2018; Housmand et al., 2014). It is expected that racial microaggressions may be a common experience for Canadian SAs and more dominant compared to the explicit and overt forms of racism (Gulliver, 2018; Housmand et al., 2014).

Discrimination towards racial minorities, is often depicted to manifest overtly through blatant physical violence or unjust treatment (Lui, 2020). However, Lui (2020) suggests that microaggressions differ from overt discrimination as they occur much more frequently and place

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a significant psychological burden on recipients (Lui, 2020). Compared to microaggressions, which are considered to stem from unconscious racism, overt discrimination is rooted in intentional and explicit prejudice (Lui, 2020). Based on differential experiences with discrimination, racial microaggressions, and exposure to views regarding diversity and multiculturalism, participant ratings of microaggressions are expected to differ depending on their country of residence. It is hypothesized that Canadian students will be more likely to label an interaction as a racial microaggression as they may be more familiar with subtle forms of racism compared to American students as racial microaggressions may be more salient in Canada due to the emphasis placed on cultural diversity and citizen equality (Houshmand et al., 2014).

### **Post-Secondary Students**

Transitioning to post-secondary education can be stressful for all young adults. The possibility of experiencing mental health issues such as anxiety and/or depression can impair daily functioning and has been indicated to occur more often for students of color due to the experience of discrimination (Robinson-Perez, et al., 2019). Studies indicate that the experience of racial microaggressions from faculty and other peers is associated with social, academic, and emotional challenges for students of color (Samuel, 2005; Robinson-Perez et al., 2019). With the increasing diversity found among the student body in academia, findings by Solórzano and colleagues (2000; as cited by Ogunyemi et al., 2020) suggest that subtle microaggressions were more likely to be present within educational institutes compared to overt racism. Indeed, exposure to a racially hostile campus was considered to be depleting for students of color and increased their risk of stress, depression, binge-drinking, and in some cases contributed to Post-Traumatic Stress Disorder (PTSD) symptoms (Ogunyemi et al., 2020). The experience of racial

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discrimination among students results in a restrictive environment which hinders the interactions students of color have with faculty, staff, and peers, which can lead to the impediment of social and intellectual development and can potentially result in students leaving their education (Samuel, 2005).

### **Racial Microaggressions**

Racial interactions are often thought to contain overtly conscious forms of discrimination which divide society and generate disparities among majority and minority racial groups (Sue et al., 2007). However, the nature of racism has shifted to a more modern and subtle form that is referred to as microaggressions, a term initially coined by Pierce and colleagues in 1970, depicting the ambiguous, and often, hard to identify forms of discrimination (Sue et al., 2007). Microaggressions may be directed towards any marginalized groups including but not limited to gender, sexual orientation, or race (Lui & Quezada, 2019). Racial microaggressions are characterized as brief, everyday exchanges which communicate hostile, offensive, or derogatory messages, whether intentional or not, directed towards individuals belonging to a racial minority group (Ogunyemi et al., 2020; Torres-Harding et al., 2020). Microaggressions may be verbal, behavioral, and/or environmental insults and slights which often result in the marginalized individual experiencing psychological and physiological distress with a negative effect on social well-being (Poolokasingham et al., 2014; Sue et al., 2007).

Sue and colleagues (2007) conceptualized microaggressions into three core categories depicting the different types experienced by individuals belonging to a marginalized social group: microinsults, microinvalidations, and microassaults. *Microinsults* are characterized as nonverbal and verbal communication that is discriminatory, rude, or insensitive towards POC (Sue et al., 2007). Microinsults consist of subtle slights which belittle an individual's religion,

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culture, or heritage, such as implying an individual's acceptance into university was part of the diversity quota (Lui & Quezada; Sue et al., 2007). *Microinvalidations* are defined as nonverbal and verbal communication which dismisses, marginalizes, or nullifies the realities, contributions, experiences, feelings, and intelligence of POC; for example, insisting that one does not see color diminishes the struggles that POC experience (Sue et al., 2007). Compared to the obscure nature of microinsults and microinvalidations, *microassaults* bear more of a resemblance to the traditional form of racism and are characterized as explicit and overtly hostile nonverbal and verbal communication against POC (Lui & Quezada, 2019; Torres-Harding, 2020).

Microassaults consist of conscious and deliberate actions towards POC, for instance, using derogatory racial slurs (Sue et al., 2007).

### **Impact of Microaggressions on Health**

Many studies have examined the impact of microaggressions on racially and ethnically diverse students at post-secondary and higher education institutes with researchers focusing on the link between racial microaggressions and mental health (Ogunyemi et al., 2020). The subtle and seemingly innocuous nature of microaggressions have resulted in the misconception that the effects are not as detrimental as those experienced following overt acts of racism which contribute to feelings of depression, stress, or anger (Keels et al., 2017). However, studies indicate that the cumulative effects of microaggressions take a significant psychological and physiological toll on well-being of POC (Keels et al., 2017; Torres-Harding et al., 2020). Individuals faced with these ambiguous situations undergo a process as they must first determine whether the incident occurred, if the perpetrator consciously behaved in a discriminatory manner, and then decide what a sufficient response would entail (Keels et al., 2017). This framework suggests that microaggressions may actually have stronger effects than overt racial

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discrimination as individuals are affected even if they do not consciously recognize the fact that they have been a victim of a microaggression (Keels et al., 2017). Experiencing racial microaggressions results in an expenditure of significant emotional and cognitive energy and can lead to an increase in perceived stress which negatively impacts the mental and physical health of minority students (Keels et al., 2017; Torres-Harding, 2020).

### **Anxiety/ Perceived Stress**

The minority stress theory states that the prejudice and discrimination faced by individuals of racially marginalized groups can result in elevated levels of stress (Wong-Padoongpatt et al., 2020). Studies researching the impact of racial microaggressions in higher education suggest that college students of ethnic minority status tend to experience higher levels of stress, possibly because students find these situations overwhelming or feel they do not possess the adequate resources necessary to cope with their environmental demands. Additionally, it is likely that the first experience of microaggression within the academic institution will serve as an indicator for future possibilities of racial threats, unfair evaluations such as biased grading, and diminished opportunities, which will contribute to the perceived stress a student may experience (Torres-Harding et al., 2020). Individuals experiencing minority stress are more likely to also be experiencing *acculturative stress*, a key factor in the impact of discrimination on mental health among minority populations (Tineo et al., 2021). Acculturative stress signifies the emotional and mental challenges stemming from acculturation into a new or different culture. Prior research indicates that individuals born to immigrant families may experience difficulty being accepted as full members of society, with many SAs being perceived as foreigners despite being born or raised in America (Kaduvetoor-Davidson & Inman, 2013; Tineo et al., 2021). Higher levels of acculturative stress are predictive of internalizing symptoms

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associated with higher levels of anxiety, alienation possibly due to a decreased sense of belonging and diminishing participation in campus life, identity confusion and increased levels of suicidality (Oguyemi et al., 2020; Tineo et al., 2021).

As defined by the DSM-5, anxiety disorders are characterized by the shared feature of excessive *fear* (the emotional response to a real or perceived imminent threat), *anxiety* (anticipation of future threat), and behavioral disturbances (American Psychiatric Association, 2013). Although states of fear and anxiety overlap, they are different in nature; fear is related to thoughts of immediate danger and often associated with surges of autonomic arousal required for a “fight or flight” response whereas anxiety is related to cautious and avoidant behaviors, often associated with vigilance and preparation for future danger.

In relationship to discrimination among youth, depression appears to be the most widely studied outcome whereas only a few studies examine anxiety, despite the fact that an exchange or situation perceived as discriminatory can result in psychological stress responses (Clark et al., 1999; Stein et al., 2019). These responses include but are not limited to shame, anger, and anxiety which can impact physiological responses within the body (Clark et al., 1999; Stein et al., 2019). Additionally, discrimination is proposed to be a stressor strongly related to trait and state anxiety (Hwang & Goto, 2009).

Although the research on Asian American college students in relation to the impact of perceived racial discrimination appears to be limited, general patterns have emerged in studies that showcase similarities to findings on African Americans (Hwang & Goto, 2009). A study conducted by Hwang and Goto (2009) assessed the impact of perceived racial discrimination on the mental health of Asian and Latino American college students. This study reported higher risk for psychological distress among younger college students, particularly state anxiety, which is



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characterized as transient feelings of worry, nervousness, tension, and anxiety traits. It is suggested that the recollection of previous negative events may function as a prompt for individuals, thus resulting in the increase of present levels of anxiety.

