# Contemporary racism and the Asian American experience: The impact of lifetime racial microaggression stress on psychological functioning and risk behavior in Asian American young adults

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## Abstract

Contemporary racism and the Asian American experience:
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and risk behavior in Asian American young adults

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Asian Americans are considered a "model minority" in the United States, conferring an implied status of privilege among racial minority groups. This stereotype results in misperceptions about the incidence and consequences of racial discrimination against individuals of Asian descent. Studies have shown that experiences of racial discrimination are prevalent across age groups and settings in this population, and associated with a litany of psychological and physical health problems, including depression, anxiety, suicidal behavior, and substance use. While previous research in the field has focused on the deleterious effects of overt forms of racism, contemporary and covert forms such as *"racial microaggressions"* are thought to be more detrimental to the health and well-being of individuals of color. Further, although it has been suggested that the *accumulation* of these everyday racial hassles are responsible for negative outcomes, measures of racism-related stress typically assess either the average frequency or

stressfulness of these experiences and not the overall *lifetime* stress. In order to address present gaps in the literature, this research sought to: (1) develop a measure assessing lifetime racial microaggression stress in Asian American young adults; (2) examine the relationship between this construct and health concerns that are increasingly prevalent in this population, specifically: depression, anxiety, social anxiety, alcohol use, and gambling; (3) test theoretical models describing the causal processes by which this stress may result in psychological symptoms and risk behavior, specifically the Stress-Coping Model of Addiction and the Transactional Stress Model; and (4) explore how racial socialization and other race- and culture-specific factors influence outcomes.

The instrument developed in this study, the Asian American Racial Microaggressions Stress Scale (AARMSS), demonstrated internal reliability, concurrent validity, and a three factor structure reflecting the theoretical taxonomy of racial microaggressions. Results indicated that total scores on this scale, representing *lifetime racial microaggression stress*, were associated with a range of health outcomes in a sample of Asian American young adults above and beyond average frequency of racial microaggressions and experiences of overt racial discrimination, suggesting the utility of a composite lifetime stress measure. Analyses indicated that the structural fit of theoretical models depended on the specific *outcome* in question; while the Stress-Coping Model of Addiction better explained the mechanism by which lifetime racial microaggression stress influenced gambling behavior in the sample, the Transactional Model of Stress better explained pathways to negative affect (depression, anxiety, and social anxiety) and alcohol use. In regards to racial socialization, participants endorsed a range of experiences across family and peer contexts; however, results highlighted the importance of the *context* and *content* of these messages. Specifically, family experiences were generally associated with outcomes

whereas peer experiences were not. Further, family messages conveying racial mistrust were associated with higher levels of depression and social anxiety; in contrast, family teachings that prepared participants for racial bias were associated with fewer psychological symptoms. Examinations of mechanisms indicated that preparation for bias attenuated these outcomes by compensating for the effects of lifetime racial microaggression stress and by reducing the use of avoidant emotional coping strategies in response to these stressors. Finally, evidence suggested that higher levels of acculturation and ethnic/racial identity generally compensated for lifetime racial microaggression stress or protected against negative outcomes; however among participants with greater Asian acculturation, higher levels of stress were associated with increased gambling behavior.

A better understanding of the everyday racial hassles faced by Asian American youth and young adults, the effects of these experiences, and the factors that cause, exacerbate, and attenuate negative consequences will help to: (1) increase awareness of contemporary forms of racial discrimination, (2) develop culturally-appropriate and sensitive prevention and intervention programs, (3) educate Asian American families about how to effectively communicate messages about race and racism to their children, and (4) shape future research agendas that will improve our understanding of the health and needs of this often overlooked minority population. Some clinical and preventative implications are discussed in length and suggestions are offered for tailoring culturally-appropriate programs for Asian American clients. Ultimately, however, treating people of color at the individual level is no substitute for societal change.

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# ACKNOWLEDGEMENTS

*"One looks back with appreciation to the brilliant teachers, but with gratitude to those who touched our human feelings. The curriculum is so much necessary raw material, but warmth is the vital element for the growing plant and for the soul..."*

(Carl Jung, 1953)

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I thank my mother, Chasoon Choi, my stepfather Jaewoo Choi, and my late father, Syed Mohammed Abidi, for your love and the many lessons you taught me throughout my life. It is a commonly held belief within clinical psychology circles that we study those areas of greatest personal relevance. Through you, I witnessed firsthand the expression and effects of racial hatred. Although you were born and raised in your respective motherlands, you gave so much to this country and in your hearts you were *American*. I know how painful it was for you to be made to feel as if you were not. Your experiences and a desire to heal your wounds inspired this work.

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# DEDICATION

*For my darling Noah, Olivia, and Saskia:*
May you love the color of your skin and better the world in your own beautiful ways

*For my parents:*
What courage you had to come here with nothing—thank you for giving me everything

# Chapter 1. INTRODUCTION

Asian Americans are commonly viewed as the "model minority" in the United States, which comes with the notion that members of this racial group have attained the American dream, rarely encounter discrimination (Bell, 1985; Delucchi, & Do, 1996; Young & Takeuchi, 1998), and should not be considered oppressed (Sue & Sue, 2008). This perception is so widespread that national polls suggest that the general population believes that racism is not an issue for Asian Americans (Committee of 100, 2001; 2009; McQueen, 1991).

Despite this, individuals of Asian descent are viewed as "perpetual foreigners" in the United States (Kim, 1999) and are not immune to race-based discrimination faced by other minority groups (e.g., Young & Takeuchi, 1998; Gee, Ro, Shariff-Marco, & Chae, 2009; NAPALC, 2003). A review of online Uniform Crime Reports compiled by the United States Department of Justice since 1996 provides compelling evidence that Asian Americans are victims of racially motivated harassment, vandalism, theft, physical assault, and homicide (Delucchi & Do, 1996; NAPALC, 2003). For example, in 2013, the Federal Bureau of Investigation recorded 158 anti-Asian hate crimes, ranging from vandalism to rape (United States Department of Justice, 2013). Data on implicit racial bias collected on the national level suggest that Americans generally hold anti-Asian attitudes, believing that individuals of Asian descent are less "American" than members of other racial groups (DeVos & Banaji, 2005; Lee, 2001; Committee of 100, 2001; Wilson, 1996).

Studies over the past two decades have consistently found that between 60-78% of Asian American adults report unfair treatment in the past year due to their race (Cabesas, Tam, Low, et al., 1989; Lee, 2000; Chae, Takeuchi, Barbeau, et al., 2009). Among Asian American youth and young adults in K-12 and higher education settings, prevalence rates of past-year experiences range from 80-98% (Greene, Way, & Pahl, 2006; Alvarez et al., 2006). Although not much is known about the effects of racism on the health and well-being of Asian American college students, the general consensus is that these experiences are associated with a number of negative consequences across age groups in this population, impacting psychological functioning, specifically: anxiety (Hwang & Goto, 2008), depression (Hwang & Goto, 2008), lifetime suicide ideation and attempts (Cheng, Fancher, Ratanasen, Conner, Duberstein, Sue &

Takeuchi, 2010; Hwang & Goto, 2008); and engagement in risk behaviors: alcohol (Yen et al., 1999; Chae et al., 2008; Landrine et al., 2006), and cigarette use (Choi et al., 2006).

However, not everyone who encounters racial discrimination will go on to experience negative health consequences. The risk and resilience model (Zimmerman and Arunkimar, 1994) provides a framework for understanding why the same level of exposure to risk does not necessarily yield the same outcomes across individuals in a popuation. To explain the mechanisms by which racial discrimination confers this risk, prior scholarly work conceptualizes racial discrimination as a stressor (Adams, 1990; Anderson, 1991; Dion, Dion, & Pak, 1992; Dion, Earn, & Yee, 1978; Harrell, 2000; Myers, 1982; Outlaw, 1993; Romero & Roberts, 2003; Thompson, Anderson, & Bakeman, 2000), in which *"conditions of threat, demands, or structural constraints … call into question the operating integrity of the organism"* (Wheaton, 1999; p. 177). This approach emphasizes how the recipient of racism-related stress perceives and responds to the stressor, and how these factors have downstream effects on health. One model, the Stress-Coping Model of Addiction, highlights the role of negative affect in this process, suggesting that an individual engages in risk behavior (e.g., drinking, gambling) in order to reduce stress (e.g., racism-related stress) and elevate mood, reinforcing its use in future stressful events (Conger et al., 1956; Shiffman, 1982; Wills & Shiffman, 1985). An alternate framework, based on the Transactional Model of Stress (Lazarus & Folkman, 1984), suggests that cognitive appraisal (the evaluative process that determines why and to what extent a particular person-environment transaction is stressful) and coping (the process through which the individual manages the demands of the person-environment relationship and emotions generated from the event) may also help elucidate a causal link between racial discrimination and negative outcomes. Other models, such as the Compensatory Model and the Protective Factor Model, provide a framework to examine other upstream factors that promote resilience or protect against negative outcomes, such as racial identity (one's personal sense of race) (Sellers, Morgan, & Brown, 2001) and racial socialization (messages transmitted to younger generations about the meaning of race and racial stratification) (Neblett, Terzian, & Harriott, 2010).

## 1.1 Racial Discrimination Against Asian Americans

### 1.1.1 *Definitions*

The terms *"racism"* and *"discrimination"* are often used interchangeably; however, there are important distinctions. Racism is defined as "a set of institutional conditions of group inequality and an ideology of racial domination characterized by a set of beliefs that the subordinate group is biologically or culturally inferior to the dominant racial group" (Bobo & Fox, 2003). Racial discrimination describes the "differential treatment on the basis of race that disadvantages a racial group" (NRC, 2004). Thus, while racism is a societal-level construct that reflects the "processes, norms, ideologies, and behaviors that perpetuate racial inequality" (Gee et al., 2009), discrimination is the subset of this construct that describes racism-promoting behaviors by societal members (e.g., individuals and institutions).

Two forms of discrimination are often discussed in literature: *overt* (i.e., readily observable) versus *covert* (i.e., difficult to observe). Overt acts of racial bias are relatively easy to identify; they are conscious, deliberate acts intended to harm, discriminate against, or place ethnic/racial minorities at a disadvantage. Acts of overt race-based discrimination were made illegal following the Civil Rights Movement; the Civil Rights Act of 1968 (Public Law 88-352) enacted 18 U.S.C § 245, permitting federal prosecution of anyone who *"willingly injures, intimidates, or interferes with another person, or attempts to do so, by force because of the other person's race, color, religion, or national origin"*. In contrast, covert racist acts are less public and less obvious, and have ambiguous motives. It is argued that old-fashioned blatant acts of discrimination have morphed into subtle contemporary acts, taking the form of racial slights and hassles (Dovidio & Gaertner, 1986). While less dramatic than old-fashioned forms, everyday experiences of racial discrimination are thought to be more detrimental to the health and well-being of ethnic/racial minority individuals (Chou & Feagin, 2008; Essed, 2002; Sue, 2010; Wu, 2002).

### 1.1.2 *History of Racism and Discrimination Against Asian Americans*

> *"A viper is nonetheless a viper wherever the egg is hatched…So, a Japanese American born of Japanese parents, nurtured upon Japanese traditions, living in a transplanted Japanese atmosphere…notwithstanding his nominal brand of accidental citizenship almost inevitably and with the rarest exceptions grows up to be a Japanese, and not an American"*
>
> Los Angeles Times Editorial, 1942 (from Nilya, 1993)

Despite extensive research on racism, racial issues in the United States are still often perceived in "Black and White terms" (Young & Takeuchi, 1998). However, the themes of contemporary racism against Asian Americans are shaped by the long history of racialization and discrimination against individuals of Asian descent. The term "yellow peril", while originally coined by Kaiser Wilhelm II, traces its conceptual roots to the Enlightenment Era and represents a longstanding and pervasive racist theme in history (Tchen & Yeats, 2014): *"the vision of the menace from the East was always more racial rather than national. It derived not from concern with any one country or people in particular, but from a vague and ominous sense of the vast, faceless, nameless yellow horde"* (Dower, 1986).

The early 1800s marked the first large-scale immigration of Asians to the United States. While the first generations of Asian immigrants made important contributions to the workforce where allowed, particularly in infrastructure, service, and agricultural trades, "yellow peril" came to describe the fear that these immigrants would threaten the standard of living for the White majority. Asian immigrants were met with hostility at the individual and institutional levels and subjected to deplorable working conditions, lower salaries, societal stigma, anti-Asian harassment, robbery, and widespread assaults that included forced deportation, lynching, hanging, torture, mass murders, and enslavement (Min 1995; Sandhu, 1997; Takaki, 1989; Mio, Nagata, Tsai, & Tewari, 2007). Civic unrest led to waves of racially motivated riots across the United States, including Denver's Anti-Chinese Riot of 1880, the Tacoma Riot of 1885, the Seattle Riot of 1886, and the Chinese Massacre of 1871. As a result of widespread anti-Asian sentiment, and partly due to effective lobbying efforts by influential groups such as the Asiatic Exclusion League (formed as the Japanese and Korean Exclusion League), yellow peril became codified into American law through the passage of legislation limiting: citizenship and suffrage (Page Law of 1875; Chinese Exclusion Act of 1882; Naturalization Act of 1906; Immigration Act of 1924; Tydings McDuffe Act), the right to testify against a White defendant (People v. Hall), public education (Lum v. Rice, 1927), land ownership (California Alien Land Law of 1913), and marriage rights (see Sandhu, 1997). Supreme Court decisions reinforced these racist policies (e.g., Takuji Yamashita v. Hinkle, Secretary of State of Washington; Takao Ozawa v. United States; United States v. Bhagat Singh Thind), culminating in Executive Order 9066 that forced relocation and internment of Japanese Americans during World War II. These

institutional acts affirmed Asian Americans as perpetual foreigners in the United States and legitimized racism and racial discrimination against individuals of this group.

Although the Civil Rights Movement of the 1960s addressed explicit discriminatory policies against all people of color and repealed laws that previously denied rights to Asian Americans, yellow peril persisted in the American worldview, shifting from overt "racist hate" to endearing terms of "racist love" (Chin & Chan, 1972). The behaviors that informed the denigrating stereotype of the foreign worker stealing jobs from White Americans were now lauded, casting the Asian American as a "model minority". William Petersen's 1966 New York Times Magazine article "Success Story: Japanese American Style" popularized the notion of the "model minority" and mainstream media praised Asian Americans for "out-whiting the Whites" (Newsweek, 1971). However, throughout the years, general attitudes toward Asian Americans have mirrored the temperamental nature of US-Asia relations and are most evident during times of economic and political stress. The racially motivated murder of Vincent Chin and the cruel and unusual punishment of Dr. Wen Ho Lee reiterated the constant themes of yellow peril: that all Asians are threats and that all Asians are the same—all foreigners, and therefore not American. As Dower writes: *"that vicious racial stereotypes were transformed, however, does not mean they were dispelled. They remain latent, capable of being revised by both sides in times of crisis and tension"* (1986). In her dual-axis theory of racialization (superior/inferior versus insider/foreigner), Kim notes that Asian Americans are valorized for achievement (model minority) but ostracized as foreign (perpetual foreigner) (Kim, 1999), placing them in a highly vulnerable position: ostracized by the White majority and at odds with other ethnic/racial minorities (Lei, 1998; Lee, 2006).

### 1.1.3 *Racial Discrimination Against Asian Americans in the 21st Century*

Current data show that Americans generally continue to express mixed feelings toward Asian Americans as a group. A 1925 study examining social acceptance levels of ethnic and racial minority groups in the United States revealed considerable anti-Asian sentiment (Bogardus, 1925). Subsequent replications of this work indicate that college students continue to express near-constant levels of animus toward individuals of Asian descent (Bogardus, 1933, 1947, 1958, 1967; Owen et al., 1977; Parrillo and Donoghue, 2005, 2013), suggesting the *"maintenance of similar racial and ethnic attitudes from one generation of college students to the next"* (Parillo &

Donoghue, 2013). Results from decades of national surveys in the general population, such as the General Social Survey (GSS), also reflect these sentiments. In 1990, respondents to the GSS ranked Asians as "more unpatriotic" than African Americans or Caucasian Americans (Smith, Marsden, Hout, & Kim, 2013). Ten years later, respondents indicated having the least in common with Asian Americans as a group (Smith et al., 2013). In another public opinion survey of attitudes toward Asian Americans conducted in 2009, the Committee of 100 (a Chinese-American non-profit organization) found that the majority of the U.S. general population sampled could not make meaningful distinctions between Asian ethnic subgroups, overestimated the number of Asian Americans, and underestimated the number of U.S.-born Asian Americans. Further, 45% of respondents believed that Asian Americans would be loyal to their countries of ancestry during an economic or military crisis and 44% believed Asian Americans should "think in more American ways". In regards to immigration issues, 39% of those surveyed reported that the increase in Asian immigration was bad for the U.S. and 28% thought that Asian immigrants were taking away too many jobs from other Americans. Research on implicit racial attitudes (race-based evaluations that occur outside of an individual's conscious awareness) mirrors these survey results: White subjects perceived Asian Americans as "less American" than other racial groups, more loyal to Asia, not truly American, and not to be trusted in international affairs (DeVos & Banaji, 2005; Lee, 2001). As national anti-Asian attitudes date back to early Asian immigration, these findings demonstrate that the perception of Asian Americans as perpetual foreigners has persisted despite societal advances following the Civil Rights Movement.

There is evidence that overt discrimination against Asian Americans continues today across multiple contexts. While less prevalent than in the previous century, anti-Asian hate crimes still occur. In 2006, the Federal Bureau of Investigation (FBI) recorded 239 hate crimes against Asian victims, constituting 4.8% of all race-related hate crimes. Following the September 11 terrorist attacks, roughly 250 cases of intimidation and threats were targeted against Asian Americans (NAPALC, 2002). Data released by the FBI show an upward trend in hate crimes directed at Asian Americans and Pacific Islanders between 2008-2010—increasing from 3.4 percent in 2008 to 3.7 percent in 2009, and to 5.1 percent in 2010 (United States Department of Justice, 2014). Asian Americans also report high lifetime and past-year rates of racial discrimination in multiple settings (Wu, 2002; Chou & Feagin, 2008). In 2002, 74% of respondents in a national sample of Asian Americans reported experiencing some form of routine unfair treatment in their lifetime

due to their race and 62% reported being disliked, treated unfairly, or seeing friends being treated unfairly (Chae, Takeuchi, Barbeau, et al., 2009). The 2003 California Health Interview Survey (CHIS) found that 65% of Asian American respondents reported unfair treatment due to race at some point in their lives (Gee, Ro, Shariff-Marco, & Chae, 2009). Data from the 2007 CHIS provided more information about common types of discriminatory experiences; 50% of Asian American respondents reported feeling disrespected, 34% reported being criticized for their accent or speech, and 17% reported harassment (computed from Gee, Ro, Shariff-Marco, & Chae, 2009). A study by the Department of Housing and Urban Development (HUD) (Turner, Ross, Bednarz, et al., 2003) found that 20% of Asian Americans experienced discrimination during the process of purchasing a home, a rate similar to that faced by African American homebuyers.

A review of research in the field of education finds that the model minority stereotype is ubiquitous in K–12 schooling (Lei, 1998) and higher education (Lee, 2006; Suzuki, 2002) settings. Compared to national samples of Asian American adults, rates of racial discrimination appear to be higher among youth and young adults in school. For example, Alvarez et al. (2006) found that 98% of Asian American college students reported experiencing at least one incident in the past year (e.g., being treated rudely because of their race). In another study, over 80% of Asian American students reported they were victims of racial name-calling and 50% reported race-based social exclusion or threats (Lee, 2006). In a longitudinal study, Chinese American students' levels of perceived discrimination remained high throughout high school (Greene et al., 2006; Way et al., in 2008). A large body of research has also found that Asian American youth consistently report higher levels of ethnic/race-based peer discrimination and harassment compared to students from other minority groups due primarily to lay beliefs about their academic ability (Alvarez, Juang, & Liang, 2006; Choi, Meininger, & Roberts, 2006; Fisher et al., 2000; Goto, Gee, & Takeuchi, 2002; Greene et al., 2006; Grossman & Liang, 2008; Rivas-Drake, Hughes, & Way, 2008; Kohatsu et al., 2000; Qin, Way, & Mukherjee, 2008; Rosenbloom & Way, 2004; Way, Santos, Niwa & Kim-Gervey, 2008). While African American and Latino American students reported discrimination by teachers and other adults, Chinese American youth reported physical and verbal harassment by their non-Asian peers (Rosenbloom & Way, 2004; Qin et al., 2008). Other studies have found that Asian American students are frequently teased and bullied by non-Asian peers (e.g., Huang, 2000; Louie, 2004), and that negative peer

experiences have detrimental effects on Asian American students' psychological and social well-being (Greene et al., 2006).

Racial discrimination may also pose a barrier to admissions at select higher educational institutions; while Ivy Leagues deny the existence of race-based quotas, data from the National Center for Education Statistics indicate that, relative to the growth of the Asian college-age population, the percentage of Asian American students attending these universities fell by more than 50% over the past twenty years, while the percentage of Whites remained relatively constant (Esphenshade, 2009; Unz, 2014). This is in comparison to other highly selective universities, such as the California Institute of Technology, that have historically admitted Asian American students in line with the proportion of college-age Asians in the general population (Unz, 2012; Woo, 2012).

In professional settings, the term "Bamboo Ceiling" was coined by Jane Hyun (2006) to describe the underrepresentation of Asian Americans in higher management positions across industries. For example, a survey examining career advancement at the National Institutes of Health (NIH) found that while Asian scientists constituted 21.5% of NIH's tenure-track investigators, only 9.2% of the 950 tenured researchers were Asian (Mervis, 2005). This disparity in leadership is evident in other fields with high Asian representation, such as the software industry; Asian employees represent over 30% of the workforce at top tech companies in Silicon Valley but hold only 6% of board membership positions (Swift, 2009). Despite the model minority stereotype of the diligent and tenacious worker, criticisms of traditional Asian cultural values and communication styles have been invoked as explanations for impeding progression up the corporate and academic ladders (Hyun, 2006). These commonly cited barriers to management represent subtle forms of racism against Asian Americans in the workforce (Swift, 2009), where challenges to the status quo are met with concerns about innate leadership abilities and the threat of expatriation or repatriation to Asian countries of ancestry (Pike, 2005). In a 2005 Gallup survey of employee perception of workplace discrimination, Asian American participants reported more incidents (31%) compared to individuals of other ethnic/racial groups. However, data suggest that Asian American workers tend to underreport incidents of racial discrimination to their employers; the U.S. Equal Employment Opportunity Commission (EEOC) found that only 2-3% of race-based discrimination complaints filed in 2005 were from Asian employees (U.S. EEOC, 2007). Unfortunately, few institutional avenues and programs

exist for Asian American employees to combat these insidious labels and perceptions (U.S. EEOC, 2007).

Within the model minority stereotype is the assumption that Asian Americans are immune to racial bias across all life contexts; Sue et al. suggest that this stereotype is invoked as a *"reason to ignore the problem of discrimination against Asian Americans and … as a convenient rationale to neglect them in research and intervention programs"* (Sue, Bucceri, Lin, et al., 2007). As Lin states: *"Despite its seemingly positive cloak, endorsing the model minority myth fosters overt discrimination against Asian Americans"* (Lin, 2010, p. 87).

## 1.2 CONTEMPORARY RACISM AND RACIAL DISCRIMINATION

Williams, Yu, Jackson, and Anderson (1997) suggest that poor conceptualization and operationalization of discrimination are major obstacles to developing a knowledge base of the nature and health consequences of racial discrimination. While incidence rates of blatant expressions of racism (e.g., hate crimes and physical assaults) have decreased over time, it is generally agreed that discriminatory acts have morphed into subtle and unconscious forms (Dovidio & Gaertner, 2000; Steele, 1997), embedded in our cultural attitudes, beliefs, and values and reflected in our institutional policies (DeVos & Banaji, 2005; Dovidio, Gaertner, Kawakami, & Hodson, 2002; Nelson, 2006; Sue, Capodilupo, Adal, & Torino, 2008). Thus, contemporary forms of racism are thought to be more insidious (Plous, 2003) as they are ambiguous and harder to identify for both the perpetrator and recipient. Although these subtle acts may be less dramatic than overt expressions of racism, they are thought to incur more psychological damage (Dovidio & Gaertner, 1998; Salvatore & Shelton, 2007). Recent conceptualizations of racism reflect this shift from overt to covert forms and scholarly work has started to focus on the subtle and everyday nature of race-based discriminations.

For the sake of clarity, three broad perspectives on contemporary racism can be distinguished, embodied in the constructs of "modern racism" (McConahay, 1986), "aversive racism" (Dovidio & Gaertner, 2000), and "racial microaggressions" (Pierce, Crew, Pierce-Gonzalez, & Willis, 1978; Solorzano, Ceja, & Yosso, 2000; Sue, 2003). These perspectives all maintain that everyday racial discrimination occurs below the level of awareness (the "water line" in Figure 1.1) of sometimes well-intentioned people (Sue, Capidilupo, et al., 2007; Sue & Capodilupo, 2008; Devine, 1989; Dovidio & Gaertner, 1986) and as a result, are more difficult to

cope with than overt forms (Sue, 2003; Dovidio & Gaertner, 1998; Salvatore & Shelton, 2007). It has also been suggested that contemporary racial discrimination against Asian Americans is highly covert in nature (Asamen & Berry, 1987; Liang, Li, & Kim, 2004; Sue, Bucceri, Lin, Nadal, & Torino, 2007); as a result, Asian Americans may be profoundly affected by racial hassles due to cultural emphasis on social harmony and conditioned sensitivity to social communication (Leets, 2003). However, research has historically overlooked these more subtle forms of discrimination, especially among Asian Americans (Sue, 2010).

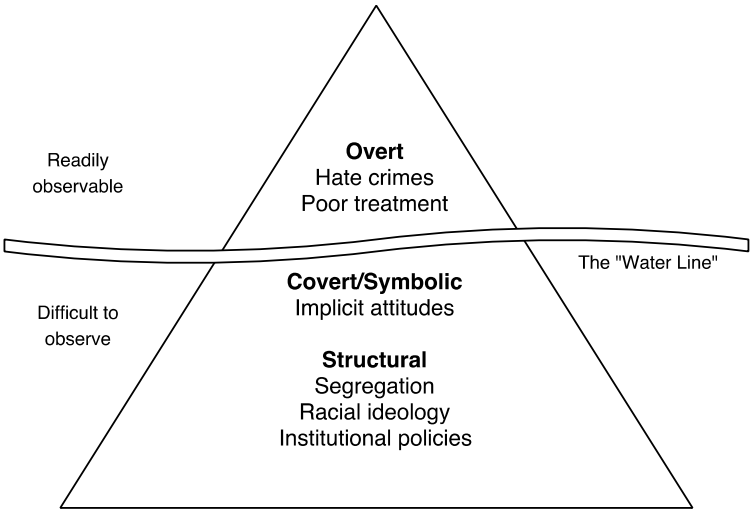



Figure 1.1 The "discrimination iceberg" (from Gee, Ro, & Chae, 2009).

### 1.2.1 *Modern Racism*

Early perspectives on contemporary racism focused on the racial attitudes and behaviors of Whites towards African Americans in the post-Civil Rights Era. McConahay (1981) first coined the term "modern racism" in order to explain the behavior of politically conservative Whites who claimed egalitarian beliefs but continued to feel hostility toward African Americans or equality in general. This form of contemporary racism is characterized by the denial that race-based discrimination is a continuing problem, beliefs that African Americans should advance in society based on merit alone and without special assistance, and antagonism toward demands for equality and policy designed to help African Americans. Because old-fashioned beliefs and blatant forms of racial prejudice are socially unacceptable, modern racism is expressed through behaviors in ambiguous situations (e.g., hostility toward anti-discrimination policies on the grounds of undermining cherished values of fairness and justice) (Henry & Sears, 2002). This

theory further suggests that by claiming that racial discrimination no longer exists, modern racists are able to resolve the dialectical tension between their egalitarian goals and negative attitudes and behavior directed toward racial minorities (McConahay, 1986). According to Sears et al., this process is rooted in bias against African Americans acquired as early as the adolescent years through socialization processes (Sears, 1988; Sears & Henry, 2003; Sears, Henry, & Kosterman, 2000; Sears, Sidanius, & Bobo, 2000). As a construct, modern racism has been generalized to describe contemporary forms of prejudice against other marginalized groups, such as women (e.g., Swim, Aikin, Hall, & Hunter, 1995).

### 1.2.2 *Aversive Racism*

Also developed to characterize the behaviors and attitudes of well-intentioned and ostensibly non-prejudiced Whites towards African Americans, Kovel (1970) described "aversive racists" as individuals who hold egalitarian explicit (conscious) attitudes but negative implicit (unconscious) racial attitudes (Dovidio & Gaertner, 2004): "aversive racists sympathize with victims of past injustice, support principles of racial equality, and genuinely regard themselves as non-prejudiced, but at the same time possess conflicting, often non-conscious, negative feelings and beliefs about Blacks that are rooted in basic psychological processes that promote racial bias" (Gaertner & Dovidio, 1986). This theoretical framework suggests that unconscious biased attitudes towards racial minorities may manifest in discriminatory actions outside of a person's awareness. For example, Whites who strongly endorse beliefs about equality have also been shown to demonstrate denigrating, ambivalent, and avoidant behaviors towards African Americans out of fear of exposing implicit racist attitudes (Dovidio & Gaertner, 2000). Further, individuals may work to deny their explicit negative reactions and pretend that ethnic/racial minority individuals only evoke positive reactions in order to resolve the dialectical tension between their egalitarian beliefs and their negative racial attitudes (Pearson, Dovidio, and Gaertner, 2009).

### 1.2.3 *Racial Microaggressions*

Both modern racism and aversive racism seek to describe the nature and experience of contemporary racism from the perspective of the perpetrator and have focused primarily on post-Civil Rights interactions between African Americans and Whites (Swim, Aikin, Hall, & Hunter,

1995). In contrast, the microaggressions framework aims to describe the nature and experience of contemporary racism from the perspective of the recipient—who may belong to any marginalized societal group. Pierce et al. (1978) first developed the concept of racial microaggressions but Sue and colleagues advanced the theory by demonstrating their impact on psychological functioning across marginalized groups (Constantine & Sue, 2007; Sue, Bucceri, et al., 2007; Sue, Nadal, et al., 2008).

Racial microaggressions are defined as verbal, nonverbal, or environmental slights and indignities that are intentionally or unintentionally committed against ethnic/racial minority individuals (Sue, Capodilupo, et al., 2007) in a subtle, automatic, and unconscious way (Sue, 2003; Pierce et al., 1978; Solorzano et al., 2000). Pierce et al. described racial microaggressions as: *"brief, everyday exchanges that send denigrating messages to people of color because they belong to a racial minority group"* (Pierce, Carew, Pierce-Gonzalez, & Willis, 1978, p. 273). Despite appearing innocuous and insignificant, theorists suggest that these common contemporary experiences of racial aggression cumulatively invoke devastating effects on health and well-being (Torres, 2009; Solorzano, Ceja, & Yosso, 2000, D.W. Sue, 2003, p. 48). These brief racial slights are often perceived as harmless and at times, well intentioned, by the perpetrator; however, they are experienced as invalidating and demeaning to the recipient, who is left to wonder about the intent and veracity of the insult, how to respond appropriately, and how to best cope with the consequences. Because microaggressive acts can usually be explained away by seemingly nonbiased and valid reasons, the target of a microaggression faces the question of whether it actually happened (Crocker & Major, 1989). Thus, the power of this experience lies in its invisibility and ambiguity to those involved in the exchange (both perpetrator and recipient) (Sue, 2005).

Racial microaggressions can be detected in many everyday encounters. The statement "You speak such good English" may appear to be positive and well-intentioned; however, it draws on implicit negative racial attitudes and beliefs about Asian Americans as perpetual foreigners in their own land, resulting in deep invalidation of an individual's identity and their legitimacy as an American. Although any one microaggression alone may not leave a psychological impact, if they occur over a lifetime they may *cumulatively* denigrate identity and health in more subversive and harmful ways than overt forms of racism (Sue, Capodilupo, & Holder, 2008; Sue,

2003; Holmes & Holmes, 1970; Holmes & Rahe, 1967; Meyer, 1995, 2003; Utsey, Giesbrecht, Hook, & Stanard, 2008; Utsey & Ponterotto, 1996).

A taxonomy of racial microaggressions proposes that microaggressive acts fall under three major categories: microassaults, microinsults, and microinvalidations (Figure 1.2) (Sue, Capodilupo, et al., 2007; Sue & Capodilupo, 2008). They all communicate overt or covert messages of denigration to the recipient but differ based on dimensions of awareness and intentionality by the perpetrator. Of the three types of microaggressions, microassaults are most similar to old-fashioned overt forms of racism and are often recognizable by both perpetrator and recipient. They are conscious, deliberate, racially biased beliefs or attitudes that are conveyed to individuals of color through verbal or behavioral expressions (or via environmental cues) in order to denigrate their racial heritage or identity and/or cause harm (Sue, 2010). These expressions generally communicate that the recipient is somehow lesser or unworthy (Dovidio & Gaertner, 2000). Examples of microassaults are: racial epithets (referring to Chinese Americans as "chinks" or Japanese Americans as "Japs") (verbal); denial of service at a restaurant (behavioral); and prohibition against interracial marriage (institutional/environmental). Microassaults are usually expressed under specific conditions that provide protection to the perpetrator (Sue and Capodilupo, 2008), such as behind a veil of anonymity (e.g., in an internet forum), among a social group that shares similar beliefs and attitudes, or in situations in which they can claim they were not in control of their actions (e.g., under the influence of a substance).

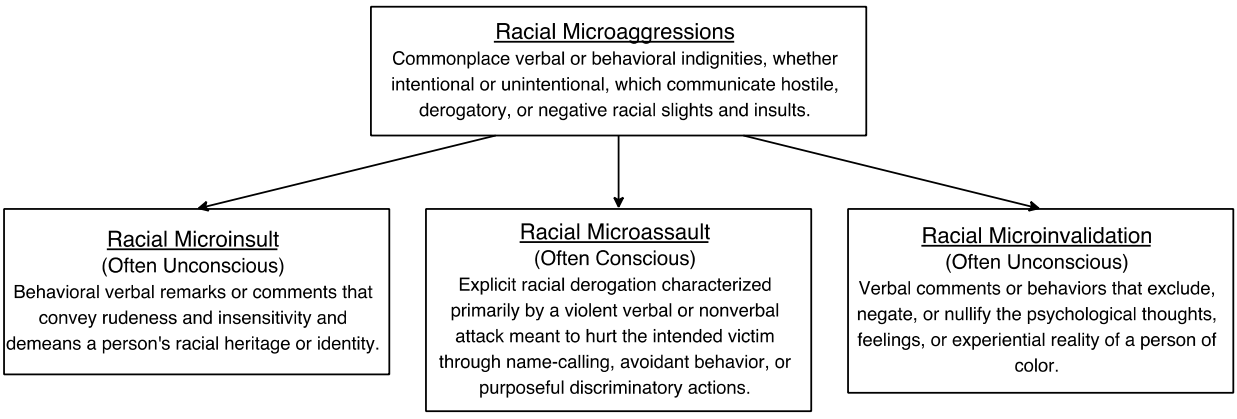



Figure 1.2 Taxonomy of racial microaggressions (from Sue et al., 2006).

Unlike microassaults, microinsults and microinvalidations tend to operate unconsciously, unintentionally, and automatically. Sue and colleagues (Sue, Bucerri, et al., 2007) propose that

these expressions are consistent with social psychology literature that suggests that racially biased acts are manifestations of implicit racist attitudes (Banaji, 2001; DeVos & Banaji, 2005). Although the perpetrator of these types of microaggressive acts may not consciously wish to offend the recipient, these messages nonetheless denigrate a person's racial heritage and/or identity and usually carry a hidden insulting meaning. Further, these interactions often represent negative experiences from the perspective of the recipient (Sue, 2010). Often based on ethnic/racial stereotypes, microinsults are communications or environmental cues that convey rudeness, insensitivity, and lack of understanding. Examples include a Pakistani American being called a "run of the mill Indian" and the assumption that all Asian Americans eat dog meat. The third form of microaggression, microinvalidation, is a verbal or behavioral communication (or environmental cue) that excludes, negates, or nullifies the psychological and experiential reality of a person of color. Of the three forms, microinvalidations are thought to be the most harmful because they directly deny and invalidate the racial reality of individuals of color (Sue, 2010). Examples include asking a native (U.S.)-born Asian American where they really come from and an unwillingness to acknowledge the relevance of race in racial situations: e.g., "we're all human beings".

### 1.2.4 *Racial Microaggressions Against Asian Americans*

Pierce and colleagues first conceptualized racial microaggressions in order to describe contemporary forms of racism against African Americans. While all ethnic and racial minority groups are subject to race-based microaggressions, research suggests that different groups may experience racism differently (Crocker et al., 1995, as cited in Crocker & Quinn, 1998; Sue, Bucerri et al., 2007). Therefore, some expressions of racism may be more salient to Asian Americans than to other racial minority groups (Liang et al., 2004; Sue & Sue, 2008; Young & Takeuchi, 1998) and others may not generally apply to Asian Americans.

The Asian American population represents over 40 ethnic subgroups that differ in language, religion, and cultural values (Sandhu, 1997). Subgroups also differ in terms of their population representation in the United States; larger groups include individuals who trace their ancestry to China, the Philippines, India, Vietnam, Korea, and Japan; smaller groups include those who trace their ancestry to Pakistan, Cambodia, Thailand, Laos, Taiwan, Bangladesh, Burma, and Indonesia (U.S. Census Bureau, 2010b). However, there is great ethnic diversity even within

Asian national borders. Despite the ethnic and cultural heterogeneity in the Asian American population, the American public generally has difficulty differentiating subgroups (Chu & Sue, 2011; Committee of 100, 2009) and responds based on phenotypic characteristics shared by individuals of Asian descent regardless of specific ethnic group membership (Sue & Sue, 2008; Yoo, Steger, & Lee, 2005). Thus, it is thought that nearly all Asian Americans face discrimination based on common racial assumptions held by the majority (i.e., stereotypes).

Stereotypes are the set of beliefs and attitudes toward a social group (Banaji & Dasgupta, 1998) that fuel prejudice (Banaji & Greenwald, 1994) and are the root of discrimination (Jones, 1997; Lyman, 2000; U.S. Commission on Civil Rights, 1986). Sue (2003) outlines popular contemporary Asian stereotypes: *"When the general public thinks about Asian Americans, these are some of the images and stereotypes that come to mind: spies, sneaky, backstabbers, disloyal, slanted eyes, stingy, subhuman, model minority, bright, hardworking, obedient, studious, quiet, good in math and science, wealthy, passive, lack of leadership skills, poor interpersonally, unassertive, men are unmasculine/sexually unattractive, women are domestic, exotic, and sexually pleasing, and poor English skills."* Racial microaggressions against Asian Americans are manifestations of these negative and positive stereotypes; in a review of Asian stereotypes, Lin (2010) identifies six popular themes evident in literature that mirror major themes of racial microaggressions typically encountered by Asian American young adults (Table 1.1) (Sue, Bucerri, et al., 2008).