Higher levels of intrapersonal socioemotional maladjustment have been reported among Asian American college students along with higher levels of depression and social anxiety compared to European American students (Chan & Mendoza-Denton, 2008). In a study conducted by Mendoza-Denton and colleagues (2002), individuals who rated high in rejection sensitivity reported greater levels of anxiety compared to those who reported lower levels of rejection sensitivity; this is possibly due to fear of behaving in a manner that will be judged negatively by peers.

### **Physiological Effect**

An individual's primary appraisal of a situation will determine whether the situation is irrelevant, harmless, positive, or stressful (Ogunyemi et al., 2020). A situation perceived as discriminatory may result in various psychological stress responses (i.e., shame, anger, anxiety) which can impact physiological responses within the body (Clark et al., 1999). The minority stress theory states that the prejudice and discrimination faced by individuals of racially marginalized groups can result in elevated levels of stress which are often associated with a surge of the cardiovascular system, commonly resulting in an increased heart rate and blood pressure, decreased heart rate variability, and a risk for cardiovascular disease (Clark et al., 1999; Hoggard et al., 2015; Wong-Padoongpatt et al., 2020). Despite the association of racial discrimination with negative health outcomes, there is little understanding of the mechanisms through which racial discrimination influences the changes in physiological systems and health outcomes (Hoggard et al., 2015).

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Hoggard and colleagues (2015) examined the cardiac responses of female African Americans college students to actual racial discrimination involving a European American or African American perpetrator over a two-day period. Cardiac response was assessed by focusing on heart rate variability (HRV) and heart rate (HR). Results indicated a lower HRV and higher HR on day two for participants who experienced intergroup discrimination. It is possible that similar results would be found in other minority groups, such as SAs.

### **Rejection Sensitivity**

Rejection sensitivity refers to an individual's expectation or fear of potential rejection from others due to a particular bias (i.e., racial, sexual orientation, status, gender; Mellin, 2008). Repeated experiences communicating rejection rather than acceptance, such as experiences of prejudice, discrimination, or exclusion based on social membership, can produce anxious expectations regarding the occurrence of future status-based rejection (Mendoza-Denton et al., 2002). An individual's perception of a situation as a microaggression will influence how they experience and appraise such exchanges; therefore, although individuals may experience the same event, possibly at the same time, their responses may differ (Mellin, 2008). Individuals may not appraise discrimination in the same way, possibly due to dispositional characteristics such as gender, rejection sensitivity, and racial identity, therefore the impact of these incidences varies among individuals (McCullough et al., 2021; Wong-Padoongpatt et al., 2020). Various factors impact an individual's cognitive and emotional response to these experiences. These include expectations regarding the exchange, the content or the specific type of microaggression, location of the occurrence, or the perpetrator (i.e., role differences; Torres-Harding et al., 2020).

Rejection sensitivity is conceptualized as a defensive motivational system allowing individuals to provide a quick response to a potential rejection associated with an environmental

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stimulus. However, affective and behavioral overreactions can be a consequence, which results in hypervigilance during ambiguous situations causing individuals to readily perceive intentional rejection and potentially respond with anger, hostility, withdrawal, or other maladaptive coping to handle the exchange (Downey & Feldman, 1996; Henson et al., 2013; Mellin, 2008). In a study conducted by Henson and colleagues (2013), students with higher hypersensitivity or rejection sensitivity were more likely to partake in emotional mechanisms such as rumination. Individuals tended to think about the situation over an extended period which subsequently prolonged the emotional and cognitive reactions associated with the experiences, thus leading to higher risk for depression, anxiety, anger, and stress (Downey & Feldman, 1996; Henson et al., 2013 Mellin, 2008).

### **Racial Centrality**

Racial identity is a dispositional factor which is theorized to impact the way an individual appraises discrimination (McCullough et al., 2021). Racial centrality, the notion of how important one's race is to personal identity, is thought to predict an individual's experience of racial discrimination (McCullough et al., 2021; Roberts et al., 2017). Individuals with greater in-group centrality are theorized to have amplified sensitivity while interacting with out-group members, suggesting increased vulnerability to adverse psychological outcomes (McCullough et al., 2021). Individuals endorsing high racial centrality are more likely to perceive a racial bias in an ambiguous incident, possibly because in-group threats are more likely to be perceived as threats directed to oneself (McCullough et al., 2021; Roberts et al., 2017).

## **Chapter II**

### **Present Study**

Although many minorities encounter racial microaggressions, with research indicating every three out of four POC experience discrimination in their daily lives, an individual's cognitive and emotional response may differ depending on the situation, as well as their perception of the threat (Torres-Harding et al., 2020; Wong-Padoongpatt et al., 2020). Despite research focusing on the link between racial microaggressions and mental health, with multiple studies examining the impact of microaggression on racially and ethnically diverse students at institutes of post-secondary and higher education, little is known about the impact of microaggressions on South Asian students (Beharry & Crozier, 2008; Ogunyemi et al., 2020).

Considering the psychological and physiological distress associated with experiencing microaggressions and the growing diversity of the student body in higher education (Ogunyemi et al., 2020), the present study examines the relationships between previous experience with discrimination, rejection sensitivity, microaggressions and emotional/physiological reactions among South Asian students. The study used a longitudinal design with self-report questionnaires to analyze information pertaining to participants' previous experience with discrimination and level of rejection sensitivity. Data pertaining to participant's mood and heart rate were acquired through self-report prior to and after viewing microaggressions portrayed in media clips. The following is hypothesized:

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1. Greater past experiences with discrimination will relate to more rejection sensitivity.
2. Having a stronger racial identity will relate to more rejection sensitivity and perceiving the clips as microaggressions.
3. Past experience with discrimination will be positively associated with identifying microaggression in the intervention videos.
4. Rejection sensitivity will be positively associated with identifying microaggressions in the intervention videos.
5. Participants with higher rejection sensitivity will experience greater negative affect, less positive affect, and showcase a change in heart rate when they view the intervention videos.
6. The relationship between experience with discrimination and emotional/physiological responses to intervention videos (PANAS and heart rate) will be serially mediated through rejection sensitivity and the tendency to view the videos as microaggressions. Racial identity will be considered as a moderator of these relationships (refer to Figure 1).
7. The similarities and differences between U.S. and Canadian samples, as well as between males and females will be considered.

## Chapter III

### Method

#### Participants

Participants were 119 students recruited from Amazon Mechanical Turk (MTurk). Participants ranged in age from 19 years old to 31 years old ( $M=20.08$ ;  $SD=3.043$ ); 65 self-identified as males (54.6%), 52 as females (43.7%), and 2 as non-binary/third gender (1.7%). Participants were comprised of individuals who self-identified as South Asian (52.9% Indian, 12.6% Pakistani, 10.1% Bangladeshi, 12.6% Sri Lankan, 7.6% Nepali, and 5.9% Other) with the majority born in the U.S (95.0%). During data collection, it was determined that MTurk was not effective in acquiring Canadian South Asian participants and based on these results, the Canadian participants were eliminated from the final sample and data analysis. Participants were post-secondary students attending university (82.4%), community college (16.0%), trade school (0.8%), and graduate school (0.8%). The majority of participants reported having an Apple Watch (68.1%) with the remainder being Fitbit users (31.9%).

#### Measures

##### Demographics

In addition to the eligibility questions (i.e., born or raised in North America, attending post-secondary and type or model of Apple Watch/Fitbit), a demographic questionnaire was administered to assess age, gender, specific ethnic background (i.e., Indian, Pakistani, etc.), and generation status (ex. first-, second-generation).

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### **Previous Discriminatory Experience (DISC)**

The Everyday Discrimination Scale was utilized to assess previous discriminatory experiences (Kershaw et al., 2016). The self-report questionnaire consists of nine items showcasing daily minor incidents of unfair treatment. Participants responded to each item using a six-point scale ranging from *almost every day* (1) to *never* (6) to indicate the frequency of each event in their daily lives. An example item includes “You receive poorer service than other people at restaurants or stores.” Scores are obtained by summing responses of the nine items with higher scores indicating a higher frequency of everyday discrimination, the range is indicated to be between 9 and 54 (Kershaw et al., 2016). A high alpha reliability is indicated for this version of the scale ( $\alpha = 0.88$ ; Kershaw et al., 2016). Alpha in the present study was .90.