Table 1.1. Common Asian American Stereotypes and Racial Microaggressive Themes (adapted from Lin, 2010)

| Asian Stereotype | Supporting Publications | Racial Microaggressive Themes |
|---|---|---|
| Model Minority | Cabezas and Kawaguchi, 1988; Min, 1995; Nee and Sanders, 1985; Osajima, 1988; Pittinsky, Shih, and Ambady, 2000; Sue and Okazaki, 1990; Takaki, 1989; Tuan, 1998; Wu, 2002; Yee, 1992 | Ascription of Intelligence<br>Denial of Racial Reality |
| Second-Class Citizen | DeVos and Banaji, 2005; Kawai, 2005; Taylor and Stern, 1997; Volpp, 2001 | Second-Class Citizenship |
| Perpetual Foreigner | Kitano and Daniels, 1988; Lee, 2002; Lyman, 2000; Tuan, 1998; Wu, 2002; Yee, 1992; Committee of 100, 2009 | Alien in Own Land |
| All Asians are the same | Hurh and Kim, 1989; Takaki, 1989; U.S. Commission on Civil Rights, 1986; Wu, 2002; Yee, 1992; Committee of 100, 2009 | Invalidation of Interethnic Differences |
| Invisibility | Sun and Starosta, 2006; Tuan, 1998; Volpp, 2001; Yee, 1992 | Invisibility |
| Oversexualization of Asian Women | Espiritu, 1997 | Sexual Objectification |

Based on centuries-old yellow peril, two basic sets of racial assumptions and beliefs have persisted in the American worldview of Asian Americans: (1) stereotypes of Asian Americans as foreigners, and (2) stereotypes of Asian Americans as a successful minority group—these manifest in the two most common themes of microaggressions toward Asian Americans.

The perception of Asian Americans as alien or perpetual foreigners in their own country (Nishi, 1989; Sue, Bucceri, Lin, Nadal, & Torino, 2007; Tuan, 1998) is independent of generational status and experienced by native-born (i.e., U.S.-born)—second-, third-, and even fifth-generation and higher—Asian Americans (Espiritu, 1992; Min, 1995; Omi, 1993). National polls conducted in the past two decades consistently suggest that the American general public perceives Asian Americans as foreign (Committee of 100, 2001, 2009). For example, in a national survey of attitudes toward Chinese Americans in 2001, 32% of respondents believed that Chinese Americans were more loyal to China than the U.S., 34% believed Chinese Americans had too much influence in U.S. high technology, 46% believed Chinese Americans would pass secret information to the Chinese government, and 24% indicated they would be uncomfortable voting for an Asian American to be president of the United States (in contrast to 15% for an African American candidate and 14% for a female candidate) (Hire Diversity, 2001). Microaggressions directed at Asian Americans reflect these beliefs (Sue, Bucceri, et al., 2007). Statements such as "Where are you really from?" and "You speak English so well", while based on curiosity or well-intentioned, nevertheless communicate a worldview that only Whites are "true Americans" (DeVos & Banaji, 2005). Some perpetrators may even attempt to defend biased personal and institutional actions, for example, by citing the number of Asian foreign nationals living in the U.S. or the number who eventually return to their countries of ancestry after schooling/work (see responses to Mervis, 2005). However, these justifications further invalidate the psychological effects of racial microaggressions (Sue, 2010). As Lin (2010) writes: *"Being constantly perceived as a foreigner can feel very marginalizing for an Asian American … because it conveys the message that the Asian American is not really an American and does not really belong in the United States, though this may be the only country that the individual has ever known"* (p. 93).

Statistics on grade point averages, standardized testing, educational attainment, and lower rates of divorce, mental health issues, and criminal behavior are often cited as evidence for the model minority stereotype (e.g., Hsin & Xie, 2014; U.S. Census, 2010a; see Sue & Sue, 2008 for

a review). However, these data are misleading due to several factors, including bimodal distributions of income and education that mask high rates of poverty and under-education and discrepancies between reported and true rates caused by cultural factors (Sue & Sue, 2008). Statements such as "You people are always good at math" may be defended as complimentary by the perpetrator; however, these seemingly "positive" messages can have grave consequences for the recipient (Lin, Kwan, Cheung, & Fiske, 2005; United States Commission on Civil Rights, 1986). Existing data indicate that Asian Americans experience significant problems in the college setting. For example, Asian American adolescents (Tsai, Ying, & Lee, 2001) and college students (Ying, Lee, & Tsai, 2004) report high levels of distress in pursing academic achievement due to lay beliefs about their abilities in math and science (Tsai, Ying, & Lee, 2001). Coupled with the findings that Asian Americans engage in fewer help-seeking behaviors in general (Kim, Atkinson, Umemoto, 2001; Kim & Omizo, 2003; Sue, 1994) compared to other ethnic/racial minority groups, Asian American students who experience academic difficulties may be overlooked by support programs. Another component of the model minority myth holds that Asian Americans do not suffer from discrimination and should not be considered an oppressed minority group (Sue & Sue, 2008). These beliefs deny the long history of racism against Asians in the United States (see §1.1.2). The model minority myth is so pervasive that some Asian Americans may accept the myth themselves and deny the reality of racism in the United States (Asamen & Berry, 1987; Delucchi & Do, 1996).

## 1.3 Mental Health Issues in Asian American College Students

The model minority stereotype extends to misperceptions about the prevalence of mental health issues among Asian Americans (Kim, Omizo, & Salvador, 1996; Serafica, 1997, 1999; Sue, Sue, Sue, & Takeuchi, 1998). However, data from recent studies indicate that Asian Americans have a comparable rate of anxiety and depression as Caucasians (Gee, 2004) across the age span and experience higher levels of intrapersonal and interpersonal stress (Ying, Lee, Tsai, Hung, Lin, & Wan, 2001). Despite the notion that Asian American young adults are well-adjusted, depression, anxiety, suicidal behavior, alcohol use, and gambling are growing concerns in this population. Hirshman and Wong (1986) suggest that because of the model minority stereotype, health issues in Asian American college students have been historically overlooked and understudied. However, available data suggest high rates of depression (Young, Fang, & Zisook, 2010) and

anxiety (Lau, Fung, Wang, & Kang, 2009; Okazaki, 1997), suicidality (Balis & Postolache, 2008), heavy episodic drinking (i.e., "binge" drinking, defined as consuming five or more drinking for men and four or more drinks for women on a single occasion) (Grant, Dawson, Stinson, et al., 2004; Wechsler, Dowdall, Maenner, Gledhill-Hoyt, & Lee, 1998), alcohol use disorders, alcohol abuse (Grant, et al., 2004), and pathological gambling (Cronce et al., 2001) in this population.

In the past 20 years, rates of depression, anxiety, heavy episodic drinking, and gambling have generally increased over time in Asian American college students (Cronce et al., 2001; Weschsler, Dowdall, Maenner, Gledhill-Hoyt, & Lee, 1998;). In 2010, Asians became the country's fastest-growing ethnic group (Pew Research Center, 2012); therefore, the incidence of these issues will likely continue to rise. Understanding the nature and contributants of health problems among Asian American young adults is increasingly important, although relatively little research has focused on this population and on the impact of racial discrimination (So & Wong, 2006; Hwang & Goto, 2004). While few studies have been conducted on mental health issues in Asian American college students in general, available data across age groups suggest difficulties with depression, anxiety, alcohol use, and gambling are specific concerns.

### 1.3.1 *Depression*

Exact rates of Major Depressive Disorder (Figure 1.3) are not known for college students, but estimates based on the College Alcohol Study indicate that approximately 5% of college students may be depressed (Weitzman, 2004). These rates are similar to the nearly 6% estimated in adolescents and young adults in the National Comorbidity Survey (Kessler & Walters, 1988). A higher percentage (30%) of college students report feeling "so depressed that it was difficult to function" at some time in the past year (American College Health Association, 2011).

Mixed findings have emerged regarding the prevalence of depression and depressive symptoms in Asian Americans compared to other ethnic/racial groups. For example, some data suggest lower rates of depression in Asian American adolescents compared to Caucasian and other ethnic/racial minority peers (Chen, Roberts, & Aday, 1998; Roberts, Robert, & Chen, 1997; Saluja et al., 2004; Siegel et al., 1998). Based on a community sample, Carmody (2005) found that the prevalence rate of Major Depressive Disorder in Asian Americans was lower than the national average. Similarly, within a sample of college students, Asian Americans reported

fewer depressive symptoms than Caucasian students (Takeuchi et al., 1998). A recent meta-analysis of 58 community sample studies found a wide range in prevalence rates of depression among Asian Americans in the United States, with estimates varying based on ethnic subgroup and other participant characteristics (Kim, Park, Storr, Tran, & Juon, 2015).

DSM-5 Criteria for Major Depressive Episode

A. Five (or more) of the following symptoms have been present during the same 2- week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.
    1. Depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful).
    2. Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation made by others).
    3. Significant weight loss when not dieting or weight gain (e.g., a change of more than 5 percent of body weight in a month), or decrease or increase in appetite nearly every day. Note: In children, consider failure to make expected weight gains.
    4. Insomnia or hypersomnia nearly every day.
    5. Psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down).
    6. Fatigue or loss of energy nearly every day.
    7. Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick).
    8. Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others).
    9. Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.
B. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
C. The symptoms are not due to the direct physiological effects of a substance or a general medical condition.

Figure 1.3 Diagnostic criteria for Major Depressive Episode (APA, 2013).

However, findings from numerous other studies report higher rates of Depression and depressive symptoms in Asian Americans compared to Caucasians in a national sample (Hasin et al., 2005), among older Asian immigrants (Kuo et al., 2008), adolescents (Lorenzo, Frost, & Reinherz, 2000) and college students (Hovey, Kim, & Seligman, 2006; Kearney, Draper, & Baron, 2005; Lantrip, Mazzetti, Grasso, Gill, Miller, Haner, Rude, & Awad, 2015; Okazaki, 1997; Sue & Chu, 2003; Young, Fang, & Zisook, 2010). A recent study based on a large sample

of students drawn from multiple universities in the U.S. found that Asian American young adults reported significantly higher levels of depression compared to Caucasian peers, controlling for acculturation levels (Young, Fang, Zisook, 2010). Further, findings from the National College Health Assessment Survey indicated that Asian American students were more likely than White students to attempt suicide (Kisch, Leino, & Silverman, 2005). Unfortunately, in a sample of college students who reported suicide ideation and intent, Asian American also reported lower rates of professional psychological help seeking compared to Caucasian counterparts, partly mediated by low levels of family support to seek counseling (Wong, Brownson, Rutkowski, Nguyen, & Becker, 2014).

Discrepancies in prevalence rates across studies may result from underreporting or symptom suppression due to stigma associated with mental health issues in Asian culture. Asian values based on Confucianism and collectivism emphasize conformity and social harmony; therefore, deviancy from "normality" is not well tolerated (Choi, 2002). A large-scale study found that Asian Americans who screened positive for Depression reported higher levels of stigma associated with Depression and treatment compared to depressed Caucasian students (Eisenberg, Downs, Golberstein, & Zivin, 2009). In another sample, Asian American students were less likely to seek and receive professional care for their depressive symptoms, compared to Caucasians (Choi, 2002; Eisenberg & Chung, 2012). Willgerodt and Thompson (2006) suggest that Asian American youth may also generally be less likely to disclose depressive symptoms compared to adolescents of other ethnic groups partly because of the model minority myth.

Perfectionism is an explanation often proposed for high levels of depressive symptoms in Asian American students. Previous studies have shown that maladaptive perfectionism and parent-driven perfectionism were associated with depressive symptoms among Asian American college students (Yoon & Lau, 2008). Pressures to succeed and self-doubt also predicted depressive symptoms (Castro & Rice, 2003). Some researchers posit a link between academic stress and suicidal ideation in Asian adolescents caused by familial, cultural, and societal demands for academic excellence (Ang & Huan, 2006; Chia, 1999; Ho, Hong, & Kua, 1999; Juon, Nam & Ensminger, 1994; Ung, 2003). Cultural norms, such as high parent expectations and conflict between traditional and modern values may also contribute to higher levels of depressive symptoms (Hovey et al., 2006).

Asian American students may also contend with fears of shame or loss of face to their families for not excelling in the manner that is expected by society. It is commonly thought that internalization of the model minority myth places undue stress on Asian American youth to succeed (Hwang & Goto, 2008; Lee, 2003), leading to increased levels of internalizing symptoms. Academic achievement is highly valued by Asians as it is perceived as one of the few avenues for upward mobility (Gloria & Ho, 2003; Sue & Okazaki, 1990), placing greater pressure on Asian American youth to perform. Work by Louie (2008) highlights the salience of race in this process: Asian American parents tend to frame education and academic achievement as a way to buffer and combat the effects of racial discrimination.

### 1.3.2 *Anxiety*

DSM-5 Criteria for Generalized Anxiety Disorder

A. Excessive anxiety and worry (apprehensive expectation), occurring more days than not for at least 6 months, about a number of events or activities (such as work or school performance).
B. The individual finds it difficult to control the worry.
C. The anxiety and worry are associated with three (or more) of the following six symptoms (with at least some symptoms present for more days than not for the past 6 months).
    1. Restlessness or feeling keyed up or on edge
    2. Being easily fatigued
    3. Difficulty concentrating or mind going blank
    4. Irritability
    5. Muscle tension
    6. Sleep disturbance (difficulty falling or staying asleep, or restless unsatisfying sleep
D. The anxiety, worry, or physical symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
E. The disturbance is not due to the direct physiological effects of a substance or another medical condition
F. The disturbance is not better explained by another mental disorder

Figure 1.4 Diagnostic criteria for Generalized Anxiety Disorder (APA, 2013).

Limited data are available on the prevalence of Generalized Anxiety Disorder (Figure 1.4) and Social Anxiety Disorder (Figure 1.5) in Asian American college students. National data from the Collaborative Psychiatric Epidemiology Studies suggest that Asian American adults report lower rates of Social Anxiety Disorder, Generalized Anxiety Disorder, Panic Disorder, and Post-Traumatic Stress Disorder compared to Caucasian counterparts, and endorse fewer anxiety

symptoms in general (Asnaani, Richey, Dimaite, Hinton, & Hofmann, 2010). However, studies of school-aged youth and young adults in college settings suggest that difficulties with anxiety are prevalent.

Pang (1991) found that Asian American adolescents reported higher levels of test anxiety compared to White peers. Relative to youth of other ethnicities, Native Hawaiian adolescents had a two-fold higher risk for Obsessive Compulsive Disorder (Guerrero et al., 2003). Various studies also indicate difficulties with anxiety in the college setting. Although Robinson, Klench, & Norton (2010) found similar rates of anxiety symptoms across racial groups, other findings suggest higher levels of state and trait anxiety in Asian American students compared to Caucasians (Hovey, Kim, & Seligman, 2006) and other ethnic/racial minority peers (Bertocci, Hirsch, Sommer, & Williams, 1992). In a large sample of college students from multiple universities, Asian American students reported higher levels of anxiety compared to White students (Rosenthal & Schreiner, 2000).

DSM-5 Criteria for Social Anxiety Disorder

A. Marked fear or anxiety about one or more social or performance situations in which the individual is exposed to possible scrutiny by others. Examples include social interactions (e.g., having a conversation, meeting unfamiliar people), being observed (e.g., eating or drinking), and performing in front of others (e.g., giving a speech).
B. The individual fears that he or she will act in a way or show anxiety symptoms that will be negatively evaluated (i.e., will be humiliating or embarrassing; will lead to rejection or offend others).
C. The social situations almost always provoke fear or anxiety.
D. The social situations are avoided or endured with intense fear or anxiety.
E. The fear or anxiety is out of proportion to the actual threat posed by the social situation and to the sociocultural context.
F. The fear, anxiety, or avoidance is persistent, typically lasting for 6 months or more.
G. The fear, anxiety, or avoidance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
H. The fear, anxiety, or avoidance is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication) or another mental condition.
I. The fear, anxiety, or avoidance is not better explained by the symptoms of another mental disorder, such as panic disorder, body dysmorphic disorder, or autism spectrum disorder.
J. If another medical condition (e.g., Parkinson's disease, obesity, disfigurement from burns or injury) is present, the fear, anxiety, or avoidance is clearly unrelated or is excessive.

Figure 1.5 Diagnostic criteria for Social Anxiety Disorder (APA, 2013).

A growing literature also suggests that Asian American college students report higher levels of social anxiety symptoms compared to Caucasian peers (Hsu & Alden, 2007; Lee, Okazaki, & Yoo, 2006; Okazaki, 1997, 2002; Okazaki, Liu, Longworth, & Minn, 2002). However, in a treatment-seeking sample, Horng and Coles (2014) found that while Asian American patients endorsed higher levels of social anxiety symptoms on self-report measures compared to Caucasian patients, rates of clinician-formulated diagnoses of Social Anxiety Disorder did not differ between patient groups, suggesting the possibility that culture-specific factors (e.g., concerns about losing face) or clinician bias (e.g., perceived competence of patients of Asian descent—another manifestation of the Model Minority Myth) may pose barriers in adequate diagnosis and treatment.

### 1.3.3 *Alcohol Use*

Heavy episodic (or "binge") drinking, defined typically as four or more drinks for women or five or more for men within a drinking occasion, is a significant problem on college campuses (Wechsler & Nelson, 2008). Heavy episodic drinking is linked to serious clinical and public health problems, including suicide, violent behaviors, motor vehicle accidents, and sexually transmitted diseases (Wechsler et al., 1998). The stereotype that Asian American college students are not at risk for Alcohol Use Disorder (Figure 1.6) is inaccurate; although scant, emerging research indicates that despite the low overall prevalence of alcohol use among Asian Americans nationwide, heavy episodic drinking and alcohol-related problems are increasingly prevalent among Asian American young adults in college settings (Cook, Bond, Karriker-Jaffe, & Zemore, 2013; Iwamoto, Takamatsu, & Castellanos, 2012).

Research indicates that drinking prevalence is higher among Asian American college students compared to the national average (So & Wong, 2006), with 25% engaging in heavy episodic drinking (Weschsler, Dowdall, Maenner, Gledhill-Hoyt, & Lee, 1998). While Caucasian students showed the greatest decrease in rates of problem drinking from 1993 to 1997, Asian American students showed the greatest increase compared to all other race/ethnic groups (Wechsler, Dowdall, Maenner, Gledhill-Hoyt, & Lee, 1998). Grant and colleagues (2004) found that rates of Alcohol Use Disorders were higher in Asian American college students compared to all other racial groups, except for Caucasian and Native American students, and epidemiological data indicate escalating rates of Alcohol Use Disorders in this population. Between 1991 and

2002, the prevalence of past-year Alcohol Dependence rose from 4.1% to 10.2% among Asian American men and past-year Alcohol Abuse rose from 0.07% to 3.9% among Asian American women (Grant et al., 2004).

DSM-5 Criteria for Alcohol Use Disorder

A. A problematic pattern of alcohol use leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12-month period:
    1. Alcohol is often taken in larger amounts or over a longer period than was intended.
    2. There is a persistent desire or unsuccessful efforts to cut down or control alcohol use.
    3. A great deal of time is spent in activities necessary to obtain alcohol, use alcohol, or recover from its effects.
    4. Craving, or a strong desire or urge to use alcohol.
    5. Recurrent alcohol use resulting in a failure to fulfill major role obligations at work, school, or home.
    6. Continued alcohol use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol.
    7. Important social, occupational, or recreational activities are given up or reduced because of alcohol use.
    8. Recurrent alcohol use in situations in which it is physically hazardous.
    9. Alcohol use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol.
    10. Tolerance, as defined by either of the following:
        a. A need for markedly increased amounts of alcohol to achieve intoxication or desired effect.
        b. A markedly diminished effect with continued use of the same amount of alcohol.
    11. Withdrawal, as manifested by either of the following:
        a. The characteristic withdrawal syndrome for alcohol.
        b. Alcohol (or a closely related substance, such as a benzodiazepine) is taken to relieve or avoid withdrawal symptoms.

**Mild:** Presence of 2-3 symptoms
**Moderate:** Presence of 4-5 symptoms
**Severe:** Presence of 6 or more symptoms

Figure 1.6 Diagnostic criteria for Alcohol Use Disorder (APA, 2013).

In a recent study examining the trajectory of heavy episodic drinking in college students, Iwamoto, Corbin, & Fromme (2010) found that while rates of problem drinking were generally lower among Asian Americans compared to students of other ethnic/racial groups, those who drank heavily reported alcohol consumption comparable to Caucasian peers. Further, the majority (59%) of Asian American students sampled increased their alcohol consumption over

the course of the first three years of college. Other college data suggest higher rates of alcohol use among Asian Americans compared to Caucasian and ethnic/racial minority peers; for example, So and Wong (2006) found a lifetime prevalence rate of 94% and a current (past 30 days) prevalence rate of 78.6%. In a sample of community college students, 10.7% of Asian American participants reported problem drinking one to two days per month and 17.3% reported problem drinking 3 or more days per month (Arliss, 2007). Asian Americans in this sample were also more likely to engage in problem drinking at a higher frequency compared to non-Asians.

Studies that disaggregate Asian Americans into specific ethnicities have found large subgroup differences in rates of alcohol use (Caetano, Clark, & Tam, 1998; Cook, Bond, Karriker-Jaffe, & Zemore, 2013; Doran, Myers, Luczak, Carr, & Wall, 2007; Lum, Corliss, Mays, Cochran, & Lui, 2009; Price, Risk, Wong, & Klingle, 2002; Wong, Klingle, & Price, 2004), with Korean Americans among the highest at risk for problem drinking and Alcohol Use Disorder. A national study by the Substance Abuse and Mental Health Services Administration (Substance Abuse and Mental Health Services Administration, 2010) found that the rate of past-month heavy episodic drinking among Korean American adults was three times higher than among Chinese American adults in the sample (25.9 percent versus 8.4 percent). Studies of college students have also found higher rates of heavy drinking and alcohol dependence among Korean Americans versus Chinese Americans (Luczak et al., 2001, 2003, 2004), with about a third of Korean American college students reporting heavy episodic drinking (Chang, Shrake, & Rhee, 2008; Hendershot, Dillworth, Neighbors, & George, 2008; Hendershot, et al., 2005; Luczak, et al., 2003; Luczak, et al., 2001). Korean American students were also more likely to view drinking as a socially acceptable practice compared to Chinese American peers (Chang et al., 2008). In a large national sample of Korean American college students, 92% reported at least one heavy drinking episode in the previous 30 days and 67% drove a vehicle while intoxicated (Sa, Seo, Nelson, Lohrmann, and Ellis, 2014).

Numerous studies indicate high rates of co-occurrence between Major Depressive Disorder and Alcohol Use Disorders (Camatta & Nagoshi, 1995; Kessler et al., 1994; Otsuki, 2003; Weitzman, 2004) and Anxiety Disorders and Alcohol Use Disorders (Carey & Correia, 1997; Kushner & Sher, 1993; Kushner, Sher, & Beirman, 1990). While not necessarily linked to quantity or frequency of alcohol use, the presence of a Depressive Disorder appears to be a significant predictor of substance use in the general young adult population (e.g., Goodman &

Capitman, 2000; Vogel, 2000; Vogel, Hurford, Smith, & Cole, 2003). In college students, the presence of depressed mood predicts greater alcohol related problems, particularly among women (Camatta & Nagoshi, 1995; Weitzman, 2004). Heavy drinking while alone (in comparison to heavy social drinkers and non-heavy drinkers) is related to higher levels of depressive symptoms, lower self-efficacy to quit drinking, and earlier onset of drinking (Christiansen, Vik & Jarchow, 2002). Finally, the occurrence of a Major Depressive Episode in the past year and recent alcohol use appears to predict past suicide attempts (Stephenson, Pena-Shaff & Quirk, 2006).

Evidence suggests that some college students use alcohol to manage anxiety symptoms. Alcohol related diagnoses are twice as common in college students with Anxiety Disorders in comparison to those without significant anxiety symptoms (Kushner & Sher, 1993). Additionally, negative reinforcement drinking motives (those related to the removal of an aversive stimulus such as high anxiety states) explain the variance in alcohol related negative consequences beyond that explained by rates of drinking (Carey & Correia, 1997). The diagnosis of an Anxiety Disorder during the first year of college confers a two-fold greater risk of Alcohol Dependence by year four, and nearly quadruples the risk by year seven (Kushner et al., 1999). While high rates of comorbidity between Alcohol Use Disorders and Anxiety Disorders have been observed (Kushner, Sher, & Beitman, 1990), associations between social anxiety symptoms and alcohol use are inconsistent and appear to depend on drinking context (Terlecki, Ecker, & Buckner, 2014) and motives (Clerkin & Barnett, 2012).

Some findings suggest associations between mental health issues and alcohol use in Asian Americans. In a national sample of Asian Americans, female heavy drinkers endorsed higher rates of lifetime Generalized Anxiety Disorder and Depressive Disorders compared to non-drinkers, light drinkers, and male heavy drinkers (Cheng, Lee, & Iwamoto, 2012). Depressed Asian American college students who smoke may also be at greater risk for alcohol-related problems (Kim, Lee, Klang, Kalman, & Ziedonis, 2012). Among Korean international students in the United States, acculturation stress and depressive symptoms were predictive of drinking-related problems (Lee, 2012). Finally, in a large multi-univeristy sample of Korean American college students, problem drinking was positively associated with cigarette use, dissatisfaction at college, and study-related stress (Sa, Seo, Nelson, Lohrmann, & Ellis, 2014).

### 1.3.4 *Gambling*

DSM-5 Criteria for Gambling Disorder

A. Persistent and recurrent problematic gambling behavior leading to clinically significant impairment or distress, as indicated by the individual exhibiting four (or more) of the following in a 12-month period:
    1. Needs to gamble with increasing amounts of money in order to achieve the desired excitement.
    2. Is restless or irritable when attempting to cut down or stop gambling.
    3. Has made repeated unsuccessful efforts to control, cut back, or stop gambling.
    4. Is often preoccupied with gambling (e.g., having persistent thoughts of reliving past gambling experiences, handicapping or planning the next venture, thinking of ways to get money with which to gamble).
    5. Often gambles when feeling distressed (e.g., helpless, guilty, anxious, depressed).
    6. After losing money gambling, often returns another day to get even ("chasing" one's losses).
    7. Lies to conceal the extent of involvement with gambling.
    8. Has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling.
    9. Relies on others to provide money to relieve desperate financial situations caused by gambling.
B. The gambling behavior is not better explained by a manic episode.

**Mild:** 4-5 criteria met
**Moderate:** 6-7 criteria met
**Severe:** 8-9 criteria met

Figure 1.7 Diagnostic criteria for Gambling Disorder (APA, 2013).

Pathological gambling is characterized by gambling behavior that is persistent, recurrent, and results in significant impairment in functioning (Figure 1.7) (APA, 2013). Prevalence rates of pathological gambling across samples range from 1.4 to 7.89% (Blinn-Pike, Worthy, & Jonkman, 2007; Cunningham-Williams & Cottler, 2001; Cunningham-Williams, Grucza, Cottler, Womack, Books, Przybeck, Spitznagel, & Cloninger, 2005; Gerstein et al., 1999; Petry & Armentano, 1999; NRC, 1999; Welte et al., 2002). Lifetime prevalence rates of sub-threshold pathological gambling, or "problem gambling" are higher, reaching 12.4% (Cunningham-Williams et al., 2005). Research suggests that young adulthood is a period of increased vulnerability for gambling with greater consequences (Volberg, 1993); problem and pathological gambling among college students have both increased in the past decade, and 78-89% of young adults report gambling in the past year (Welte et al., 2011). Problem and pathological gambling

have been associated with distress and impairment in school, work, and social functioning, as well as other mental health issues (LaBrie, Shaffer, LaPlante, & Wechsler, 2003). Anxiety, depressed mood, and alcohol use appear to be risk factors for problem gambling (Petry, Stinson, & Grant, 2005; Shead, Derevensky, & Gupta, 2010).

In community-based samples, regional surveys indicate Asians have higher rates of problem gambling compared to the general U.S. population (Blaszczynski, Huynh, Dumlao, & Farrell, 1998; Petry et al., 2003; Woo, 2003). For example, an informal study conducted by the NICOS Chinese Health Coalition found that 21% of the Chinese American community sampled in San Francisco met criteria for pathological gambling. More vulnerable groups within the Asian community may be at even greater risk; for example, 59% of Southeast Asian refugees in a community sample scored 5 of more on the South Oaks Gambling Screen, meeting criteria for pathological gambling (Petry et al., 2003). The only national survey on gambling disorders that focused on ethnic differences found that rates of gambling among Asian Americans and African Americans were equivalent—and twice as high as the rate observed for Caucasian participants (Alegria, Petry, Hasin, Liu, Grant, & Blanco, 2009).

Race and ethnicity also appear to be prominent risk factors for gambling among college students. Evidence suggests that ethnic/racial minority individuals tend to gamble more often (Welte et al., 2004), have higher rates of pathological gambling (Moore, Jadlos, & Carlson, 2000), and spend about two-and-a-half times more on gambling in a typical month than their Caucasian peers (Volberg, 2001). Data from recent studies indicate higher rates of problem gambling in Asian American compared to Caucasian college students (Cronce et al., 2001; Wong, Zane, Saw, & Chan, 2012). However, among ethnic/racial minorities, Asian Americans appear to be at increased risk for gambling: Lesieur et al. (1991) found that a greater proportion of Asian American college students (12.5%) reported gambling compared to African Americans, Caucasians, and Native Americans (rates of 4-5%).

Several reasons may explain the high rates of gambling seen among Asian American youth. For example, gambling is culturally acceptable in many Asian cultures that have a history of gambling traditions (Binde, 2005) and less stringent religious prohibitions regarding gambling. Secondly, casinos have strategically targetted the Asian American market (Bennett, 2005; NAM, 2006; Rivlin, 2007; Skolnik, 2004). Financial difficulties may also increase the allure of gambling as a way to achieve wealth for Asian families who are not as financially established.

Little research on gambling has been conducted with Asian American groups and most of the information about problem and pathological gambling that is available comes from media sources or reports from community stakeholders (Fong, Campos, Rosenthal, Brecht, Schwartz, Davis, & Chung, 2008).

## 1.4 Impact of Racism on Asian American Mental Health

It is well documented that experiences of racial discrimination adversely affect the life course of ethnic/racial minority individuals. Existing research on overt racism and racial discrimination suggests that the subjective experience of discrimination may have a devastating effect on one's physical and mental health across ethnic/racial minority groups in the United States (Barry & Grillo, 2003; Brondolo, Rieppi, Kelly, & Gerin, 2003; Flores et al., 2008; Utsey, Chae, Brown, & Kelly, 2002; Klonoff, Landrine, & Ulman, 1999; Williams, Neighbors, & Jackson, 2003). The Surgeon General's 2001 report highlights racism and racial intolerance as direct contributants to mental illness by exacerbating anxiety and depression (U.S. Public Health Services, 2001). Researchers suggest that experiences of racial discrimination negatively influence the health and well-being of ethnic/racial minorities in two ways: *"(a) racial stereotypes and negative images can be internalized, denigrating individuals' self-worth and adversely affecting their social and psychological functioning; and (b) racism and discrimination are stressful events that can directly lead to psychological distress and physiological changes affecting mental health"* (U.S. Department of Health and Human Services, 2001, p. 39). These conclusions are based on a large body of work using samples of African American adults and adolescents that identify racism as a distinct source of chronic (Harrell, 2000; Pieterse & Carter, 2007; Utsey, Ponterotto, Reynolds, & Cancelli, 2000) and daily stress (Sellers & Shelton, 2003) that leads to negative mental health outcomes (Paradies, 2006; Pascoe & Richman, 2009).

Although the nature of racial discrimination against Asian Americans and its health correlates are not well known and generally understudied (Hwang & Goto, 2008; Liang, Li, & Kim, 2002), available research indicates that perceived discrimination is negatively associated with psychological functioning and risk behavior in this population. Since the 1990s, about 40 studies have been published examining the link between racial discrimination and health outcomes in Asian American samples, 24 of which examined mental health outcomes and six that examined substance use.

### 1.4.1 *Racial Discrimination and Depressive and Anxiety Disorders*

While several studies have documented the associations of racial discrimination with depression and anxiety in other ethnic/racial groups, relatively few have examined these correlates in Asian American samples. Available data suggest that these relationships hold true for Asian Americans across multiple contexts.

In a sample of Asian American Vietnam era combat Veterans, racism-related stress during wartime was associated with current depressive symptoms and diagnosis of Post-Traumatic Stress Disorder (PTSD), additionally, the traumatic impact of race-related events was associated with severity of PTSD symptoms (Loo et al., 2001). Lifetime history of racial discrimination was associated with general psychological distress in a community sample of Chinese Americans (Gee et al., 2002) and Filipino Americans (Mossakowski, 2007). In a community sample of Asian and Pacific Islander gay men, racial discrimination was associated with depressive symptoms and anti-immigrant discrimination was associated with HIV risk behaviors. In a nationally representative sample of Asian Americans, Gee and colleagues found that racial discrimination was associated with greater odds of having any DSM-IV disorder, Depressive Disorder, or Anxiety Disorder within the past year (Gee, Spencer, Chen, Yip, & Takeuchi, 2007). Additionally, individuals who reported discrimination were at a two-fold greater risk of having one psychiatric disorder within the past year, and a three-fold greater risk of having two or more disorders.

Among Asian American students in school settings, perceived encounters of racial discrimination have been associated with a range of problems in psychological functioning. Although many of these studies used one- or few-item measures to assess experiences of racial discrimination, these findings identify significant associations with a wide range of negative outcomes. Juang & Alvarez (2010) found that racial discrimination was related to loneliness and anxiety in Chinese American adolescents. Ethnic and race-based peer discrimination and harassment have been linked to depression and low self-esteem among Asian American youth and adolescents in middle school (Alvarez & Helms, 2001; Greene et al., 2006; Grossman & Liang, 2008; Lee, 2005; Qin et al., 2008; Rivas-Drake, Hughes, & Way, 2008). In the collegiate setting, Landrine et al. (2006) found that frequency of discrimination across different contexts (work, public places, health care, school) was associated with psychological symptoms in Asian American students. Additionally, students of Asian descent appear to report higher levels of

distress due to peer discrimination than their African American, Hispanic, and White counterparts (Fisher et al., 2000). Tuan (1998) and Yoo (2005) found that feelings of confusion, anger, shame, inferiority, and loneliness were associated with experiences of racial discrimination in a sample of Asian American college students. In a sample of Vietnamese American undergraduates, scores on a one-item measure assessing the impact of racism were associated with depression and anxiety symptoms.

Other studies using more sophisticated measures to assess discrimination have arrived at similar results. For example, ratings on the nine item Everyday Discrimination Scale (Williams, Yu, Jackson, & Anderson, 1997) were associated with depressive symptoms in a sample of Korean-American college students (Lee et al., 2005). Further, Hwang and Goto (2008) found that perceived discrimination was associated with other mental health outcomes in Asian American young adults in addition to psychological distress and depression, including suicidal ideation and state and trait anxiety. Students in this sample also reported higher levels of anxiety, depression, and suicidal ideation in response to discrimination compared to Latino/a peers. A more recent study using data from the same sample found that perceived discrimination was positively correlated with suicide ideation and attempts (Cheng, Fancher, Ratanasen, et al., 2010). Among Asian American college students, Cress and Ikeda (2003) found a direct link between student perceptions of negative campus climate and symptoms of depression, concluding that higher education settings that are perceived to condone discrimination may negatively impact the mental health of Asian American students. Because social approval plays an important role in self-esteem development among Asian American youth, social threats posed by racial discrimination may have devastating effects in these younger samples.

### 1.4.2 *Racial Discrimination and Risk Behavior*

A large body of work indicates that perceived racial discrimination is associated with alcohol use and cigarette smoking in African American adults (Borrell, Jacobs, Williams, Pletcher, Houston, & Kiefe, 2007; Landrine & Klonoff, 2000; Martin, Tuch, & Roman, 2003; Tran, Lee, & Burgess, 2010; Yen, Ragland, Greiner, & Fisher, 1999) and adolescents (Guthrie, Young, Williams, Boyd, & Kintner, 2002; Horton & Loukas, 2011; Terrell, Miller, Foster, Watkins, 2006; Wiehe, Aalsma, Liu, & Fortenberry, 2010). In the past 10 years, only a few studies have examined the link between racial discrimination and substance use in community, national, or college samples

of Asian Americans. Available data suggest that perceived racial discrimination is associated with a variety of risk behavior outcomes, including alcohol, cigarette, and illicit drug use among Asian American adults (Chae et al., 2008; Landrine et al., 2006; Yen et al., 1999) and adolescents (Choi et al., 2006) across settings.

Yen (1999) found that race-based lifetime and job discrimination was associated with alcohol use in a community sample of Asian American bus drivers. Among adolescents in another community sample, unfair treatment in the neighborhood and at school due to race/ethnicity was associated with substance use (Choi, 2006). In a community sample of Filipino Americans, Gee et al. (2007) found that everyday discrimination was associated with illicit drug use, prescription drug use, and alcohol dependence. In this study, a one-unit increase in reports of everyday racial discrimination was associated with two-fold greater odds of having Alcohol Dependence. Experiences of everyday discrimination have also demonstrated associations with smoking status and lifetime history of Alcohol Abuse and Alcohol Dependence in a national sample of Asian Americans (Chae et al., 2008). In a college sample, frequency of discrimination across contexts (work, public places, health care, school) was associated with cigarette smoking. Taken together, these studies suggest that racial discrimination may be related to substance use in Asian Americans.

Gambling is underrecognized as a risk behavior among college students and has not previously been studied as a possible correlate of racial discrimination in Asian American samples despite growing concerns about the prevalance of gambling in this population (Petry, 2003; Petry et al., 2003; Alegria, Petry, Hasin, Liu, Grant, & Blanco, 2009).

## 1.5 Racial Discrimination as a Stressor: Creating an Integrated Model

Observed correlations of racial discrimination with psychological functioning and risk behavior outcomes suggest that there may be great costs associated with working to maintain a positive self-concept in the face of pervasive negative societal messages. It is clear that experiences of racial discrimination present daily challenges in the lives of ethnic/racial minority individuals. However, there is variability in how individuals are affected by these experiences; that is, not everyone reacts the same way when exposed to the same risks (Werner, 1995). What can account for these differences?

Several mechanisms may explain the link between ethnic/racial discrimination and negative outcomes; the predominant theoretical framework that has emerged in the literature conceptualizes racial discrimination as a form of chronic stress (Alvarez, Juang, & Liang, 2006; Liang, Alvarez, Juang, 2007; Noh, Beiser, Kaspar, et al., 1999; Thoits, 1999). Stressors are *"conditions of threat, demands, or structural constraints that … call into question the operating integrity of the [individual]"* (Wheaton, 1999, p. 177). Using this framework, stress caused by experiences of racial discrimination (i.e., "racism-related stress") results from an *"imbalance between demands and resources"*, occurring when *"pressure exceeds one's perceived ability to cope"* (Lazarus & Folkman, 1984), leading to illness. It has been proposed that mundane, everyday stressors, or "daily hassles", prospectively predict mood, distress, and physical health (Lazarus et al., 1980), fitting well with the conceptualization of contemporary forms of racism. That is, this framework can be extended to racism-related stress, in which mundane everday racial stressors, or "daily racial hassles" (e.g., racial microaggressions), may exceed one's "perceived ability to cope" and impact psychological functioning and risk behavior. Gruen and colleagues further suggest that when daily hassles accumulate or touch on special areas of vulnerability (Gruen, Folkman, & Lazarus, 1989) (e.g., identity), they can be especially detrimental to subjective well-being and health (DeLongis, Coyne, Dakof, Folkman, & Lazarus, 1988; Kanner, Coyne, Schaefer, & Lazarus, 1981). Again, this framework can be extended to racism-related stress, given that the accumulation of daily racial hassles in the form of racial microaggressions are thought to have grave consequences for an ethnic/racial minority indivdual (Meyer, 1995, 2003; Holmes & Holmes, 1970; Holmes & Rahe, 1967; Sue, 2003; Sue, Capodilupo, & Holder, 2008; Utsey, Giesbrecht, Hook, & Stanard, 2008; Utsey & Ponterotto, 1999).