### **Rejection Sensitivity (RS)**

The Status-based Rejection Sensitivity for Asian Americans (RS-A), modeled after the RS-measure for African Americans (Mendoza-Denton et al., 2002) was utilized to assess status-based rejection sensitivity among participants (Chan & Mendoza-Denton, 2008). The self-report questionnaire consists of 11 items describing situations in which Asian American students may experience discrimination due to their ethnicity/race. Participants responded to each item using a six-point scale ranging from *unconcerned* (1) to *very concerned* (6) to indicate their concern or anxiety regarding the possible rejection. A second rating on another six-point scale was used to indicate the likelihood of the other person engaging in the rejecting manner due to the individual’s race, with responses ranging from *very unlikely* (1) to *very likely* (6). An example item includes “You are at a party, and you are introduced to a friend of a friend, who proceeds to ask you where you’re from.” Through a technical error, one of the situations was not included in the online survey, therefore the resulting scale was 10 items describing situations which Asian

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American students may experience discrimination due to their ethnicity/race. Scores for each situation are obtained by multiplying the degree of anxiety regarding the outcome of the request with the expected likelihood of rejection. The scores for each situation are then averaged to generate the total RS-A score (Chan & Mendoza-Denton, 2008). A high internal reliability is indicated for the RS-A ( $\alpha = .83$ ; Chan & Mendoza-Denton, 2008). Alpha in the present study was .94

### **Heart Rate (HR)**

Physiological response to the videos was determined by measuring heart rate. Change in heart rate was used to infer increased anxiety following the microaggression video. Participants used their Apple Watches or Fitbits to measure their heart rate prior to and after viewing the media clips to assess any change in heart rate. A literary review conducted by Nelson and colleagues (2020) suggests that wrist-worn wearable devices such as the Apple Watch and Fitbit, detect heart rate with acceptable accuracy, with Apple Watches providing a slightly more accurate reading compared to Fitbits. A similar finding was made in a study conducted by Dooley and colleagues (2017) estimating the accuracy of self-monitoring heart rate and physical activities; Apple Watches were indicated to have the strongest association with the Polar heart rate monitor ( $r = .59-.99$ ) followed by Fitbit ( $r = .16-.99$ ). The change in heart rate was calculated by the difference between heart rate after watching the video and the participant's baseline heart rate.

**Apple Watch.** The Apple Watch incorporates an optical heart sensor which utilizes photoplethysmography to provide estimates of heart rate. The Apple Watch pairs green LED light (absorbed by blood) with light-sensitive photodiodes which allow for the detection of blood



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flow through the wrist. The optical heart sensor will flash LED lights hundreds of times per second, thus allowing the Apple Watch to obtain an estimate for heart rate (Apple Inc, 2021).

**Instructions.** Ensure the Apple Watch is worn comfortably with the back touching your skin to allow for a more accurate reading. Use the Heart Rate app on the Apple Watch and place finger on the Digital Crown to obtain an estimate for their heart rate (Apple Inc, 2021).

**Fitbit.** The Fitbit utilizes photoplethysmography to provide estimates of heart rate. A sensor on the back of the watch flashes LED light onto skin while photodiodes (light detectors) measure the amount of light absorbed which represents each heartbeat thus providing a measurement of heart rate (Fitbit LLC, 2021).

**Instructions.** Ensure the Fitbit is worn comfortably with the back touching your skin to allow for a more accurate reading. Swipe up on the clock face to view current heart rate along with resting heart rate.

### **Mood**

The Positive and Negative Affect Schedule (PANAS) was utilized to assess affect prior to and after viewing the media clips (Watson et al., 1998). The measure consists of 10 items measuring positive affect (PA) and 10 items measuring negative affect (NA) with responses rated on a five-point scale, ranging from *very slightly or not at all* (1) to *extremely* (5). Higher scores were indicative of higher positive or negative affect, respectively. The standardization of the PANAS with a sample of undergraduates achieved a high alpha reliability for PA ( $\alpha=.86-.90$ ) and NA ( $\alpha=.84-.87$ ), with discriminant values indicating quasi-independence (Watson et al., 1998). Alpha in the present study was .92 for PA and .94 for NA.

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### **Race Centrality (RC)**

The In-Group Identification Measure was utilized to assess participant's emotions about, and orientation to, intergroup relations (Leach et al., 2008). The measure consists of 14 items measuring five components of in-group identification: individual self-stereotyping (2 items), in-group homogeneity (2 items), satisfaction (4 items), solidarity (3 items), and centrality (3 items). Responses are rated on a seven-point scale, ranging from *strongly disagree* (1) to *strongly agree* (7). Participants were asked to respond to items in relation to their identity as South Asians, an example item includes "I often think about the fact that I am South Asian" (centrality). The scales are indicated to be reliable across group identities and demonstrate concurrent, discriminant, and predictive validity (Leach et al., 2008). A previous study assessing Asian Americans found a high alpha reliability for the Solidarity ( $\alpha=.88$ ), Satisfaction ( $\alpha=.85$ ), and Centrality ( $\alpha=.87$ ) subscale scores (McCullough et al., 2021). For the purpose of this study, only the Centrality subscale was used rather than the total scale. It should be noted that the terms racial identity and racial centrality were used interchangeably in this study. Scores are obtained by summing the three items related to race centrality, with higher scores indicating a stronger racial centrality. Alpha in the present study for race centrality was .56.

### **Post Clip Reaction Questionnaire (PCQ)**

A five-point scale was used to ask questions assessing participant's attitudes towards the clips, refer to Appendix A. An example item includes "On a scale of one to five, with (1) *being not at all* and (5) *being very* rate whether the media clip depicts racial microaggression." Participants were also able to answer an open-ended question to explain their reaction. The item regarding microaggression (PCQ8) was used for the purpose of analyses.

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## **Materials**

### **Diaphragmatic Breathing**

Participants were provided with the following instructions to partake in diaphragmatic breathing for one minute to obtain a baseline heartrate. The instructions were obtained from a study conducted by Russell and colleagues (2014) pertaining to diaphragmatic breathing:

1. Please find a comfortable position with your head centered and supported. Relax your shoulders and sit with your knees and feet apart.
2. Close your eyes, smooth your forehead, and relax your mouth to ensure you are not clenching your jaw.
3. Place your right hand on top of your stomach, right below the ribcage. Release air from your body by exhaling in a complete and relaxed manner without controlling or forcing air from your body.
4. When you are ready, take your next breath. Ensure your stomach is gently rising as you inhale, you may feel it pushing against your hand. Count to three while you breath in.
5. Release your muscles and let your stomach fall as you exhale. Count to three as you release your breath in a relaxed manner.

Repeat the cycle for one minute and record the baseline heart as displayed on your Apple Watch or Fitbit.

### **Microaggression Videos**

The microaggression video is a montage of four media clips from popular TV shows and/or movies displaying various racial microaggressions, refer to Appendix B1. The duration of the video is 3 minutes and 24 seconds and the average amount of time for each clip is approximately 35 seconds.

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### **Neutral Videos**

The neutral video is a montage of clips from the same popular TV shows and/or movies without any racial microaggressions (or any type of interaction that may cause feelings of discomfort to participants). See Appendix B2. The duration of the video is 3 minutes and 52 seconds and the average amount of time for each clip is approximately 52 seconds.

### **Procedure**

Participants were recruited via the online platform, MTurk, and completed a screening questionnaire on Qualtrics to determine eligibility and suitability based on the inclusion/exclusion criteria listed above (i.e., South Asian, living in the U.S. or Canada, between the ages of 18-29). Eligible participants were directed to an informed consent form outlining their rights as research participants and the purpose of the study.

Participants were required to create a uniqueID during Time 1 (T1) of the study and were notified this was the first part of a two-part study and they may be invited to participate in the second part. During T1 of the study, participants answered demographic questions pertaining to age, cultural/national background, birthplace/years in North America, and political stance to assess for degree of social awareness. The participants also completed measures of RS-A and The Everyday Discrimination Scale to obtain their level of rejection sensitivity and details regarding their previous experience with discrimination, respectively. The average time for approved participants for the T1 survey ( $n=375$ ) was 18 minutes and 85 seconds and participants were compensated \$1.00.

Participants who were successfully screened and completed T1 of the study were contacted approximately one week later through MTurk to invite participation in Time 2 (T2) of the study. Participants were provided with an informed consent for T2 of the study outlining their

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rights as research participants and the purpose of the study. Participants were provided with instructions to sit quietly in a room with little to no distractions to complete a brief diaphragmatic breathing exercise. Participants were instructed to measure and report their baseline heart rate using their Apple Watch/Fitbit by following the instructions listed above and completed the PANAS. Participants were then randomly assigned to one of two groups: the majority were assigned to the intervention group ( $n=87$ ) and the remaining to the control group ( $n=32$ ).