In developmental literature, perceived discrimination is considered to be a putative risk factor that threatens positive development; Comer (1995) asserts that environmental stress caused by experiences of racism complicates the adolescent and young adult period for ethnic/racial minority youth in a manner not experienced by Caucasian peers. This has implications for ethnic/racial minority young adults during the college years as research examining college students supports the notion that life stress is an important risk factor for mental health issues and risk behavior in general (e.g., Aldridge-Gerry, Roesch, Villodas, McCabe, Leung, Da Costa, 2011; Hutchinson et al., 1998; Laska, Pasch, Lust, Story, & Ehlinger, 2009; Magid, Colder,

Stroud, et al., 2009). Although Asian Americans are disproportionately harmed by racism-related stress compared to their Caucasian peers, they have often been overlooked (Mossakowski, 2003).

In regard to racism-related stress, Harrell (2000) suggests: *"the subjective judgment of the individual is the critical point of analysis in understanding the impact of racism on well-being"* (p.44). She posits that racism-related stress taxes an individual's ability to reason and cope with denigrating experiences, resulting in threats to their mental wellness. She notes that the greater the ambiguity of the racist act, the harder it is for the target to determine its meaning, and considerable energy may be expended in cognitively appraising the situation. When perceived unfairness is subtle, the uncertainty of the situation might call for a more active and difficult appraisal of the event or situation, causing psychological distress; whereas direct blatant discriminations might involve fewer cognitive demands because the message is unambiguous. This points to the importance of studying: (a) subtle forms of racism, particularly racial microaggressions, and (b) specific aspects of stress processing (e.g., negative affect, appraisal, and coping) that may influence outcomes. How does accumulation of daily racial hassles affect an individual's health and well-being? That is, beyond associations between discrimination and negative outcomes, how does *lifetime racial microaggression stress* impact psychological functioning and risk behavior?

Given research indicating the following: (a) perceived discrimination is associated with depression (e.g., Noh & Kaspar, 2003) and anxiety (Hwang & Goto, 2008) in Asian American adults, (b) Asian American college students have significantly higher levels of depression (Young, Fang, & Zisook, 2010), anxiety (Lau, Fung, Wang, & Kang, 2009), and social anxiety (Hsu & Alden, 2007; Lee, Okazaki, & Yoo, 2006; Okazaki, 1997, 2002; Okazaki, Liu, Longworth, & Minn, 2002) compared to Caucasian peers, (c) depression is a risk factor for substance abuse in Asian American youth (Otsuki, 2003), and (d) Asian American college students endorse higher coping motives to drink compared to peers (Labrie, Lac, Kenney, & Mirza, 2011), it is possible that stress from racial microaggressions may accumulate over the lifespan and contribute toward these negative outcomes in Asian American young adults. Moreover, although a few studies have identified associations between experiences of discrimination, depressive symptoms, and one type of risk behavior (i.e., cigarette smoking) in this population, fewer have examined mechanisms underlying these associations, although most (if not all), attribute these relationships to stress. That is, when an Asian American individual is

exposed to a lifetime of contemporary racial discrimination, by what pathways does the resulting stress impact their mental health and engagement in risk behavior?

Models have been proposed to separately explain how experiences of racial microaggressions are processed, how stress leads to negative affect, how risk behavior is used to cope with negative affect, how cognitive appraisals and coping mediate outcomes of stress, and how race- and culture-specific factors influence the impact of racial discrimination on health. Theoretical frameworks that appear to be particularly relevant are: (a) the Microaggression Process Model (Sue, 2010), (b) the Stress-Coping Model of Addiction (e.g., Cooper, 1994: Cooper et al., 1995), (c) the Transactional Model of Stress (Lazarus & Folkman, 2004), (d) the Model of Racism-Related Stress and Well-Being (Harrell, 2000), and (e) Neblett's Racial Socialization Pathways (Neblett et al, 2010). To our knowledge, no study has previously examined the link between lifetime racial microaggression stress, psychological functioning, and risk behavior within the context of these models.

### 1.5.1 *Sue's Microaggression Process Model: Incident, Reaction, and Consequence*

Although no study has traced the psychological impact of a racial microaggression from beginning to end, Sue (2010) provides a descriptive processing framework to better understand how individuals react to and are affected by a microaggressive event (Figure 1.8). This model has five steps: incident, perception, reaction, interpretation, and consequence. Although these phases are logically ordered, Sue (2010) acknowledges that they may occur in a different order, overlap, or interact in a more complex manner. However, it is generally agreed that microaggressive incidents impact three domains: cognitive, behavioral, and emotional (Sue, Lin, Torino, et al., 2009).

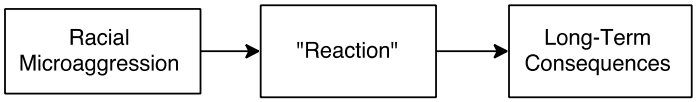



Figure 1.8 The Microaggression Process Model (Sue, 2010).

Sue (2010) theorizes that microaggressive incidents set off a chain of responses that affects individuals immediately and over time, impacting their thought processes, affect, and behavior. In this model, perception refers to the individual's attempts to categorize an event based on

whether or not it was racially motivated. Sue (2010) suggests that many factors go into this cognitive assessment process, including the ethnic/racial identity development of the recipient, the content of the microaggression, and personal experiences (e.g., their previous experiences with racial discrimination). Given that racial microaggressions are often subtle and ambiguous—where the overt message is at odds with its hidden meaning—the perception phase is thought to be particularly taxing (Sue, 2010). Targets of microaggressions may wonder if they are simply misinterpreting the event due to oversensitivity (making an internal attribution) or if they have accurately assessed the event as hostile (making an external attribution). Microaggressions that invalidate an individual's experience of racism may incur more damage as internal attributions tend to be associated with higher levels of distress following the event (Crocker & Major, 1989). After the appraisal process, the individual proceeds through a set of cognitive, behavioral, and emotional reactions. Sue, Capodilupo, & Holder (2008) highlight some specific responses to racial microaggressions that are common in African Americans. For example, "sanity check" describes coping through social support seeking in order to validate one's experiential reality, normalize their experience, and reiterate that they are not alone.

The long-term consequences of microaggressions are not well known, although it is generally agreed that their cumulative effects are detrimental to health and well-being (Holmes & Holmes, 1970; Holmes & Rahe, 1967; Meyer, 1995, 2003; Sue, 2003; Utsey, Giesbrecht, Hook, & Stanard, 2008; Utsey & Ponterotto, 1999).

### 1.5.2 *Stress-Coping Model of Addiction: Negative Affect*

A growing body of research suggests that racial discrimination is associated with substance use for some people (Bennett, Wolin, Robinson, Fowler, & Edwards, 2005; Gee, Delva, & Takeuchi, 2007; Gibbons, Gerrard, Cleveland, Wills, & Brody, 2004; Guthrie, Young, Williams, Boyd, & Kintner, 2002; Whitbeck, Hoyt, McMorris, Chen, & Stubben, 2001; Yen, Ragland, Greiner, Fisher, 1999). Based on these studies, it has been suggested that risk behavior may provide a means of coping with racial discrimination. Traditional models of stress and illness suggest that stress results in negative affect, which in turn, leads to negative health outcomes (Figure 1.9). Laboratory studies generally support this pathway; for example, stressor tasks generally evoke both negative affect and cardiovascular responses, which are correlated with negative health outcomes (Feldman, Cohen, Lepore, Matthews, Kamarck, & Marsland, 1999). Some

conceptualizations of stress (e.g., Cannon-Bard theory) propose that emotional experiences and physiological changes resulting from a stressful event are simultaneous, and occur immediately after presentation of the stressor.

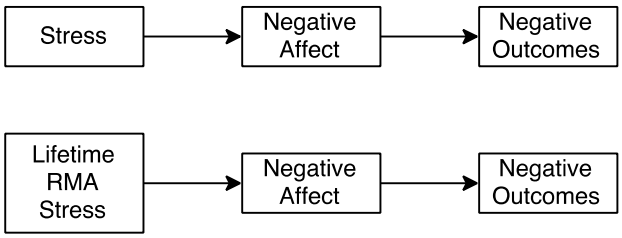



Figure 1.9 Extending the stress pathway model for racial microaggressions.

A large body of research indicates that individuals engage in risk behavior to cope with life stressors (e.g., Cooper, 1994). Sher (1991) suggested that adolescents at risk for Substance Use Disorders experience high levels of environmental stress, which in turn, results in negative feelings such as depression and anxiety, and the use of substances to alleviate these feelings. This is a common theme across several theoretical approaches in the field of addictions, including the Cognitive-Behavioral Relapse Prevention Model (Marlatt & Gordon, 1985) the Tension Reduction Model (Berger & Adesso, 1991; Ham & Hope, 2003), the Self-Medication Hypothesis (Khantzian, 1974; 1985), and the Stress-Coping Model of Addiction (Cooper, 1994; Cooper et al., 1995). These models have been invoked to explain high rates of co-occurrence between Depression and Alcohol Use Disorders (Kessler et al., 1994; Camatta & Nagoshi, 1995; Weitzman, 2004; Otsuki, 2003) and Anxiety and Alcohol Use Disorders (Kushner & Sher, 1993; Carey & Correia, 1997; Kushner, Sher, & Beirman, 1990).

The terms “self-medication”, “avoidance”, “negative reinforcement”, and “drinking to cope” are different terms used to describe coping motives for drinking. Alcohol use and related problems have been repeatedly associated with coping motives (Carey & Correia, 1997; Cooper, 1994; Kassel et al., 2000; Lecci et al., 2002; Park & Levenson, 2002; Brennan et al., 1986), and drinking to cope is related to symptoms of anxiety (Novak, Burgess, Clark, & Zvolensky, 2003; Stewart et al., 2001) and depression (Wood, Nagoshi & Dennis, 1992), as well a negative model of self (McNally, Palfai, Levine & Moore, 2003). According to these approaches, when risk behavior (such as problem drinking and gambling) is used to reduce stress and elevate mood, the

probability of reuse when experiencing future stress increases due to negative reinforcement principles (Conger et al., 1956; Shiffman, 1982; Wills & Shiffman, 1985).

Although knowledge of how negative affect influences risk behavior in Asian American young adults is limited, some evidence indicates positive associations. Otsuki (2003) found that Depression was a risk factor for substance abuse in Asian American high schoolers. Rosario-Sim and O'Connell found that increased depressive symptoms and higher levels of acculturation were associated with current cigarette use. Drinking to cope with negative affect is common for a significant subset of college students (Armeli, Todd, Conner, & Tennen, 2008; Brennan et al., 1986; Carey & Correia, 1997; Cooper, 1994; Kassel et al., 2000; Lecci et al., 2002; Park & Levenson, 2002), and Labrie and colleagues (2011) found that Asian American students endorsed higher coping motives to drink compared to Caucasian peers (who endorsed higher enhancement motives). Depression has also been associated with problem and pathological gambling (Petry, Stinson, & Grant, 2005). A recent study by Stewart, Zach, Collins, & Klein (2008) found that 23% of a sample of pathological gamblers engaged in gambling to cope. Further, coping gamblers were at higher risk of gambling problems, drinking frequency, drinking problems, and drinking to cope. Conversely, anxiety, depression, and alcohol use appear to be risk factors for problem gambling (Shead, Derevensky, & Gupta, 2010; Petry, Stinson, & Grant, 2005). Although previous studies have examined gambling motives in college students (Neighbors, Lostutter, Cronce, & Larimer, 2002), to date, these studies have not evaluated motives specific to different racial and ethnic groups. Therefore, no data are currently available on gambling motives in Asian American college students.

Thus, conceptualizing racial discrimination as a stressor may help elucidate the causal link between racial discrimination, psychological functioning, and risk behavior (Figure 1.10) (Adams, 1990; Anderson, 1991; Dion, Dion, & Pak, 1992; Dion, Earn, & Yee, 1978; Harrell, 2000; Myers, 1982; Outlaw, 1993; Romero & Roberts, 2003; Thompson, Anderson, & Bakeman, 2000). It is thought that individuals faced with discrimination may activate coping resources to mitigate stress resulting from these experiences (Liang & Fassinger, 2008, Reddy & Crowther, 2007), including engagement in maladaptive behaviors (Martin, Tuch, & Roman, 2003, Bennett, Wolin, Robinson, 2005). The majority of research in this area has focused on the use of substances such as alcohol and nicotine, although there is reason to believe that other risk behavior such as gambling may serve a similar function. For example, it may help alleviate stress

by conferring an illusion of control (Friedland, Keinan, & Reger, 1992) or providing distraction from negative emotional states (Bergh & Kuehlhorn, 1994; Bradford et al., 1996).

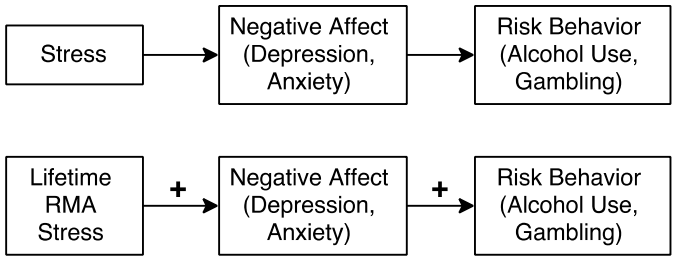



Figure 1.10 Extending the Stress-Coping Model for racial microaggressions.

### 1.5.3 *Transactional Model of Stress: Cognitive Appraisal and Coping*

Although negative affect is a logical link between stress and health outcomes, in Folkman and Lazarus' (1988) conceptualization of stress, outcomes are not merely a response to negative affect. Rather, the stress process includes interpretations of stressful events and one's capacity to adapt ("cognitive appraisal"), emotional and behavioral changes ("stress responses"), and effects of these changes ("consequences"). Thus, two important components of the stress process that have sometimes been overlooked in research invoking basic Stress-Coping models include an individual's evaluation of what is happening (and its' significance on their well-being), counterbalanced by their coping resources (efforts in thought and behavior to manage these demands). Whereas the Stress-Coping framework suggests that negative outcomes (e.g., risk behavior) result directly from negative affective states, the Transactional Model of Stress posits that negative outcomes result when stressors overcome available resources. Therefore, psychological stress is the relationship between the individual and the environment that is appraised as potentially endangering to one's well-being. Two critical processes are proposed to mediate this relationship: (1) cognitive appraisal and (2) coping.

*Cognitive Appraisal.* Cognitive appraisal is an individual's categorization of a given incident with respect to well-being. That is, when an individual is faced with a stressful event, they evaluate whether it will impact their well-being, and if so, in what ways (Folkman, Lazarus, Dunkel-Schetter, DeLongois, & Grue, 1986). The concept of appraisal was first introduced by Arnold (1960) and integrated into stress processing theory by Lazarus (Lazarus 1966; Lazarus & Launier, 1978). It is based on the idea that the outcome of stress is dependent on actual

expectancies that individuals have about the significance and outcome of a stressful encounter. Its addition to the model is helpful in explaining individual differences in quality, intensity, and duration of an elicited emotional response to stressors that are objectively equal. Described as *"an evaluative process that determines why and to what extent a particular transaction or series of transactions between the person and the environment is stressful"* (p. 19), cognitive appraisal is thought to mediate the "stressfulness," or impact, of events (Figure 1.11).

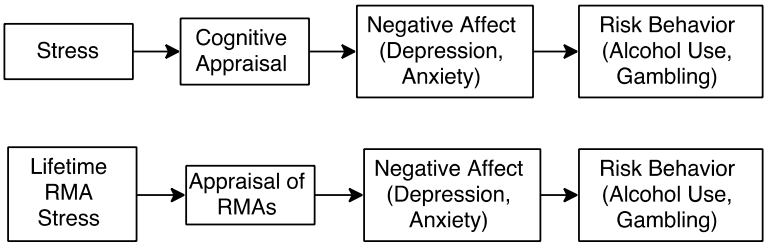



Figure 1.11 Extending the Transactional Model of Stress for racial microaggressions.

Lazarus and Folkman (1991) developed a comprehensive theory that distinguishes three basic forms of appraisal in the stress process. These forms depend on different sources of information. Primary appraisal determines what is at risk in the stressful counter and whether the encounter is irrelevant (i.e., not relevant to the individual's well-being), benign/positive, or stressful. Primary appraisals of stressful situations can take one of three forms: harm/loss (i.e., damage the person has already sustained), threat (i.e., anticipated harms or losses), or challenge (i.e., events that hold potential for mastery or gain). *Secondary appraisal* is a judgment concerning what might be done and serves as an evaluation of the benefits and consequences of a particular coping strategy, given the person's goals and constraints. Lastly, *reappraisal* is a successive valuation that is based on new information obtained from the environment and/or individual during the event. This level differs from primary appraisal only in that it follows an earlier cognitive evaluation.

*Coping.* In this model, attempts to cope with stressful encounters directly influence outcomes. Lazarus & Folkman (1984) define coping as the *"constantly changing cognitive and behavioral efforts to manage specific external and internal demands that are appraised as taxing or exceeding the resources of the person"* (Lazarus & Folkman, 1984, p. 141). Coping is not considered a personality trait or style that remains stable across situations; rather, it is a set of strategies that are available in specific situations (e.g., in response to racial microaggressions).

There are at least three important considerations in this conceptualization: (1) coping need not be a completed "successful" act, but an effort has to be made; (2) this effort need not be expressed in actual behavior, but can be directed to cognitions as well; and (3) a cognitive appraisal of the taxing situation is a prerequisite of initiating coping attempts.

Indeed, a large body of evidence suggests that psychological consequences of social stress are mediated by personal coping behaviors (Figure 1.12) (Billings & Moos, 1981; Folkman, 1984; Lazarus, 2000; Lazarus & Folkman, 1984; Pearlin, Lieberman, Meragham, Mullan, 1981), and some evidence suggests that the psychological effects of discrimination also depend on coping (Dion, Dion, & Pak, Gee, 2002, Krieger, 1990, Noh et al., 2003). Thus, coping is thought to be a more proximal mediator of the influence of negative experiences on outcomes.

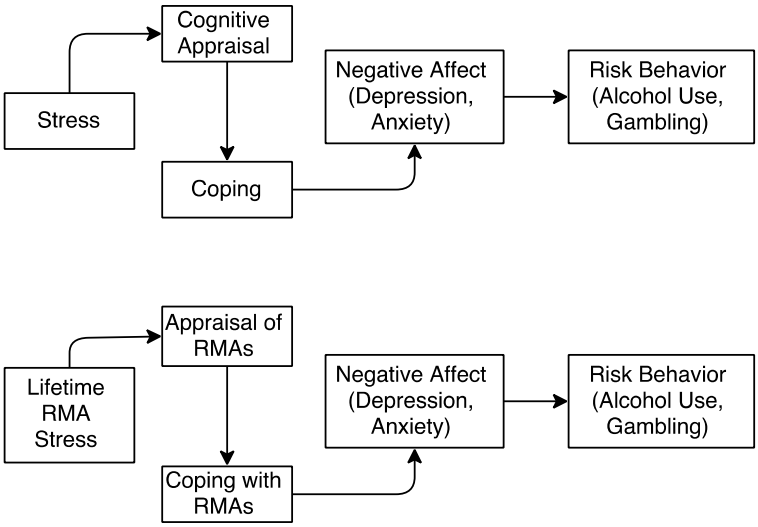



Figure 1.12 The Transactional Model of Stress for racial microaggressions with coping.

Although there are a number of different coping strategies an individual may employ when facing a stressful situation, a well-known approach suggested by Lazarus & Folkman (1984) suggests that coping responses may broadly take one of two forms: (a) emotion-focused coping or (b) problem-focused coping. Emotion focused coping is directed toward internal emotional states rather than external situations that trigger emotional responses. This type of coping often occurs when an appraisal of harm or loss has been made (i.e., that nothing can be done to modify the harmful, threatening, or challenging environmental conditions). Avoidant strategies are used to alter or regulate the individual's emotional response and includes denial, self-distraction, minimization, self-blame or avoidance (Billings & Moos, 1981; Folkman & Lazarus, 1980;

Holahan & Moos, 1987). However, emotion focused coping may also be active (e.g., venting or cognitive reframing of the impact of a stressor). While avoidant emotional coping is considered maladaptive (Holahan & Moos, 1987), active emotion-focused coping is thought to be adaptive (Folkman & Lazarus, 1985), extending to positive influences on downstream outcomes (e.g., psychological functioning and risk behavior). In contrast, problem-focused coping functions to minimize the harmful effects of a perceived stressor through retrieval of personal control over the stressful situation. This form of coping is more probable when conditions are appraised as amenable to change (e.g., appraisal of challenge) and strategies include learning new skills, finding alternative channels of gratification, or developing new standards of behavior. Although some coping strategies, such as seeking social support, may serve both emotion- and problem-focused functions simultaneously (Vitaliano, Maiuro, Russo, & Becker, 1987) and individuals tend to use both emotion- and problem-focused strategies in response to stressful events (Folkman & Lazarus, 1980), prior research (e.g., Schmitz & Crystal, 2000; Fleishman & Fogel, 1994) has found no significant correlations between strategies, suggesting that they are distinct constructs and not simply poles along a single continuum (Figure 1.3).

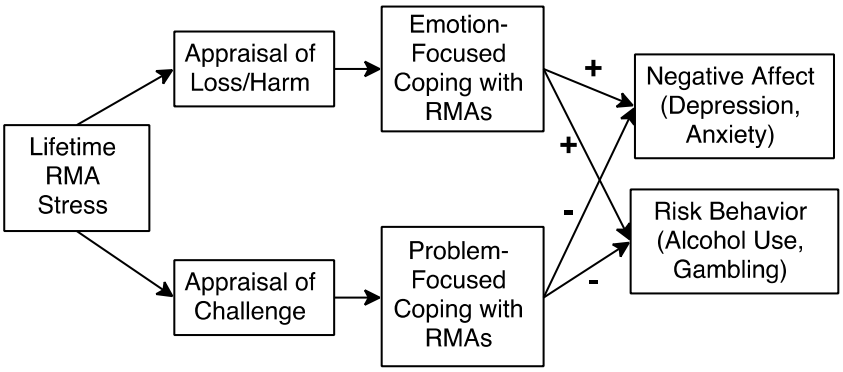



Figure 1.13 Elaborating the Transactional Model of Stress for racial microaggressions.

Most studies examining how individuals cope with racism have used Lazarus and Folkman's problem- versus emotion-focused conceptualization. For example, a problem-focused strategy in response to an experience of racial discrimination may involve confronting a perpetrator or reporting an incident to the authorities. In contrast, emotion-focused coping may involve seeking support from others for emotional release and advice. In a review of coping strategies for racism, Brondolo and colleagues (Brondolo, Ver Halen, Pencille, Beatty, & Contrada, 2009) highlight

possible ethnic/racial differences in how individuals respond to instances of racial discrimination. For example, Krieger and Sidney (1996) found that African American and Caucasian respondents endorsed problem-focused coping, with 69-78% reporting that they would "try to do something and talk to others" and only 17-19% reporting they would "accept it as a fact of life". In contrast, across multiple studies, individuals of Asian descent appear to engage in more avoidant strategies (Kuo, 1995), preferring to "regard [a racist event] as a fact of life, avoid it or ignore it" (Noh et al., 1999).

While it is thought that avoidant coping strategies are generally maladaptive (Holahan & Moos, 1987), Yeh, Arora, and Wu (2006) have argued that forbearance coping (enduring or tolerating such events) is culturally congruent with Asian collectivistic values of harmony that hold the importance of the group over the individual (Noh, Beiser, Kaspar, Hou, & Rummens, 1999). In a sample of Southeast Asian refugees in Canada, Noh et al. (1999) found that emotion-focused coping diminished the association between perceived discrimination and depression, suggesting that problem-focused coping strategies may not be as effective in cultural groups that subscribe to different (group-oriented) values and norms. However, positive reinterpretation, active coping, religious coping, restraint, acceptance and planning have generally been associated with psychological health in Asian Americans (Vaughn & Roesch, 2003) whereas avoidance has been associated with depression (Cheung & Park, 2010). For example, among Korean immigrants in Toronto, Noh & Kaspar (2003) found that active, problem-focused coping styles were more effective in reducing the impact of perceived discrimination on depression, while frequent use of passive, emotion-focused coping was associated with higher levels of depression. In another sample of Asian American college students, use of cognitive restructuring and problem-solving coping strategies buffered the effects of racism on psychological well-being (Yoo & Lee, 2005). Among Asian international students, suppressive coping (use of avoidance and denial) exacerbated the relationship between discrimination and depression (Wei, Ku, Russell, Liao, & Mallinckrodt, 2008).

### 1.5.4 *Integrated Stress Model: Cognitive Appraisal, Coping, and Negative Affect*

The Stress-Coping Model of Addiction suggests that negative affect mediates the impact of stress on substance use whereas the Transactional Model of Stress suggests that appraisal and coping function as mediators on psychological functioning. An Integrated Model of Stress was

proposed to better understand the relationships between racism-related stress (specifically, racial microaggression stress), psychological functioning, and risk behavior (Figure 1.14).

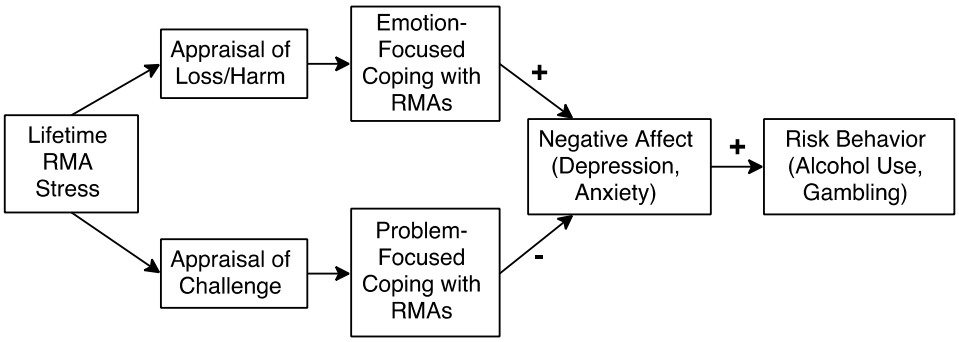



Figure 1.14 Elaborating the Integrated Stress Model for racial microaggressions.

## 1.6 From Stress to Health: Examining the Role of Racial Socialization

### 1.6.1 *Racial Socialization as a Family Process*

How do individuals learn about race and racism? Do these teachings impact how they are affected by experiences of racial discrimination throughout their lives, and if so, by what mechanism? The family is thought to provide an important context that can either exacerbate or combat risk (Werner, 1995; Luthar, Cichetti, & Becker, 2000; Masten & Garmezy, 1995) and messages parents give to their children about their racial identity and how to cope with race-based discrimination are likely to have significant implications for psychological functioning. In regards to African American families, M.F. Peters (1985) asserts that racial socialization is a *"responsibility of raising physically and emotionally healthy children who are Black in a society in which being Black has negative connotations"* (p. 161).

Although the family has long been recognized as a key context for young adult adjustment and socialization, few studies have examined how family processes influence the effects of discrimination (Sabatier & Berry, 2008), particularly in Asian Americans. In the only study located with an Asian-American sample, Juang and Alvarez (2010) found that among Chinese American college students, greater family conflict exacerbated negative effects of discrimination (loneliness, anxiety, somatization), whereas greater family cohesion buffered the negative effects

of discrimination. These factors may be especially salient in Asian cultures that emphasize family interdependence, obligation, and cohesion.

Racial socialization is a family-level developmental construct that has been implicated as an important protective factor against the effects of racial discrimination on negative outcomes. Rotherman and Phinney (1987) define racial socialization as *"the developmental processes by which children acquire the behaviors, perceptions, values, and attitudes of an ethnic group, and come to see themselves and others as members of the group"*. This construct describes the interaction and communication between children and their parents regarding their shared cultural heritage and unique challenges navigating the complex social, cultural, political, and historical landscape of the United States as people of color. While this process occurs in all families to some extent, it may be a more salient component of parenting in racial and ethnic minority families.

Various dimensions of racial socialization have been proposed in the literature; however, there are commonly accepted general factors: cultural socialization, preparation for bias, promotion of mistrust, and egalitarianism (Hughes, Rodriguez, Smith, Johnson, Stevenson, & Spicer, 2006), although these themes may differ across racial groups. Cultural socialization refers to training in the history and heritage of the family's racial group(s) and is thought to be associated with the development of ethnic identity and pride. Preparation for bias refers to training in awareness of racism and discrimination and how to cope with discrimination experiences. Parents may teach their children different ways of responding emotionally (e.g., anger, shame) or behaviorally (e.g., avoidance, approach, self-affirmation) (Moos, 2002). Parents may also promote mistrust and teach their children to be cautious of individuals of different racial backgrounds, especially those belonging to the majority or other ethnic/racial minority groups. Finally, egalitarianism refers to teaching children that all people, regardless of their racial and ethnic backgrounds, are equal.

Racial socialization is thought to foster the adjustment of adolescents in the face of race-based stressors. Miller, MacIntosh (1999), and Ward (1999) suggest that emphasizing racial issues and prejudice is critical for adolescent development. Some argue that racial minority adolescents without an "internalized awareness of racism" may have fewer or ineffective strategies to cope with experiences of racial discrimination and racism-related stress (Stevenson, Reed, Bodison, & Bishop, 1997).

### 1.6.2 *Peer-Based Racial Socialization*

While parents provide training on race and racism as part of childrearing, these conversations are transactional and their effectiveness may also depend on other factors (Bentley, Adams, & Stevenson, 2009), such as peer messages. Although previous work suggests that childhood through adolescence may constitute a critical period for intervention through racial socialization (Fisher & Shaw, 1999), the potential influence of peer-based racial socialization on perceptions and negative consequences of racial discrimination has not previously been studied. This process may be of particular importance during late adolescence and early adulthood given a large body of evidence suggesting the strength of peer influences on adolescent and young adult risk behaviors (e.g., Ferguson & Meehan, 2011; Kendler, Gardner, & Dick, 2011), although data on Asian Americans is limited (Nakashima & Wong, 2000).

### 1.6.3 *Racial Socialization and Outcomes*

In their review of the literature, Hughes and colleagues (2006) found that racial socialization was associated with several outcomes including racial identity in African American adults, and self-esteem, coping with racism-related stress, academic grades, and psychosocial outcomes (e.g., anger, depression) in African American adolescents. In a sample of African American college students, Fischer and Shaw (1999) provided the first empirical data supporting the theory that racial socialization attenuates the negative impact of race-based discrimination. In this study, students who reported more racial socialization during childhood and adolescence did not display a relationship between discriminatory experiences and mental health outcomes; whereas the relationship held for students who reported less racial socialization. Further, Fischer and Shaw found that while experiences preparing children for racist events emerged as a moderator, self-reported beliefs about racial socialization did not. Based on these supplemental findings, the authors suggested that childhood through adolescence may represent a critical period for parental intervention. Another study of African American adolescents found that racial socialization was associated with use of adaptive coping strategies in response to perceived discriminatory experiences (Scott, 2003), which was predictive of better outcomes compared to avoidant strategies (Moos, 2002; Noh & Kaspar, 2003). However, greater racial socialization may also be related to increased racism-related stress depending on content. For example, Bynum and

colleagues (2007) found psychological stress was reduced when African American adults received messages about cultural resources they could use to cope with racism; however, messages about race and racism was associated with increased levels of racism-related stress.

It is not clear if racial socialization acts as a compensatory factor that equalizes negative outcomes (Figure 1.15) (Zimmerman, Bingenheimer, and Notaro, 2002), or as if it acts indirectly by influencing factors that mediate the association between level of risk and negative outcomes. Neblett, Terzian, & Harriott (2010) proposed three pathways by which racial socialization may act through such factors on downstream health outcomes by: a) reducing racism-related distress directly (Figure 1.16); b) conveying effective cognitive appraisals for racially-stressful events (Figure 1.17); or c) enhancing ways of coping with racism-related stress (Figure 1.18).

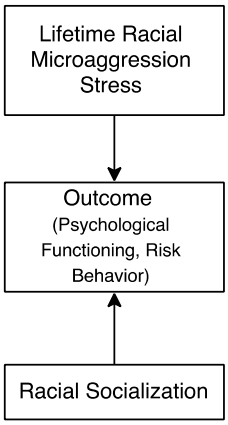



Figure 1.15 Compensatory Model of racial socialization.

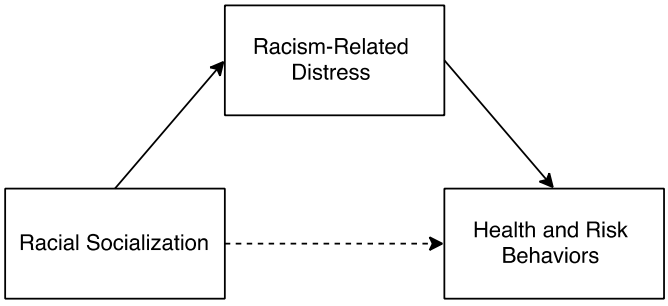



Figure 1.16 Stress Reduction Model of racial socialization.

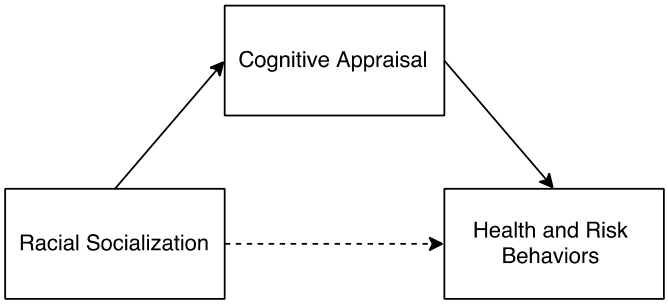



Figure 1.17 Cognitive Model of racial socialization.

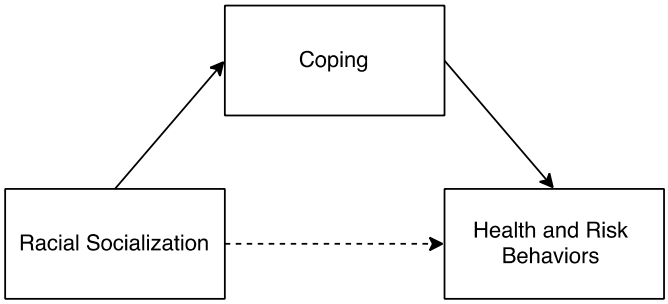



Figure 1.18 Coping Model of racial socialization.

### 1.6.4 *Racial Socialization in Asian American Youth*

Although much scholarly work has focused on the relationship between racial socialization and the effects of discrimination, only a handful of empirical studies have been published examining these associations, most in African American adolescents and young adults. Further, only one study has assessed racial socialization in Asian American families (Alvarez, Juang, & Liang, 2006), despite this construct's theorized importance in the developmental field. Therefore, the unique messages about experiences and beliefs central to Asian American racial development, as well as the pathways by which these messages protect against negative health outcomes are not well known. Previous work on racial socialization processes in non-African American minority groups employed racially non-specific measures or measures developed through research with African Americans. This may overlook potentially important aspects of racial socialization in Asian Americans. For example, one message that may be of importance in this population is the cultural emphasis placed on academic achievement, as it is perceived as one of the few avenues for upward mobility (Gloria & Ho, 2003; Sue & Okazaki, 1990) and a mechanism to cope with racism (Kibria, 2002).

Another socialization message may advise conformity to cope with ethnic/racial differences, echoing traditional Asian values that dictate primacy of the collective over the individual and the importance of the preservation of social relationships (Tietjen, 1989; Triandis, 1994). Because rates of drinking and "binge" drinking are higher in Caucasian college students compared to Asian Americans (Luczak, Wall, Shea, Byun, & Carr, 2001; Wechsler et al., 1998), this message may inadvertently communicate the need to engage in these behaviors in order to "fit in" with the majority peer group. Indeed, evidence also suggests that Asian American college students endorse higher conformity motives to drink compared to their Caucasian counterparts (Labrie et al., 2011). Thus, while racial socialization has, on the whole, been considered a protective factor against mental health problems in African Americans, messages specific to Asian American racial development may actually increase the risk of these problems (e.g., demands on academic performance may result in distress, and more distally, alcohol use or other risk behavior).

## 1.7 Other Race- and Culture-Specific Considerations

In Harrell's Model of Racism-Related Stress and Well-Being, the effects of racism-related stress are thought to be dependent on race- and culture-relevant factors, arguing for the inclusion of factors beyond cognitive appraisal and coping that are relevant for a given ethnic/racial minority group. Given the focus on Asian Americans, some data suggest the importance of examining acculturation levels, ethnic identity, and face loss concern in order to better understand how racism-related stress affects individuals of this group.

*Acculturation.* Acculturation is the process in which members of one cultural group adopt the beliefs, attitudes, and behaviors of another group. It is often studied as a unidimensional construct in which acculturation to one group (e.g., Western majority culture) precludes measurement of acculturation to another group (e.g., Asian culture of origin). One study found that higher levels of Western acculturation and older age in Chinese American adolescents were associated with increased perceptions of discimination, and subsequently higher levels of depressive symptoms (Juang & Cookston, 2009).

*Ethnic/Racial Identity.* Ethnic/racial identity is a multidimensional construct describing an individual's behaviors, knowledge and awareness of cultural beliefs and values, and participation in traditions (R.M. Lee, 2005; Phinney & Ong, 2007). Erikson (1968) notes that adolescence and young adulthood is the crucible of identity development, a process that involves the integration

of different dimensions of a youth's life, including, for example, family practices, cultural beliefs, religious beliefs, hopes and aspirations, and ethnic/racial identity. Individuals develop multiple identities organized as a hierarchy within the self (Serpe & Stryker 1987; Stryker 1987). In the process of developing ethnic/racial identity, Asian American youth begin to question who they are racially and what it means to be Asian American (see Tatum, 1997 for a discussion of ethnic/racial identity development in African American youth). A central aspect of ethnic identity is a sense of commitment to one's ethnic/racial group (Phinney 1991).

Results from several studies consistently indicate that higher levels of ethnic identity among ethnic/racial minorities tends to be positively associated with indices of well-being (Noh et al. 1999; Williams, Spencer, & Jackson 1999; Iwamoto & Liu, 2010). However, its role in moderating or mediating the effects of perceived discrimination are unclear. Discriminatory experiences that derogate a valued identity may cause stress (Noh et al. 1999; Phinney, 1991); alternatively, a strong sense of identification may provide a sense of social belonging that mitigates social threats caused by racism (Anderson 1991; Phinney 1991; Phinney & Chavira 1992). Findings from two epidemiological studies with national samples suggest that ethnic identity acts as a protective factor against depressive symptoms (Mossakowski, 2003; Yip et al., 2008); however, other studies have found that higher levels of ethnic identity may exacerbate the effects of discrimination on negative affect (R.M. Lee, 2005; Yoo & Lee, 2005, 2008).

*Face Loss Concern.* Lin (2010) and Leets (2003) suggest that Asian Americans may be profoundly affected by racial slights due to cultural emphasis on social harmony and conditioned sensitivity to social communication. Loss of face, or the loss of one's social integrity or standing, is an social construct common in Asian social relations (Sue & Morishima, 1982). Known as "chaemyun" among Koreans, "haji" among Japanese, "hiya" among Filipinos, and "lien" or "mianzi" among Chinese, face serves both the function of *"a social sanction for enforcing moral standards"* as well as that of *"an internalized social sanction"* (Hu, 1944, p. 62; Hwang, 1987). Concern about loss of face is a culture-bound affective construct and involves awareness of social norms, structure (i.e., an individual's own social standing and of others' relative to their's), and obligations within a social group that are *"incurred through a self-conscious manipulation of face and related symbols"* (Yang, 1945). Because social approval plays an important role in self-esteem development among Asian American youth, social threats posed by microaggressions may also result in negative outcomes for individuals through loss of face (e.g.,

Tuan, 1998). While loss of face may represent an Asian culture-specific way of responding to social threats, previous research has not examined how it relates to racism-related threat.