Participants were directed to a YouTube video which was embedded in the Qualtrics survey to view the clip. Participants in the intervention group viewed the microaggression video and those within the control group viewed the neutral video. Following the clip, participants measured and reported their heart rate and completed the PANAS a second time. Participants then responded to the post clip reaction questionnaire to assess their attitudes towards the media clips. The duration of time for T2 of the study was approximately 12 minutes and 21 seconds. Participants were compensated \$2.00.

## Chapter IV

### Results

The data obtained from Qualtrics were analyzed using IBM SPSS Statistics to ensure participants met the eligibility criteria. The data were cleaned and checked for missing items, outliers, and inconsistencies. The resulting data from T1 and T2 were merged based on the participant's uniqueIDs. Analyses revealed a total of 119 participants had data across both time points. Basic descriptive and frequency statistics for the demographic information are presented in Table 1.

Independent sample t-tests were completed to compare the tendency to label the video a microaggression and the emotional/physiological reactions (change in PA, change in NA, and HR) of participants who viewed the microaggression video ( $n=87$ ) and the neutral video ( $n=32$ ). It was hypothesized that participants who viewed the microaggression video would have a greater tendency to label the video as a microaggression, a lower PA score, higher NA score, and an increased change in HR. However, no significant differences were noted among the two study groups, refer to Table 2.

#### Relationships Between Variables

Next basic descriptive statistics and correlations were completed for the two study groups separately (neutral video,  $n = 32$ ; microaggression video,  $n = 87$ ). Means, standard deviations, and Pearson's correlation coefficients for the 32 participants in the control condition for all study variables are provided in Table 3. There was a marginally positive relationship between

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discrimination and rejection sensitivity, such that individuals who reported higher levels of discrimination tended to report higher levels of rejection sensitivity. Racial identity was not significantly associated with previous discrimination nor with identifying a microaggression. Past discrimination was not significantly associated with labeling a microaggression. Rejection sensitivity was significantly associated with labeling a microaggression, such that individuals who reported higher levels of rejection sensitivity tended to label the interaction as a microaggression. There was a significant association between rejection sensitivity and change in HR, such that individuals who reported higher rejection sensitivity also reported a greater change in HR after viewing clips. As predicted, there was not a significant association between rejection sensitivity and PA and NA.

Means, standard deviations, and Pearson's correlation coefficients for 87 participants in the microaggression video for all of the study variables are provided in Table 4. As hypothesized, there was a large positive relationship between discrimination and rejection sensitivity, such that individuals who reported higher levels of discrimination tended to have significantly higher levels of rejection sensitivity. Our second hypothesis predicted that a stronger racial identity will be associated with increased rejection sensitivity and perceiving the clips as racial microaggressions. Contrary to predictions, racial identity was not significantly related to rejection sensitivity. However, higher scores on the race centrality scale were moderately positively correlated with perceiving the clips as a microaggression, such that individuals who reported a stronger racial identity tended to label the clips as a racial microaggression to a greater degree. As hypothesized, there was a marginally positive correlation between higher levels of discrimination and the tendency to label the clips as a racial

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microaggression. Contrary to predictions, higher levels of rejection sensitivity were not significantly associated with perceiving racial microaggressions. Refer to Table 4.

The fifth hypothesis posited that participants with higher rejection sensitivity will experience greater emotional/physiological change after viewing the videos with microaggressions. As indicated in Table 4, there were no significant associations between rejection sensitivity and change in HR, PA, or NA. There was a moderate negative relationship between perceiving racial microaggressions and change in PA, indicating that participants who perceived the situation to be a greater microaggression reported a decrease in PA. There was also a small positive correlation between perceiving microaggressions and change in NA such that participants who perceived the situation to be a greater microaggression reported an increase in NA. Contrary to predictions, participants who reported higher rejection sensitivity did not report significant change in HR, although the relationship was in the expected direction.

### **Initial Mediation Analysis**

The final analysis includes only the 87 participants who viewed the microaggression video and focused on considering whether the relationship between discrimination and the emotional/physiological responses to the video were serially mediated through rejection sensitivity and the tendency to label the video as a racial microaggression, as moderated by racial identity, see Figure 1.

Initially, a series of simple mediation analyses using Hayes' (2018) PROCESS macro Model 4, based on bootstrapping of 10,000 samples, was conducted to answer the following questions: Does rejection sensitivity mediate the relationship between previous experiences of discrimination and labeling microaggressions (MA)? Does labeling microaggressions mediate



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the relationship between rejection sensitivity and the emotional/physiological reactions (i.e., change in PA, NA, and HR)?

The initial analysis examined the possible mediating effect of rejection sensitivity on the relationship between previous experiences of discrimination and labeling the video as a MA. There was a significant direct effect from previous experience of discrimination to rejection sensitivity ( $coeff=.34; se=.05; p < .001$ ) but the direct effect from discrimination to labeling the video as a MA was not significant ( $coeff=.15; se=.16; p=ns$ ). The direct effect from rejection sensitivity to labeling a MA was not significant ( $coeff=.24; se=.29; p=ns$ ). The effect of previous discrimination on labeling a MA was marginally partially mediated through rejection sensitivity ( $coeff=.23; se=.13; p=.07$ ), such that more experience with past discrimination was related to higher levels of rejection sensitivity which related to a marginally greater likelihood of labeling a situation as a MA.

The second analysis examined the possible mediation effect of labeling the video as a MA on the relationship between rejection sensitivity and change in heart rate. There was a significant direct effect from rejection sensitivity to labeling the video as a MA ( $coeff=.49; se=.23; p<.05$ ) but no significant direct effect from rejection sensitivity to change in heart rate ( $coeff= 1.61; se= 1.39; p= ns$ ). There was no significant direct effect from labeling a MA to change in heart rate ( $coeff=.97; se=.65; p= ns$ ). The effect of rejection sensitivity on change in heart rate was not mediated by labeling a MA ( $coeff=.2.09; se= 1.36; p= ns$ ).

Next, we considered the possible mediating effect of labeling the video as a MA on the relationship between rejection sensitivity and change in positive affect. As shown in Table 5, there was a marginally significant direct effect from rejection sensitivity to labeling a MA ( $coeff=.41; se=.23; p=.08$ ). There was a significant direct effect from rejection sensitivity to

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change in positive affect ( $coeff = .28$ ;  $se = .12$ ;  $p < .05$ ) and a significant direct effect from labeling the video as a MA to change in positive affect ( $coeff = -.25$ ;  $se = .06$ ;  $p < .001$ ), indicating higher levels of rejection sensitivity relates to an increase in positive affect, and greater tendency to label the video as a MA relates to a decrease in positive affect. However, labeling the video as a MA did not mediate the relationship between rejection sensitivity and change in positive affect ( $coeff = .18$ ;  $se = .13$ ;  $p = ns$ ).

Lastly, the possible mediating role of labeling a MA on the relationship between rejection sensitivity and change in negative affect was considered. There was a marginally significant direct effect from rejection sensitivity to labeling the video as a MA ( $coeff = .41$ ;  $se = .23$ ;  $p = .08$ ) but no significant effect from rejection sensitivity to change in negative affect ( $coeff = -.05$ ;  $se = .14$ ;  $p = ns$ ). There was a significant direct effect from labeling the video as a MA to change in negative affect ( $coeff = .13$ ;  $se = .06$ ;  $p < .05$ ), indicating that labeling the video as a MA relates to an increase in negative affect. However, labeling the video as a MA did not mediate the relationship between rejection sensitivity and change in negative affect ( $coeff = .01$ ;  $se = .14$ ;  $p = ns$ ).

### **Initial Moderation Analysis**

Next, a simple moderation analysis was conducted to examine whether racial centrality moderates the relationship between previous experiences of discrimination and rejection sensitivity, using Hayes' Model 1 with PROCESS. Higher racial centrality did not moderate the relationship between previous experiences of discrimination and rejection sensitivity ( $coeff = .01$ ;  $se = .05$ ;  $p = ns$ ).