## 1.8 Methods of Assessing Racial Discrimination Against Asian Americans

Historically, studies have been limited by the use of single or few-item measures assessing experiences of racial discrimination. Although no single instrument has been specifically developed to assess experiences of racial microaggressions in Asian Americans, a few tools exist that measure self-reported racial discrimination and racism-related stress in this population.

### 1.8.1 *Commonly Used Measures*

The *Asian American Racism-Related Stress Inventory* (AARRSI; Liang et al., 2004) assesses the degree to which individuals are stressed or bothered by experiences with racism that are unique to Asian Americans. This scale includes twenty-nine items divided into three subscales. The Sociohistorical Racism subscale measures the amount of stress resulting from awareness of historical and institutional racism (e.g., "You notice that U.S. history books offer no information of the contributions of Asian Americans"); the General Racism subscale assesses stress associated with one's experiences with stereotypes of Asian Americans (e.g., "Someone tells you that they heard that there is a gene that makes Asians smart"); and the Perpetual Foreigner Racism subscale measures the stress related to the perception that all Asian Americans are immigrants and are not native Americans (e.g., "You are asked where you are really from"). Respondents are asked to rate the level of stress associated with each racial experience using a 5-point Likert scale ranging from 1 ("this event never happened to me or someone I know") to 5 ("this event happened and I was extremely stressed"). This measure was developed using samples of Asian American college students and demonstrates good reliability and construct validity. While the AARRSI is novel in its focus on Asian American experiences with racism, only eight items reflect "day-to-day" experiences with racism (Liang & Fassinger, 2007).

The *Race-Related Stressor Scale for Asian American Vietnam Veterans* (RRSS; Loo et al., 2001) is a measure of exposure to race-related stressors specific to military and theater of war

settings. It was designed for use with Vietnam era combat Veterans of Asian descent, and not for use with the general Asian American population.

The *Everyday Discrimination Scale* (Williams, Yu, Jackson, et al., 1997) has been used in large population-based studies and was originally developed to examine routine and mundane experiences of discrimination among African Americans. It has since been adapted for studies of Filipino Americans, Chinese Americans, Vietnamese Americans, and other Asian Americans (Mossakowski, 2003; Gee, Spencer, Chen, et al., 2007). This scale includes nine items that assess the frequency of chronic and routine unfair treatment, including being harassed, being treated with less respect, and receiving poorer services.

The *Subtle and Blatant Racism Scale for Asians American* College Students (SABR-A$^2$; Yoo, Steger, & Lee, 2005) is a measure of overt and covert experiences of racism unique to Asian Americans. It includes ten items that assess the frequency with which an individual has encountered various overt and covert forms of racism, differentiated based on the degree to which the act was based on implicit or explicit racial bias. "Subtle" (or covert) racism refers to discrimination attributable to implicit bias (e.g., "In America, I am viewed with suspicion because I am Asian") and "blatant" (or overt) racism refers to discrimination attributable to explicit bias ("In America, I have been physically assaulted because I'm Asian"). Respondents are asked to rate each item using a 5-point Likert scale ranging from 1 ("almost never") to 5 almost always"). The scale was developed using samples of Asian American college students and demonstrates good reliability and construct validity.

### 1.8.2 *Practical Issues in Measuring Stress*

Difficulty measuring stress as a process poses a fundamental and practical problem in developing and testing theories that are based on a stress framework. Common procedures to assess racism-related stress tend to fall under stimulus-based (examining the frequency of events that trigger stress) or response-based approaches (examining distress/feelings experienced as a result of the triggering event). Further, some scales that assess an individual's perception of stress may ask them to evaluate whether or not they experienced an event and how distressed they were within the same response string, collapsing data on both stimulus and response and overlooking the frequency with which each event occurred. For example, the AARRSI (Liang & Kim, 2004), an instrument developed to assess racism-related stress in Asian Americans that has been used in

multiple studies, asks respondents to rate each item using a 5-point scale, adapted from Utsey and Ponterotto (1996). Liang and Kim (2004) note issues with this scale in terms of participant confusion and analytic interpretation, suggesting that the "appropriateness of using this type of scale is an area for further clarifying research". In comparison, the Subtle and Blatant Racism Scale for Asian Americans (SABR-A$^2$; Yoo, Steger, & Lee, 2010) asks repondents to simply rate the frequency with which they have experienced various racist events in their lives (Table 1.2).

Table 1.2. Comparison of Item Response Scales from the AARRSI and SABR-A$^2$

| AARRSI Response Scale | SABR-A$^2$ Response Scale |
|---|---|
| 1 = "This event has never happened to me or someone I know" | 1 = "Almost never" |
| 2 = "This event happened but did not bother me" | 2 = "Rarely" |
| 3 = "This event happened and I was slightly bothered" | 3 = "Sometimes" |
| 4 = "This event happened and I was upset" | 4 = "Very often" |
| 5 = "This event happened and I was extremely upset". | 5 = "Almost always" |

Responses to the AARSI provide some information on both stimulus (incidence) and response (stressfulness); however, it does not assess the frequency with which each event occurred. In contrast, the SABR-A$^2$ provides information on the frequency of specific events, but not the stressfulness of each event. Given that the conceptualization of racial microaggressions suggests that harm is caused by the *cumulative* denigration of an individual's identity (Sue et al., 2008), it is argued that both response sets (frequency and stressfulness) are necessary.

Additionally, most racism-related stress scales instruct respondents to consider events that occurred in the past year or within a specified time frame prior to the assessment. Schwarzer and Schulz (p. 32) suggest that because instruments often include a numerous and wide range of events that may have occurred at different times in a respondent's life, any time frame imposed on the questionnaire causes a reporting bias: *"Moreover, some events are short term whereas others are long term. The accuracy of remembering and reporting applies to a number of events but not to all of them. Some events are remembered for a lifetime. Their psychological and health consequences can also last for an extended time."* Thus, the restriction of events to the past year may lead to the inadvertent omission of such profound and past experiences, arguing for the inclusion of *lifetime* events and the combined assessment of their frequency and stressfulness.

## 1.9 Current Challenges and Gaps in Research

Because research on racial microaggressions is nascent, there are several current challenges to understanding the nature and effects of this form of contemporary racism. First and foremost is the omission of subtle racism and microaggressions from counseling and clinical research agendas (Sue et al., 2007), which has resulted in limited work investigating health correlates of subtle discrimination in Asian Americans, and even fewer studies on mediators and moderators of these associations.

A second challenge is the lack of measurement tools designed to tap into themes of microaggressions salient to specific racial groups. While several race-related stress and discrimination measures exist, only one has been designed for use in Asian American groups: the AARRSI (Liang, Li, & Kim, 2004). Although Sue et al. (2007) suggest that the AARRSI includes items that reflect themes of common racial microaggressions experienced by Asian Americans, there are notable departures: themes such as exoticization of Asian women, denial of racial reality, invisibility, and invalidation of interethnic differences are not present on the measures as it is. Several questions focus on sociohistoric racism (individual or institutional acts that reflect transgenerational and vicarious experiences with racism) and only eight items reflect "day-to-day" experiences with racism, as described by the authors (Liang & Fassinger, 2007). Further, while it provides data on the incidence of racial microaggressions (i.e., "This did not happen" versus "This happened") and their severity (i.e., distress resulting from the event), it does not assess the frequency of events. Because the effects of racial microaggressions are theorized to be additive over time, it may be important to assess frequency of exposure to these events to gain a fuller understanding of their severity and impact on psychological health.

Although it is thought that the cumulative potential effects of racial microaggressions on people of color may be particularly distressing and demoralizing, a survey of the literature reveals only a few published studies that focus specifically on racial microaggressions and their effects on various groups. Additionally, no study has previously examined the "cumulative" impact using a measure of *lifetime* racial microaggression stress.

While similarities can be drawn between Sue's Microaggression Processing model and stress theory models, no study to our knowledge has quantitatively evaluated how individuals respond cognitively and behaviorally to racial microaggressions, and how this chain of processing affects

mental health outcomes such as depression, anxiety, alcohol use, and gambling behavior. Although the weight of evidence supports the hypothesis that racial discrimination jeopardizes the mental health of racial and ethnic minority group members (Rabkin & Struening, 1976; Moritsugu & Sue, 1983; Kessler & Neighbors, 1986; Williams, 1994), not much is known about the sources of individual variability in response to experiences of discrimination. In general, stress theory is invoked to explain the discrimination-health relationship; however, few studies have actually tested causal models, and none have incorporated both drinking and gambling as risk behavior outcomes.

Given data suggesting that Asian American college students are at increased risk for problem gambling (Lesieur et al., 1991; Cronce et al., 2001), it is imperative to identify risk and protective factors for this behavior. Although gambling behavior has not previously been examined within a stress theory framework for Asian Americans, there are several explanations for why gambling may serve as a tool to cope with racism-related stress. For example, as discussed earlier, it is possible that gambling may provide a means to cope with negative emotional states that result from racism-related stress by providing distraction and/or a sense of control or mastery (Bergh & Kuehlhorn, 1994; Bradford et al., 1996; Stewart et al., 2008).

Little is known about what racial socialization processes entail among non-African American families and peer groups. Given that racialization differs by group, it is likely that parenting practices, specific messages, and the effectiveness of these messages differ as well. Only one comparative study has examined these processes in a group of non-African American adolescents. Hughes (2003) found that racial socialization was an important feature of parenting across Latino and African American families, but that African American parents were more likely to prepare children for bias, especially if they had personal experiences with discrimination. Based on this research, it has been suggested that future work examine other dimensions of racial socialization that may be more relevant to other racial and ethnic minority groups. For example, while African American families may tend to actively engage children in discussions about race (Johnson, 2003), little is known about the methods and messages that families of other ethnic/racial backgrounds use to socialize their children to handle issues of race and racism (Hughes, Rodriguez, Smith, Johnson, Stevenson, & Spicer, 2006). The available evidence (although anecdotal) suggests that open discussion of these uncomfortable issues may be discouraged or avoided in Asian American families (Garrod & Kilkenny, 2007). Further,

Asian cultural values and communication styles dictate a preference for indirect strategies over self-assertiveness (Kaylish & Reynolds, 1976) and this may extend into teachings about race and racism. More research is greatly needed to better understand racial socialization in Asian American families and how socialization messages influence how Asian American young adults process, cope, and are affected by discrimination.

Considering the above issues, the current study sought to address the following outstanding questions in the field:

1. Does the stress load from racial microaggressions (RMA) accumulate over time? That is, does *cumulative (or "lifetime") RMA stress* from these experiences affect psychological functioning and risk behavior?
2. Does measuring lifetime RMA stress provide more information about the relationship between racism and health beyond average frequency of these experiences?
3. If lifetime RMA stress is positively associated with risk behavior, is this mediated by negative affect? (Stress-Coping Model)
4. Are there common appraisals and ways of coping with these experiences?
5. Do individuals think about these situations or cope differently based on how much stress they have experienced in their lives?
6. Do different types of appraisals (harm/loss versus challenge) lead to different ways of coping (avoidant emotional coping versus problem-focused coping) and impact psychological functioning and risk behavior outcome? (Transactional Model of Stress, Integrated Stress Model)
7. Do Asian American young adults report racial socialization experiences? What types of experiences are common? How do specific messages impact lifetime stress from RMAs?
8. Do these messages mitigate the impact of lifetime RMA stress on health?
9. How do other culture- and race-specific factors change the way or help explain how lifetime RMA stress impacts health?

# Chapter 2. RESEARCH DESIGN AND METHODS

## 2.1 SPECIFIC AIMS

The overall aims of the current study were to better understand racial microaggressions against Asian American young adults, quantify a measure of lifetime racial microaggression stress, examine associations with psychological functioning and risk behavior, explore mechanisms underlying these associations, identify sources of individual variability, and ultimately inform clinical practice.

| | |
|---|---|
| Aim 1 | Modify existing measures to develop a scale that assesses lifetime racial microaggression (RMA) stress specific for use in Asian Americans |
| Hypotheses | 1. The developed scale will exhibit internal consistency and construct validity compared to other measures of perceived racial discrimination.<br>2. Factor analysis will reveal three unique first-order latent constructs reflecting Sue's taxonomy of racial microaggressions (racial microassault, racial microinsult, racial microinvalidation). |
| Aim 2 | Assess relationships between lifetime RMA stress, psychological functioning, health, and risk behaviors (depression, anxiety, social anxiety, alcohol use, and quality of life scales). |
| Hypotheses | 1. Lifetime RMA stress will be associated with psychological functioning, health, and risk behavior above and beyond the traditional measure of average frequency of events.<br>2. Lifetime RMA stress will be associated with psychological functioning, health, and risk behavior above and beyond a measure of experiences of overt racism. |
| Aim 3 | Examine the relationships between lifetime RMA stress, psychological functioning, and risk behaviors using the following theoretical models as analytic frameworks:<br>1. Stress-Coping Model of Addiction<br>2. Transactional Model of Stress<br>3. The Integrated Stress Model |
| Hypotheses | 1. Negative affect mediates the effect of lifetime RMA stress on risk behavior **(Stress-Coping Model of Addiction)**<br>2. Cognitive appraisal and coping separately mediate the effect of lifetime RMA stress on psychological functioning and risk behavior.<br>a. Appraisals of harm/loss and avoidant emotional coping are associated with worse outcomes<br>b. Appraisal of challenge and problem-focused coping are associated with better outcomes<br>3. There are three causal pathways by which lifetime RMA stress operates on outcomes **(Transactional Model of Stress)** that include the following segments:<br>a. Appraisals of harm/loss lead directly to avoidant emotional coping whereas<br>b. Appraisals of challenge lead to problem focused coping<br>c. Appraisals of challenge lead to active emotional coping<br>4. Adding negative affect as a causal mediator in the Transactional Model of Stress will better describe the pathway by which lifetime RMA stress operates on risk behavior **(Integrated Stress Model)** |

| | |
|---|---|
| Aim 4 | Examine models of racial socialization |
| Hypotheses | 1. Asian Americans report family- and peer-based racial socialization<br>2. Specific types of messages are associated with outcomes<br>3. Racial socialization is a compensatory factor **(Compensatory Model)**<br>4. Racial socialization improves outcomes by directly decreasing lifetime RMA stress **(Stress Reduction Model)**<br>5. Cognitive appraisal mediates the effects of racial socialization on outcomes **(Cognitive Model)**<br>6. Coping mediates the effects of racial socialization on outcomes **(Coping Model)** |
| Aim 5 | Examine how culture- and race-specific factors influence the relationship between RMA stress and outcomes (exploratory) |
| Hypotheses | 1. Acculturation moderates the relationship between RMA stress and outcomes, acting as either a risk factor or a protective factor<br>2. Ethnic/racial identity moderates the relationship between RMA stress and outcomes, acting as either a risk factor or a protective factor<br>3. Face loss concern mediates the relationship between RMA stress and outcomes. |

## 2.2 Subject Recruitment and Screening

### 2.2.1 *Recruitment Site*

Participants were recruited from a screening sample of a larger study of college student gambling and co-occurring substance use disorders, conducted through the Center for the Study of Health and Risk Behaviors at the University of Washington (UW). The UW has an undergraduate population of nearly 28,000 students (52% women). With respect to race and ethnicity, 1.1% of the population are American Indian or Alaskan Native, 21% Asian, 0.6% Hawaiian or Pacific Islander, 2.9% African American, and 52.5% Caucasian, with 4.2% identifying as being of Hispanic ethnicity across all races (6.6% are International Students). The freshmen class of 2009-10 (the most recent data available) consisted of 5338 students and was demographically similar to the total campus population (UW Registrar's Office).

### 2.2.2 *Recruitment and Screening*

All study screening and assessment were conducted via the Internet using DatStat Illume, a comprehensive data management and data collection software system hosted on a secure web server supporting 128-bit encryption. Studies indicate comparable psychometric properties and

ethnic and gender representation between paper and Internet survey methods (Geisner et al., 2004; Miller, 1999).

During Fall Quarter of 2013, a random sample of freshman undergraduates at UW were screened for participation in a large-scale study of college student gambling (RCT of Web Vs. In-Person SUD and Comorbidity Treatment, "Project Chance"; PI: Larimer, 5R01DA025051-05) funded by the National Institute on Drug Abuse (NIDA). The screening assessment for Project Chance served as the source of participants for the current study. From the sample of students who participated in this screening, individuals who self-identified as Asian and consented to be contacted for additional studies were sent emails regarding participation in the current study. The first email contact provided information about the study and described it as a project on "college experiences and health" in Asian American students. This email message also included a study Web site link for responding, a secret PIN for accessing the site, and contact information for the study investigators (an email address and phone number). The information statement was available on the study Web site and provided all elements of informed consent for participation. The consent form included a description of the range and types of questions asked and participants were provided full information regarding the risks and benefits of participation. Those who responded and completed the assessment received a $20 check by mail and were entered into a drawing for a chance to receive an additional $100 Amazon.com gift certificate. Based on prior experience with this methodology, it was estimated that approximately 75% of the sample contacted for participation in the study would respond and agree to participate (Grossbard et al., 2009).

## 2.3 PROCEDURES

The current study commenced in the 2013-2014 school year and consisted of a single cohort recruited from the Fall, 2013 screening assessment of Project Chance. Students who participated in this screening phase of the parent study completed several online questionnaires assessing their alcohol use and gambling behaviors and provided information on demographic variables. All screening participants who endorsed an Asian racial background and consented to be contacted for future studies ($N$ = 384) were contacted by email for participation in the current study, which entailed completion of several online questionnaires (see Measures section for details). In efforts to maximize response rate, a total of three reminder emails were sent to

prospective participants throughout the course of the data collection phase of the study, including reminder emails to those who started the survey, but did not complete and submit their data. Of the 384 individuals originally screened into the current study, 281 (73%) participated.

## 2.4 MEASURES

*Alcohol, Smoking and Substance Involvement Screening Test (ASSIST; WHO, Humeniuk & Ali, 2006).* The Alcohol, Smoking and Substance Involvement Screening Test is a 7 item measure developed for the World Health Organization (WHO) by an international group of substance abuse researchers to detect and manage substance use and related problems in primary and general medical care settings. The items pertaining to alcohol use were included in the current study. The ASSIST is well-studied and shown to be a comprehensive, cross-culturally relevant instrument that demonstrates feasibility, reliability, validity, and flexibility across clinical and community settings.

*Asian American Multidimensional Acculturation Scale (AAMAS: Chung, Kim, & Abreu, 2004).* The Asian American Multidimensional Acculturation Scale is a 45 item measure adapted largely from the widely used Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA; Suinn, Ahuna, and Khoo, 1992), it was developed in order to address the diversity that exists in the Asian American population and the complex nature of the acculturation process, allowing for measurement of acculturation to different cultural groups. Respondents were asked to rate items on the AAMAS according to two referent groups: their culture of origin and the majority (White) American culture. Each AAMAS scale consists of 15 items rated with a 6-point Likert scale ranging from "Not very much" to "Very much". Previous research indicates good internal reliability (.78-.87) across the three scales and concurrent validity with other measures of acculturation (SL-ASIA) (Chung, Kim, & Abreu, 2004).

*Asian American Race-Related Stress Inventory (AARRSI; Liang et al., 2007).* The Asian American Race-Related Stress Inventory is a 29 item measure that assesses the stress associated with race-specific events that Asian Americans experience. Liang et al. (2004) reported three subscales of the AARRSI: *socio-cultural racism* (reflecting transgenerational and vicarious experiences with either institutional or cultural racism), *general racism* (reflecting day-to-day direct experiences of racism), and *perpetual foreigner racism* (assessing a specific form of

racism that Asian Americans encounter in being presumed to be an Asian national rather than an American citizen). Items from this measure were modified for the current study.