### **Building Serial Mediation Models**

Based on the results above, rejection sensitivity and labeling the video as a MA were considered as serial mediators however racial centrality was not considered to be a potential moderator. Hayes' Model 6 in the PROCESS macro, based on bootstrapping of 10,000 samples, was conducted to assess whether rejection sensitivity and labeling the video as a MA were serial mediators of the relationship between previous experiences of discrimination and reaction to viewing the microaggression clips (i.e., change in positive affect, negative affect, and heart rate). The indirect effects of discrimination on emotional/physiological reactions through rejection sensitivity and labeling a microaggression along with the calculated 95% CI and standard error (SE) are presented in Table 5. The total effects of discrimination on emotional/physiological reactions through rejection sensitivity and labeling a MA with 95% Confidence Intervals (CI) and standard error (SE) are presented in Table 6. The full model initially focused on the relationship between previous discrimination and change in heart rate. The results indicate that this relationship was not significant and there does not appear to be evidence of serial mediation for change in heart rate (refer to Figure 2). Next, the analysis focused on the relationship between previous discrimination and change in positive affect. Results show that the relationship was not significant and there does not appear to be evidence of serial mediation for change for positive affect (refer to Figure 3). Lastly, the full model was run to examine the relationship between previous discrimination and change in negative affect. Results indicated that the relationship was not significant and there does not appear to be evidence of serial mediation of negative affect (refer to Figure 4).

## **Chapter V**

### **Discussion**

Despite studies examining the impact of microaggressions against racially and ethnically diverse post-secondary students, with a focus on the link between racial microaggressions and mental health, little is known about the impact of microaggressions on South Asian students (Beharry & Crozier, 2008; Ogynyemi et al., 2020). This study aimed to address this gap in the literature by examining the relationship between previous experiences of discrimination, racial centrality, rejection sensitivity, and emotional/physiological response among South Asian American post-secondary students.

Comparative analyses did not show significant differences in labeling a microaggression and the emotional/physiological changes between participants who viewed the video with microaggressions compared to those who viewed the neutral video. This is surprising given that the literature suggests cumulative effects of racial microaggressions significantly impact the physiological and psychological well-being of POC (Keels et al., 2017; Torres-Harding et al., 2020). Furthermore, previous research indicates that individuals who experience racial microaggressions are more likely to experience an increase in perceived stress due to the expenditure of emotional and cognitive energy (Keels et al., 2017; Torres-Harding, 2020). It is possible that the results from this study were not significant due to the limited statistical power of a small sample size. However, despite the lack of statistical significance, the relationships

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showed promising effect sizes, suggesting that differences between the conditions are worthy of continued examination in future research. Additionally, it is possible that a significant difference was not found between the two study groups because of the nature of the videos that were used. The videos depict scenes from popular comedy shows/movies and do not show personal experiences encountered by the participants; therefore, it may not have evoked a significant increase in negative affect, decrease in positive affect, and change in heart rate.

### **Correlational Findings for the Control Group**

Comparison of the correlational analyses showed mostly similar findings among the two study groups. Both groups showcased a positive correlation between previous discrimination and rejection sensitivity. Although the relationship was not statistically significant among participants in the control group ( $r(30)=.33; p=.06$ ), the relationship was marginally significant and in the expected direction. It is possible that the small sample size accounts for the lack of statistically significant findings. There was a significant association between rejection sensitivity and labeling the interaction as a microaggression ( $r(30)=.55; p<.01$ ) among the control group. Although participants within the control group viewed clips with no racial microaggressions (or any type of interaction that may cause feelings of discomfort to participants), individuals who reported higher levels of rejection sensitivity rated the neutral clips as microaggressions. This is consistent with current literature which shows that greater rejection sensitivity can result in hypervigilance and hypersensitivity thus causing individuals to readily perceive rejection (Downey & Feldman, 1996; Henson et al., 2013; Mellin, 2008). Additionally, for the control group a significant association was noted between rejection sensitivity and change in heart rate ( $r(30)=.35; p<.01$ ). Again, this may be related to the tendency for those with greater rejection sensitivity to perceive an ambiguous situation as discriminatory and have a greater of a

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physiological response (Clark, 1999; Downey & Feldman, 1996; Henson et al., 2013; Mellin, 2008).

### **Correlational Findings for the Intervention Group**

For those who viewed the microaggression video, there was a significant positive association between previous experience with discrimination and rejection sensitivity ( $r(85)=.61$ ;  $p < .001$ ). This is consistent with past literature in that individuals who experience repeated rejections, such as instances of prejudice or discrimination based on social membership, are likely to experience anxious expectations of future status-based rejection (Mendoza-Denton et al., 2002). Negative discriminatory experiences against South Asians are often diminished as they are perceived to be a “model minority” who have successfully integrated within Western society. This finding highlights the impact of previous discrimination on individual factors such as rejection sensitivity thus negating the misconception that South Asians have overcome racism (Kaduvettoor-Davidson & Inman, 2013; Watson & Cuban, 2003).

Contrary to predictions, there was not a significant relationship between previous experience with discrimination and perceiving microaggressions ( $r(84)= .20$ ;  $p=.07$ ). Although not statistically significant, this relationship was in the expected direction with those who had experienced discrimination being more likely to see a greater degree of microaggression in the video. Again, it is possible the small sample size may account for the lack of a statistically significant relationship. It is also possible that despite the growing research and acknowledgement of subtle forms of racism, the definition of racial microaggression is not commonly known among the public. Because the survey asked specifically if participants believed the video montage to depict a microaggression, it is possible participants may have been indicating the degree to which they thought the clip demonstrated overt discrimination rather

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than microaggressions. Secondly, other factors such as the participant's opinion of the perpetrator's intent may have played a role. According to past research, when limited information is provided to viewers regarding a perpetrator's ill intent, they are more likely to base judgments pertaining to an ambiguous situation on the psychological harm experienced by the victim (Lui et al., 2020). It is possible that the familiarity of the clips led participants to discount any ill-intent of the perpetrators. For example, when asked to provide additional information about their responses one participant stated "These are very funny clips, I love *The Office* and *Parks and Recreation*, and I really enjoyed the movie *Bend it like Beckham*. These scenes were taken completely out of the context of the films / TV shows, so someone unfamiliar with the characters on the show might not feel "in" on the joke." Additionally, another participant commented "I thought it was not that politically correct" however rated the degree of microaggression as "*a little bit*."

Furthermore, a mediation analysis indicated the effect of discrimination on perceiving microaggressions to be partially mediated through rejection sensitivity. This is supported by current literature demonstrating that repeated experiences of discrimination can result in hypervigilance during ambiguous situations causing individuals to readily perceive intentional rejection (Downey & Feldman, 1996; Henson et al., 2013; Mellin, 2008; Mendoza-Denton et al., 2002). Research has shown that various factors such as an individuals' expectation or the content of the exchange can impact their response to racially ambiguous situations (Torres-Harding et al., 2020).

It is important to consider the content of the videos that were used in this study as a possible explanation as to why our findings did not support predictions. It is likely that most of the participants were familiar with the TV show/movie content. Thus, they might associate the

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interactions that depicted microaggressions with entertainment rather than considering them discriminatory in nature. For example, in response to the video, one of the participants commented “I was in the mindset that it was tv clips meant for comedy not harm.” Another participant commented “They are TV shows who cares, COMEDIES!” Lastly, a participant who rated the video as “*a little bit*” of a microaggression commented “I thought about how the comedic situations were making fun of real life situations. I feel that most of the comedic situations do happen, but they are more awkward and embarrassing. I feel that in real life people may not be as forgiving as in these situations, so they would consider them to be more hurtful and racial.”

Contrary to predictions, there was not a significant association between racial centrality and rejection sensitivity ( $r(85) = .05; p = .66$ ). The lack of a significant relationship is not consistent with the literature which suggests that an individual’s experience with racial discrimination is typically related to how important the person perceives race to be a central part of their identity. Individuals with a greater in-group centrality are thought to have amplified sensitivity and vulnerability while interacting with out-group individuals (Roberts et al., 2017). Again, it is possible that the small sample size accounts for the lack of statistically significant findings. However, it is also possible that the measures used in this study did not adequately capture the nuances of the constructs. For example, the racial centrality measure used had a low reliability ( $\alpha = .56$ ), despite having adequate reliability in past research (McCullough et al., 2021). Racial centrality is a multifaceted construct, and it is possible that a different measure may more effectively capture the construct of racial identity for South Asian post-secondary students compared to the three items used in this study.



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Furthermore, it is possible that the prior literature may be more mixed than originally hypothesized as the majority of the literature within this review pertaining to racial centrality assessed African Americans rather than South Asian Americans. A study conducted by Chan & Mendoza-Denton (2008), focused on the Asian American population, aimed to develop a measure of rejection sensitivity and investigate how it is related to academic achievement and ethnic identity. Although Chan & Mendoza-Denton (2008) utilized The Multigroup Ethnic Identity Measure (MEIN; Phinney, 1992; Roberts et al., 1999) to assess ethnic identity rather than the three items of racial centrality utilized in this study, RS-A was noted to be unrelated to ethnic identity among the sample of 144 Asian Americans. Although previous literature demonstrates the correlation between RS-Race and ethnic identity among African Americans, perhaps for South Asian Americans this relationship is not as strong, perhaps because being considered a “model minority” leads to a different relationship between racial centrality and rejection sensitivity than what is found with other POC. Additionally, this study assessed identity specific rejection sensitivity. It is possible that assessing general rejection sensitivity, that is, viewing rejection sensitivity as a more general personality characteristic, may have produced a different result.

There were no statistically significant associations between rejection sensitivity and change in emotional/physiological reactions. However, the relationships between rejection sensitivity and change in HR ( $r(83) = .17; p = .12$ ), change in PA ( $r(85) = .15; p = .18$ ), and change in NA ( $r(85) = .00; p = .97$ ) were in the expected direction and may reach statistical significance with a larger sample size. Another possible explanation as to why our findings did not support current literature may be the nature of the videos. The results from a study conducted by Roberts & colleagues (2017) demonstrated that higher race-based rejection sensitivity and components of

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racial centrality predicted increased feelings of distress. In that study, the scenarios that were used included descriptions of fatal shootings of African Americans, a much more extreme manipulation than what was used in the present study. It is possible that in addition to the videos being familiar to participants, the subtle nature of the microaggressions present did not elicit the same degree of distress as violent acts involving racial biases. The latter explanation is supported by the findings that there was not a significant difference between the control and intervention videos regarding the microaggression ratings.

### **Moderation and Serial Mediation Findings**

Although there were some preliminary results which supported the idea of mediated relationships, contrary to current literature, racial centrality was not observed to moderate the relationship between discrimination and rejection sensitivity. Again, it is possible that previous literature may be more mixed than originally hypothesized. Previous research has demonstrated that individuals with strong racial/ethnic identity may be more sensitive to discrimination and rejection (McCullough et al., 2021; Park et al., 2013). Alternatively, a strong racial identity has been theorized to provide a buffering effect suggesting that individuals with a strong relationship to their ethnic group and identity may be protected against discrimination rather than experiencing an exacerbation of the negative impacts (Park et al., 2013). In a study conducted by Park & colleagues (2013), ethnic identity was shown to be neither a resilience nor risk factor for South Asian and East Asian American students. Another study conducted by Yip and colleagues (2008), found similar results when examining the effects of ethnic identity on the relationship between discrimination and distress among East Asians of different ages. Specifically, racial centrality did not moderate the relationship between discrimination and distress among individuals younger than the age of 30. The authors suggested the possibility that young adults

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are within the process of identity development and exploration and therefore the effects of ethnic identity may be masked. Given that the focus of the present study was on emerging adults, perhaps the failure of race centrality to moderate the relationship between discrimination and rejection sensitivity reflects the influence of stage of development. Or it is possible that the perception of being a “model minority” for South Asians leads to a different relationship among discrimination, racial centrality, and rejection sensitivity compared to other POC.

Contrary to predictions and the promise of the preliminary mediation analyses, there was no support for the hypothesis that rejection sensitivity and viewing the video as a microaggression serially mediated the relationship between previous experience with discrimination and emotional/physiological changes in response to the video. Again, it is possible that the study did not produce supportive findings given the small sample size. It is also important to note that PANAS and change in heart rate was used as a proxy for anxiety; therefore, it is possible that these measures were not satisfactorily assessing change in anxiety.

### **Strengths, Limitations, and Future Directions**

Although this study contributes to the literature, there are a few limitations to consider. Firstly, the small sample size limited the statistical power of all the analyses; however, it was especially the case for the serial mediation analysis. Another limitation is the inclusion of potentially problematic cases (e.g., those reporting somewhat extreme scores across a number of variables) to maintain the sample size during the analyses. Future research should consider removing multivariate outliers to ensure data integrity. Another limitation to consider is the lack of Canadian South Asian participants. MTurk was ineffective at recruiting Canadian South Asian participants and this part of the study was terminated. Therefore, this study was unable to test the hypothesis regarding the differences between Canadian and American South Asian students.

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Future research should determine equivalent online platforms to adequately obtain Canadian South Asian post-secondary participants, to accurately investigate differences between Canadian and American samples.

Another potential limitation to this study may be the familiarity participants had with the TV shows/movie clips presented along with the differing time durations of each clip. The video viewed by the control group was slightly longer overall with each clip included in the compilation being a little longer than the clips in the microaggression video. Future research may consider creating original video clips that better control for differences between the control and microaggression videos, as well as conducting greater pilot testing to ensure comparability across conditions.

Despite the limitations, this study has significant strengths. Firstly, this study considered the types of racially charged encounters that individuals of South Asian descent may regularly experience. The study is innovative in terms of assessing everyday microaggression compared to overt experiences of discrimination. Despite growing research about discrimination and health outcomes, little is known about South Asian Americans, therefore a strength for this study is the focus on South Asian American emerging adults. Future research may consider conducting similar studies with other racial and ethnic groups, as well as considering the effect of stage of development. This study was also innovative in terms of assessing participant's heart rate online via smartwatches both prior to and after viewing the intervention/neutral video. This study aimed to obtain participants' subjective reactions to the videos viewed by asking them to imagine themselves in the character's role and answer questions regarding how the video made them feel. The open-ended question included in the post-clip questionnaire was beneficial for participants to include their own thoughts and emotions that arose after viewing the video. Another key

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strength of this study is the promising association between the study variables and the foundation it provides for future research through replication with a larger sample size.

### **Implications**

Practical implications with this research could influence psychological practice. Considering the negative impact of cultural mistrust on a therapeutic relationship, future directions could focus on ensuring that mental health providers are aware of the daily racial and cultural issues that South Asian individuals may face (Kaduvettoor-Davidson & Inman, 2013; Sue et al., 2007). This will ensure that the provider is comfortable with discussing such topics with their clients, as well as exploring the relationship between psychological well-being and discrimination to provide the best care possible (Kaduvettoor-Davidson & Inman, 2013; Sue et al., 2007). It may also be helpful to set up community interventions where individuals can discuss their experience in an open and safe space with similar people (Inman et al., 2015).

As indicated in both the findings and in previous research, repeated exposure to discrimination can produce a greater expectation of prospective rejection with individuals with high racial rejection sensitivity (Mendoza-Denton et al., 2002). This hypersensitivity to rejection can lead to individuals adopting avoidant strategies to evade possible rejection and can contribute to feelings of alienation among peers and social support (Mellin, 2008; Mendoza-Denton et al., 2002). Therefore, it may be helpful to implement strategies that provide individuals with the appropriate stress coping strategies to adequately assess and respond to discriminatory experiences while ensuring that their expectations of prospective rejection are not enhanced.

Implementing practices tailored towards raising cultural sensitivity among post-secondary institutes may be useful as well. Due to the broad and blurred boundaries of

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microaggressions, improving conceptualizations and measurements of microaggressions would allow for adequate and accurate assessments (Lui & Quezada, 2019). Given the increasing diversity among the academic student body and the notion that racial experiences can lead to a hostile campus, it is important that all faculty, peers, and staff work towards facilitating a positive campus environment (Houshmand et al., 2014; Ogunyemi et al., 2020). This can be achieved by implementing multicultural training to educate members on how to identify and respond to racial microaggressions on campus along with conducting cultural sensitivity workshops during student orientation (Houshmand et al., 2014). Provided that individual factors, such as rejection sensitivity, are observed to have a small effect on an individual's response to a racially ambiguous situation, it may be beneficial to implement educational workshops related to the concept of rejection sensitivity and discuss how it may impact emotional and cognitive responses (Clark et al., 1999).

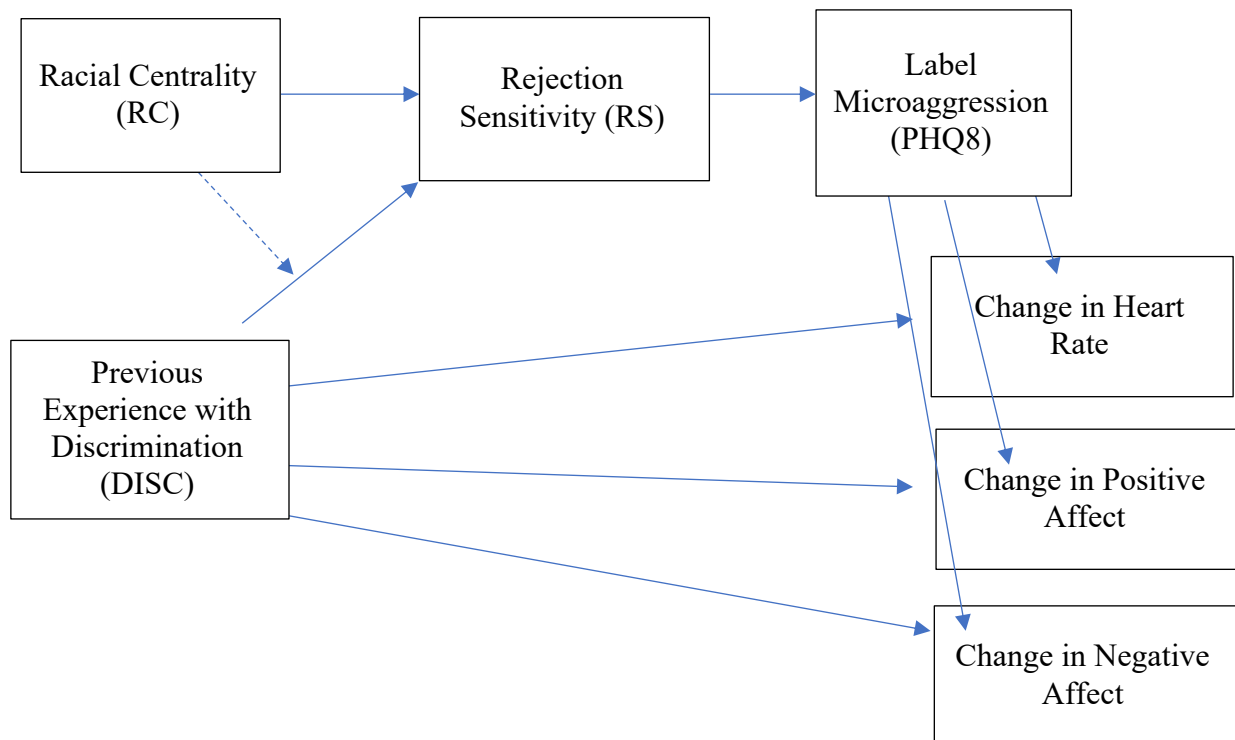
### **Conclusions**

Overall, this study contributes to the current literature regarding experiences with microaggressions among South Asian American post-secondary students. The findings show promising potential in understanding the relationship between previous discriminatory experiences and the emotional/physiological responses to a situation viewed as a racial microaggression. Future research should include a larger sample size and as well as different measures to satisfactorily capture constructs of racial centrality and rejection sensitivity.

Figures

Figure 1.

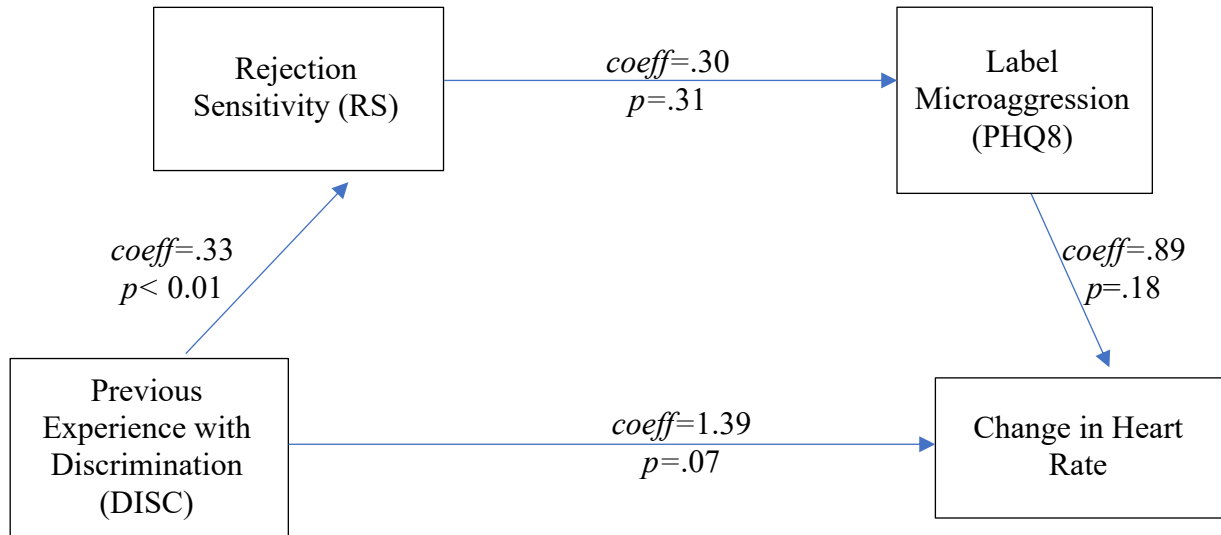
*The hypothesized mediated relationship between previous discriminatory experience and emotional/physiological responses to intervention videos through rejection sensitivity and perception of microaggressions with racial centrality as a moderator.*



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**Figure 2.**

*The mediated relationship between previous discriminatory experience and change in heart rate through rejection sensitivity and perception of microaggressions in response to the intervention video.*

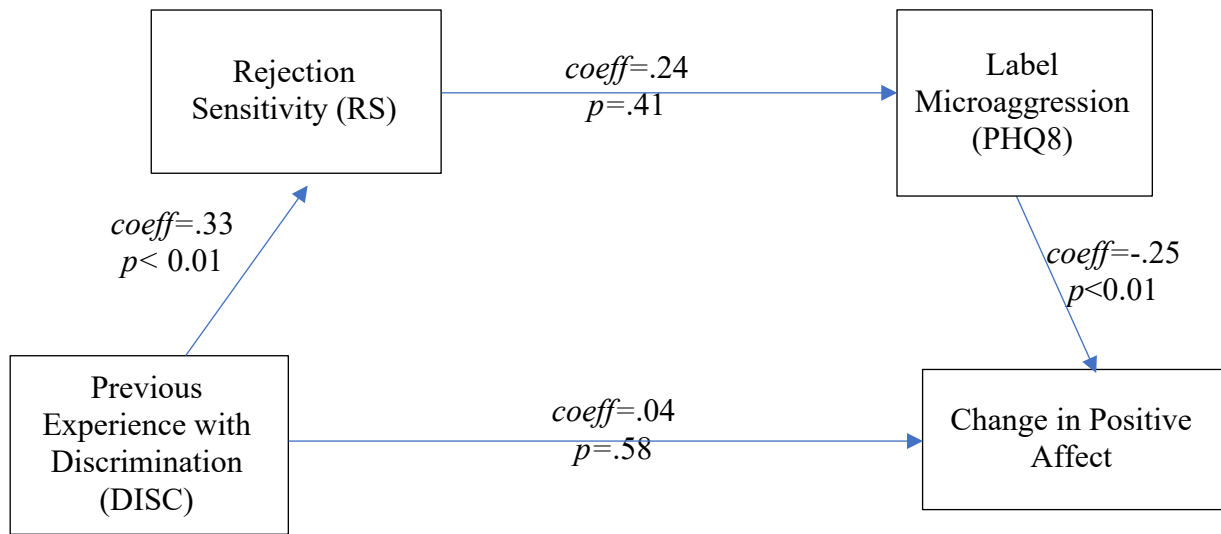




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**Figure 3.**

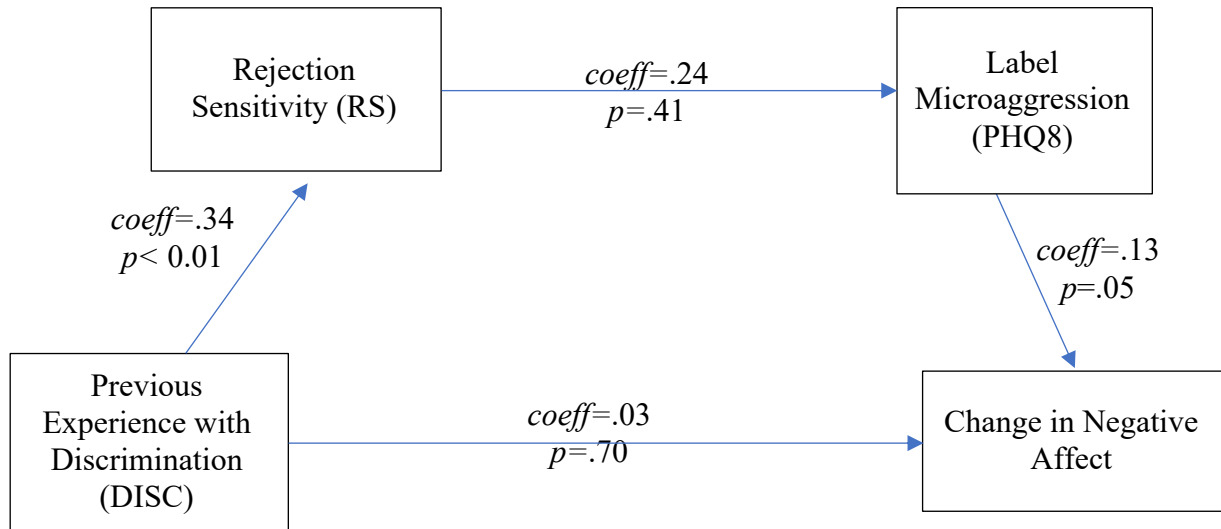
*The mediated relationship between previous discriminatory experience and change in positive affect through rejection sensitivity and perception of microaggressions in response to the intervention video.*



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**Figure 4.**

*The mediated relationship between previous discriminatory experience and change in negative affect through rejection sensitivity and perception of microaggressions in response to the intervention video.*



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Tables

**Table 1**

Descriptive and Frequency Statistics

Demographic Variables	N	%
Gender		
Female	52	43.7
Male	65	54.6
Non-binary/third gender	2	1.7
Birthplace		
U.S. A	113	95.0
Other	6	5.0
Bangladesh	2	1.60
India	2	1.60
Japan	1	0.8
Thailand	1	0.8
South Asian Background		
Indian	63	52.9
Pakistani	15	12.6
Bangladeshi	12	10.1
Sri Lankan	15	12.6
Nepali	9	7.6
Other	7	5.9
Education		
University	98	82.4
Community College	19	16.0
Trade School	1	0.8
Other	1	0.8
Smart Watch		
Apple Watch	81	68.1
Fitbit	38	31.9

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**Table 2**

Independent Samples t-tests Comparing Participant Reactions (Labeling Microaggressions, Heart rate, Positive Affect and Negative Affect) to Neutral Videos and Microaggression Videos

Video Condition	Neutral			Microaggression			t(40)	p	Cohen's d
	N	M	SD	N	M	SD			
Microaggression Label	32	2.81	1.12	86	3.19	1.24	.13	.14	.32
Change in Heart Rate	32	6.47	11.18	85	4.16	7.38	1.30	.12	.24
Change in Positive Affect	32	-.38	.80	87	-.21	.70	1.14	.38	.23
Change in Negative Affect	32	.12	.56	87	.30	.73	-1.28	.33	.28

**Table 3**

Descriptive Statistics for Time 2 Study Variables for Participants in the Neutral Video Condition.

Variable	N	M	SD	1	2	3	4	5	6	7
1. Everyday Discrimination	32	3.02	.85	—						
2. Race Centrality	32	7.03	1.15	-.04	—					
3. Rejection Sensitivity	32	1.41	.66	.33	.08	—				
4. Microaggression Label	32	2.81	1.12	.07	-.06	.55**	—			
5. Change in Heart Rate	32	6.47	11.18	.15	.04	.35*	.46**	—		
6. Change in Positive Affect	32	-.04	.80	.27	-.11	.32	.19	.47**	—	
7. Change in Negative Affect	32	.20	0.56	-.16	-.49**	.18	.35	-.07	-.32	—

\*\* p<.01 \*p<.05

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**Table 4**

Descriptive Statistics for Time 2 Study Variables for Participants in the Microaggression Video Condition.

Variable	N	M	SD	1	2	3	4	5	6	7
1. Everyday Discrimination	87	2.86	1.04	—						
2. Race Centrality	87	7.21	1.07	.22*	—					
3. Rejection Sensitivity	87	1.26	.58	.61**	.05	—				
4. Microaggression Label	86	3.19	1.24	.20	.28**	.19	—			
5. Change in Heart Rate	85	4.16	7.38	.20	.06	.17	.20	—		
6. Change in Positive Affect	87	-.21	.70	.06	-.25*	.15	-.39**	-.12	—	
7. Change in Negative Affect	87	.30	0.73	.04	.01	.00	.21*	.30**	-.41**	—

\*\* p<.01 \*p<.05

**Table 5**

Indirect Effects of Previous Experiences of Discrimination on Reactions to Microaggressions (change in Positive Affect, Negative Affect, and Heart Rate) through Rejection Sensitivity and Labeling Microaggressions.

	SE	95% CI
<b>1. INDIRECT EFFECT: DISC→RS→PCQ8→HR</b>		
DISC—RS—HR	.61	-.98 to 1.46
DISC—PCQ8—HR	.24	-.18 to .78
DISC—RS—PCQ8—HR	.29	-.13 to .32
<b>2. INDIRECT EFFECT: DISC→RS→PCQ8→PACHANGE</b>		
DISC—RS—PACHANGE	.05	-.02 to .20
DISC—PCQ8—PACHANGE	.04	-.13 to .04
DISC—RS—PCQ8—PACHANGE	.02	-.07 to .03
<b>3. INDIRECT EFFECT: RS→PCQ8→NACHANGE</b>		
DISC—RS—NACHANGE	.06	-.14 to .09
DISC—PCQ8—NACHANGE	.03	-.03 to .08
DISC—RS—PCQ8—NACHANGE	.01	-.01 to .04

\*\*p<.001; \* p<.05

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**Table 6**

Total Effect of Previous Experiences of Discrimination on Reactions to Microaggressions (change in Heart Rate, Positive Affect, and Negative Affect) through Rejection Sensitivity and Labeling Microaggressions.

	coeff	SE	p	95% CI
DISC – HR	1.39	.75	.07	-.11 to 2.88
DISC – PACHANGE	.04	.07	.58	-.10 to .19
DISC – NACHANGE	.03	.08	.70	-.12 to .18

\*\*p<.001; \* p<.05

**Appendix A**

**Post Clip Reaction Questionnaire**

1. On a scale of one to five, with (1) being *not at all* and (5) being *very*, rate how humorous you found the clip to be.
2. On a scale of one to five, with (1) being *not at all* and (5) being *very*, rate how inappropriate you found the interaction to be
3. On a scale of one to five, with (1) being *not at all* and (5) being *very*, rate how uncomfortable the clip made you feel.
4. On a scale of one to five, with (1) being *not at all* and (5) being *very*, rate how awkward the clip made you feel.
5. On a scale of one to five, with (1) being *not at all* and (5) being *very*, rate how anxious the clip made you feel.
6. On a scale of one to five, with (1) being *not at all* and (5) being *very*, rate how close the relationship between the individuals in the clip appeared to be.
7. On a scale of one to five, with (1) being *not at all* and (5) being *very*, rate how often in the past have you been in a similar situation.
8. On a scale of one to five, with (1) being *not at all* and (5) being *very*, rate whether the media clip depicts racial microaggression.
9. Describe any thoughts or feelings that came up for you as you were viewing the clip.

## **Appendix B: Video Description**

### **Appendix B1: Videos with Microaggressions**

1. **The Office:** In the episode “Email Surveillance” (Season 2, Episode 9) Michael is upset that the IT specialist, Sadiq, was given an invitation to Jim’s BBQ over him.
2. **Bend it like Beckham:** While Jazz is at Juliette’s house, Juliette’s mom enters a discussion with Jazz about her name, culture, and arranged marriages. The clip displays microinvalidations.
3. **Parks and Recreation:** In the episode “The Stakeout” (Season 2, Episode 2), Leslie questions Tom where he is from, to which he responds North Carolina. Not satisfied with the answer, Leslie rephrases her question and asks Tom where he lived prior to North Carolina. The clip depicts microinvalidation.
4. **Harold and Kumar Escape from Guantanamo Bay:** While Harold and Kumar are seated in their plane, a fellow passenger is seen to be looking at Kumar in a suspicious manner. This clip depicts a microassault.

### **Appendix B2: Neutral Videos**

1. **The Office:** In the episode “Diwali” (Season 3, Episode 6), everyone is invited to Kelly’s Diwali party. Michael and Angela are disappointed with the food.
2. **Bend it like Beckham:** Jazz and her soccer team make the finals however the game is the same day as her sister’s wedding. Her teammates help her sneak away to attend the game and get back to the wedding before anyone notices.
3. **Parks and Recreation:** In the episode, “End of the World” (Season 4, Episode 6), Leslie is upset with Tom for ruining her night. Tom admits that his company, Entertainment 720, is bankrupt.
4. **Harold and Kumar go to White Castle:** Harold and Kumar find themselves having to perform an emergency surgery.



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