*Cognitive Appraisal of Health Scale (CAHS; Kessler, 1998).* The Cognitive Appraisal of Health Scale is a 28 item measure that assesses how individuals interpret stressful events. It includes four scales measuring the primary appraisal dimensions of *threat* (5 items), *challenge* (8 items), *harm/loss* (9 items), *irrelevance* (5 items), and 5 items measuring the secondary appraisal dimensions of coping options and resources (Folkman et al., 1986). The CAHS was modified by asking the respondent to consider an experience of racial discrimination in lieu of a current "health problem"; for example, "I have a lot to lose because of this health problem," was modified to "I have a lot to lose because of this experience." Higher scores on each scale or item indicated greater agreement with that appraisal.

*Collective Self-Esteem Scale (CSES; Luhtanen & Crocker, 1992).* The Collective Self-Esteem Scale is a 16 item measure that assesses participants' thoughts about a social group to which they belong. Three subscales were included in this study: *membership collective self-esteem* (assessing how the respondent feels about their membership in a social group), *public collective self-esteem* (assessing the respondent's judgments of how others evaluate their social group), and *private collective self-esteem* (assessing the respondent's judgments of how good their social group is). For the purposes of this study, and as recommended by Luhtanen and Crocker (1992), items on the scale were modified to substitute "ethnic/racial group" in lieu of "social group". For example, an item that originally read "Overall, my social group is considered good by others" was modified to read "Overall, my ethnic/racial identity group is considered good by others". Respondents were asked to rate each item on a Likert scale of 1 ("strongly disagree") to 7 ("strongly agree"). Higher scores on the subscales indicate higher levels of membership esteem, public collective self-esteem, private collective self-esteem, and salience on identity. Previous studies have demonstrated subscale coefficient alphas ranging from .64 to .81 (Alvarez & Helms, 2001; Liang & Fassinger, 2008).

*The Brief COPE Inventory (Carver, Scheier, & Weintraub, 1989).* The Brief COPE Inventory is a 28 item measure that assess how individuals respond to stressful events. Given the focus of the research, participants were asked to describe how they responded to experiences of racial discrimination. Although the Brief COPE includes 14 subscales of two items each, Litman (2005) found that second-order factor analyses of the COPE generally yield three to four higher

order factors. Based on conceptual and empirical literature describing coping strategies (Litman, 2005; Carver & Scheier, 1994; Carver et al., 1989; Folkman & Lazarus, 1985; Holahan & Moos, 1987), items were rationally grouped into three conceptually meaningful factors, specifically: (a) *Problem-focused coping* (active coping, planning, instrumental support, and religion); (b) *Active emotional coping* (venting, positive reframing, humor, acceptance); and (c) *Avoidant emotional coping* (self-distraction, denial, behavioral disengagement, self-blame, and substance use). In regards to validity of the scale, Litman (2005) previously demonstrated significant associations between the COPE and measures of approach and avoidance as predicted by theory. Mean scores for each of the three factors were calculated, with higher scores interpreted as a higher degree of utilization of that particular coping strategy. With respect to reliability, Carver et al. (1989) reported Cronbach's alpha coefficients ranging from .45 to .92 for the COPE subscales. Other studies utilizing second-order COPE factors reported reliability coefficients ranging from .77 to .91 (Liang et al., 2007; Alvarez & Juang, 2010).

*Demographic data sheet.* A demographic data sheet was developed for the current study to assess participant characteristics such as age, education level, length of residence in the United States, generational status, race, and ethnicity (including specific Asian ethnic subgroup identity and allowing for multi-racial and multi-ethnic responses).

*Depression and Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995).* The Depression and Anxiety Stress Scale is a 21 item measure that assesses distress along the axes of depression, anxiety (symptoms of psychological arousal), and stress (the more cognitive, subjective symptoms of anxiety). The depression scale assess dysphoria, hopelessness, devaluation of life, self-depracation, lack of interest/involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The stress scale is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive and impatient. Scores for the three subscales are calculated by summing the scores for the relevant items. The DASS-21 is based on a dimensional rather than categorical conceptualization of psychological disorder and does not provide information on clinical diagnoses. This measure has demonstrated good reliability and validity across samples (Norton, 2007; Page, Hooke, & Morrison, 2007; Ng, Trauer, Dodd, Callaly, Campbell, & Berk, 2007).

*Loss of Face Scale (LOFS; Zane, 2000).* The Loss of Face Scale is a 21 item measure assessing the Asian cultural construct of face loss concern. Two previous studies have demonstrated adequate internal consistency and concurrent and discriminant validity. Additionally, the measure has also been shown to be sensitive to cultural differences. A sample item is: *"When I meet other people, I am concerned about their expectations with me"*. Items are rated using a 7-point Likert scale.

*Racial Socialization Scale-Modified (Hughes & Chen, 1997).* The Racial Socialization Scale is a 16 item measure developed by Hughes and Chen (1997) for use in African American families. Items on this scale comprise three dimensions of racial socialization: cultural socialization, preparation for bias, and promotion of mistrust. For the current study, item queries were modified to be more relevant to Asian American racialization. The final instrument included the following subscales: *preparation for bias* (discussions of group differences and explanations of racial bias, e.g. "Did your parents ever talk to you about others who may try to limit you because of your race/ethnicity?"), *reinforcement of model minority stereotype* (messages about achievement to counter racial bias, e.g. "Did your parents tell you that you must do better in school and work in order to get the same rewards given to others because of your race/ethnicity?"), *cultural socialization* (cultural heritage teaching and awareness, e.g., "Did your parents encourage you to read books about your ethnic/racial group?"), and *promotion of racial mistrust* (messages to avoid individuals of other race/ethnic groups, e.g., "Did your parents tell you to keep a distance from people of other races/ethnic groups?"). Respondents were asked to rate frequency of these experiences with their families or peers. Higher scores on the subscales were interpreted as greater exposure to these experiences, through direct discussions or observations of others' attitudes and behaviors.

*Social Anxiety Scale for Adolescents (SAS-A; La Greca & Lopez, 1998).* The Social Anxiety Scale for Adolescents is a 16 item measure that assesses symptoms of social anxiety in adolescents. It includes three subscales: *fear of negative evaluation* (8 items that assess respondents' fears, concerns, or worries regarding peers' negative evaluations); *social avoidance and distress in new situations* (6 items that assess respondents' social avoidance and distress with new social stituations or with unfamiliar peers); and *general social avoidance and distress* (4 items that assess general social inhibition, distress, and discomfort). Subscale scores are calculated by summing the scores for the relevant items with higher scores reflecting greater

social anxiety. Previous work indicates good internal consistencies (.70-.89) and interscale correlations (.52-.60) across subscales (Inderbitzen-Nolan & Walters, 2000; La Greca, 1998).

*South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987).* The South Oaks Gambling Screen is a 20 item measure designed to identify pathological gambling. It correlates with DSM-III-R and DSM-IV and demonstrated validity and reliability among students (Beaudoin & Cox, 1999; Lesieur et al., 1991; Ladouceur et al., 1994; Neighbors et al., 2002b). A score of 5+ on the SOGS has been used to identify probable pathological gamblers, with scores of 3-4 representing at-risk gamblers (Dube et al., 1996; Lesieur et al., 1991; Volberg & Steadman, 1989).

*Subtle and Blatant Racism Scale for Asian American College Students (SABR-A$^2$; Yoo and Lee, 2005).* The Subtle and Blatant Racism Scale for Asians is a 10 item measure that assesses a respondent's experience of personal and behavioral forms of racial discrimination. Blatant and subtle forms of racism are differentiated based on the degree to which an act was based on implicit or explicit racial bias. "Subtle" (or covert) racism refers to discrimination attributable to implicit bias and "blatant" (or overt) racism refers to discrimination attributable to explicit bias. This scale was developed using samples of Asian American college students and has been shown to demonstrate good reliability and construct validity.

*WHO Quality of Life Scale-Field Trial Version (WHOQOL-BREF; Skevington, Lotfy, O'Connel, & WHOQOL Group, 2004).* The WHO Quality of Life-Field Trial Version is an 13 item measure that provides a health profile with three domain scores (physical health, psychological health, social relationships) and two individually scored items about an individual's overall perception of their quality of life and health (i.e., "How would you rate your quality of life?" and "how satisfied are you with your health?". Each domain score is scaled in a positive direction with higher scores indiciating a higher quality of life.

## 2.5 Data Analytic Plan

### 2.5.1 *Data Management*

Participants entered their responses directly into the secure online survey via DatStat Illume, allowing them to complete study questionnaires at their convenience and reducing the chances of data entry errors. Data were subsequently downloaded to SPSS19 and MPLUS7 for analyses.

### 2.5.2 *Preliminary Analyses*

*Treatment of Outliers.* Standardized residuals were examined on a case-wise basis to identify outliers and those that exceeded three standard deviations above or below the mean (i.e., absolute value greater than 3.29) were excluded from analysis. Before interpreting results from linear regressions, collinearity statistics Tolerance and Variance Inflation Factor (VIF) were examined for all analyses (Cohen, Cohen, West, & Aiken, 2003).

*Examination of Distributions.* Descriptive statistics were calculated in order to examine univariate distributions of study variables. Appropriate (square root or logarithmic) transformations were used to correct for significant departures from normality. Subsequent analyses were conducted to ensure that skewness and kurtosis of the transformed variables were within acceptable limits for analyses using maximum likelihood estimation (MLE) procedures, which are known to be robust to violations of normality (West et al., 1995).

*Identifying Demographic Covariates.* Preliminary analyses were conducted to examine possible differences in study variables across demographic variables, including sex, age at the time of survey completion, self-reported Asian ethnic group, acculturation levels (to both culture of origin and the majority culture, assessed separately), and generational status. Student's *t*-tests were used to examine possible differences between male and female participants. Analyses of variance (ANOVAs) were conducted to examine possible differences between three or more groups (e.g. ethnic subgroup membership), and bivariate correlations were calculated to test for associations between continuous variables. When significant main effects were observed, demographic variables were included in subsequent analyses as covariates.

*Treatment of missing data.* Previous research designs using Internet survey methodology have yielded very little missing data (i.e., <5%). In the current study, no bias was observed due to missing data (missingness did not appear to depend on the value of the missing data after controlling for other variables) so missing data were assumed to be missing at random.

### 2.5.3 *Study Analyses*

*Exploratory Factor Analysis.* In order to develop a measure assessing lifetime RMA stress, items from previous measures were used and new items were developed from qualitative research assessing major themes in microaggressions against Asian Americans (Sue, Bucceri, Lin, Nadal,

& Torino, 2007). Exploratory factor analysis was performed on initial items in order to evaluate the presence of higher-order factors. Principal Component Analysis (PCA) was chosen over factor analytic techniques due to the number of variables and their communalities (Stevens, 1992; Guadagnoli & Velicer, 1988). Oblique rotation was selected to allow intercorrelation between factors and direct oblimin was chosen over promax due to the size of the data set.

In order to determine how many factors to retain, the following points were taken into consideration: (1) presence of items with factor loadings greater than ±.40 (Stevens, 1992); (2) component saturation (to determine if there were sufficient number of items with loadings greater than .40 within each factor; Guadagnoli & Velicer, 1988); (3) the location of the inflection point in the scree plot; and (4) interpretability of the items and factor distributions (i.e., did they appear to be tapping into an underlying theoretical dimension?). Remaining factors that were not amenable to interpretation were dropped.

*Confirmatory Factor Analysis.* Three confirmatory factor analyses were conducted on all scales of the resulting Racial Microaggressions instrument (frequency, stress, cumulative stress) separately in order to examine the stability of the solution derived from the exploratory factor analysis. While the frequency, distress, and cumulative stress scales assessed different responses to each item on the measure, the theoretical basis underlying the composition of the items that queried these responses suggests a factor structure *independent* of response scale. The MPLUS7 Software Package (Muthen & Muthen, 2012) was used to assess the fit of the specified structural models. On the grounds of parsimony, higher factor models were rejected unless they provided a significantly better fit to the data than the theoretical model proposed. Because fit indices are susceptible to bias due to sources ranging from sample size to errors in model specification, the use of several indices in concert to assess model fit has been suggested (Hu & Bentler, 1998; Kline, 2005). Therefore, the fit indices reported in the current study include the model $\chi^2$, the Steiger-Linde root mean square error of approximation *(RMSEA)*, the Tucker-Lewis non-normed fit index *(NNFI)*, and the standardized root mean squared residual *(SRMS)*.

*Associations with Outcomes.* Psychological functioning was assessed using the depression scale score (DASS-21), the anxiety scale score (DASS-21), and the social anxiety total scale score (SAS-A); physical health was assessed using general quality of life and satisfaction with physical health scores (WHO-QOL); and risk behavior was assessed using alcohol involvement

(ASSIST) and gambling behavior (SOGS). A series of regression models was used to determine if lifetime racial microaggression stress was associated with these outcomes.

*Model Testing.* Three theoretical models (Stress-Coping Model of Addiction, Transactional Model of Stress, and Integrated Stress Model) were tested with the following procedure: (1) simple mediational models, (2) multiple mediational models, and (3) structural equation models. To test mediational hypotheses, the following steps were followed to establish partial mediation (Baron & Kenny, 1986; Judd & Kenny, 1981; James & Brett, 1984): (1) demonstration of association between the causal variable and the outcome; (2) demonstration of association between the causal variable and proposed mediator; and (3) demonstration of the association between the mediator and outcome variables, controlling for the causal variable.

Multiple mediation involves "simultaneous mediation by multiple variables" (Preacher and Hayes, 2008, p. 880). As recommended by Preacher and Hayes, the procedures followed in the study included (a) evaluation of mediators separately to determine unique predictors; and (b) multiple mediation models to analyze total indirect effects (the aggregate mediating effect of all mediators tested) and the specific indirect effect (the mediating effect of a specific mediator). Bootstrap analysis, a nonparametric sampling procedure, was utilized to test the significance of indirect effects in the model. Bootstrap analysis has the advantage of greater statistical power without the *a priori* assumption of multivariate normality in the sample distribution and lends itself to a parsimonious analysis of multiple mediators tested simultaneously within a model (Mallinckrodt, Abraham, Wei, & Russell, 2006; Preacher & Hayes, 2008). This type of analysis uses the initial sample to generate multiple random samples (with replacement) that serve as the basis for repeated computations of the statistic under investigation (Mallinckrodt et al., 2006). To test for mediation, a parameter estimate of the total and specific indirect effects and their respective confidence intervals were generated using 1,000 to 20,000 random samples. In the present study, the original sample of 281 participants was used to generate a bootstrap sample of 281 participants with replacement and total and specific indirect effects were obtained using the resulting bootstrap sample. As recommended by Preacher and Hayes (2008) for multiple mediation models, this calculation was repeated with 5,000 samples to yield a parameter estimate for both total and specific indirect effects. If the 95% bias-corrected confidence interval for the parameter estimate did not contain zero, then the indirect effect was statistically significant and mediation was demonstrated (Mallinckrodt et al., 2006; Preacher & Hayes, 2008). In the instance

where all mediation criteria were met except for demonstrating significant total indirect effects, specific indirect effects were still examined, as suppression effects may have obscured the impact of individual mediators (MacKinnon, Krull, & Lockwood, 2000). SPSS procedures designed for multiple mediation models was used to test hypotheses (Preacher & Hayes, 2008).

Next, each theoretical model was evaluated within the context of a structural model. Path coefficients and overall model fit for the three structural models were estimated using MPLUS7 (Muthen & Muthen, 2012) software and MLE procedures. Relationships between exogenous and endogenous variables were examined within the models; exogenous variables were covaried and the first indicator of each latent variable was set to 1.0 (MacCullum, 1995). The following fit indices were reported: model $\chi^2$, *RMSEA, NNFI*, and *SRMS*.

*Moderational Analysis.* Exploratory moderational analyses were performed to test study hypotheses. Product terms were created between the focal factors and the moderator variables and used in regression models (Saunders, 1956). Because introducing a term that is the product of two variables may create multicollinearity (Sharma, Durand, & Gur-Arie, 1981), variables were mean-centered following commonly-accepted procedures (Aiken & West, 1991; Cohen & Cohen, 1983; Jaccard & Turrisi, 1990; Jaccard, Wan, & Turrisi, 1990; Smith & Sasaki, 1979).

### 2.5.4 *Power Considerations*

Power estimates were conducted using Sample Power 2.0 (Borenstein, Rothstein, Cohen, & SPSS, Inc., 2001) and Preacher and Coffman's "computing power and minimum sample size for *RMSEA*" web utility (Preacher and Coffman, 2006). Discussions regarding adequate power for factor analytic and structural methods have provided many "rules of thumb" to achieve the stability of the matrices (usually based on the ratio of the number of subjects to the number of predictors/free parameters). Alternatively, Jaccard and Wan (1996) and Kenny (2014) suggest that sample size equal to or greater than 200 should yield stable parameters. However, stricter rules of thumb guidelines were not met by the data (e.g., Bentler & Chou, 1987), though Kenny (2014) notes that "several published studies do not meet this goal". Given the limitations of sample size, statistical power for testing covariance structure models using *RMSEA* was computed, yielding a range of power estimates (depending on model complexity) from .78 to .84. Given good statistical fits to the data, results from these analyses are included.

# Chapter 3. RESULTS

## 3.1 PARTICIPANT DEMOGRAPHICS

Participants were 281 (93 men and 188 women) Asian American undergraduates enrolled at the University of Washington during Spring quarter of the 2013-2014 academic year. Respondents ranged in age from 18 to 25 years ($M$ = 19.43, $SD$ = 1.45) and included 81 (29%) freshmen, 65 (23%) sophomores, 80 (29%) juniors, and 55 (20%) seniors.

In terms of Asian ethnicity, 93 (33%) participants were Chinese, 49 (17%) Korean, 37 (13%) Vietnamese, 22 (8%) Taiwanese, 16 (6%) Japanese, 15 (5%) Filipino, 14 (5%) Indian, 4 (1%) Thai; 2 (1%) Cambodian, 2 (1%) Pakistani, 1 (<1%) Singaporean; the remaining participants identified as Asian multi-ethnic/multi-racial. Participants' generation-since-immigration status were as follows: 82 (29%) first generation (born in Asia or outside the United States), 181 (64%) second generation (born in the United States and either parent born in Asia or outside the United States), 1 (<1%) third generation (born in the United States, both parents born in the United States, and all grandparents born outside the United States), 6 (2%) fourth generation (born in the United States, both parents born in the United States, and at least one grandparent was born outside the United States and one born in the United States), and 4 (1%) who indicated being fifth generation and above (3 participants did not indicate generational status). Among those who indicated first-generational status, the length of residence in the United States ranged from 2 to 24 years ($M$ = 14.5, $SD$ =4.2).

In regards to acculturation, respondents reported greater acculturation to their culture of origin ($M$ =2.44, $SD$ = 0.62) and majority American culture ($M$ =2.80, $SD$ = 0.48) compared to acculturation to other Asian American cultural groups ($M$ = 1.90, $SD$ = 0.67). Using the single item measure of cultural identity from the SL-ASIA, 88 (21%) respondents identified as Asian, 108 (38%) identified as bi-cultural (a blend of Asian and American characteristics), and 80 (28%) identified as American. Participants were also asked to report their national identity and 197 (70%) endorsed American national identity, 77 endorsed Asian national identity, 7 endorsed "Other", and 4 participants did not respond.

## 3.2 DEVELOPING THE ASIAN AMERICAN RACIAL MICROAGGRESSIONS STRESS SCALE (AARMSS)

### 3.2.1 *Objective*

| | |
|---|---|
| Aim 1 | Modify existing measures to develop a scale that assesses lifetime racial microaggression (RMA) stress specific for use in Asian Americans |
| Hypotheses | 1. The developed scale will exhibit internal consistency and construct validity compared to other measures of perceived racial discrimination.<br>2. Factor analysis will reveal three unique first-order latent constructs reflecting Sue's taxonomy of racial microaggressions (racial microassault, racial microinsult, racial microinvalidation). |

The purpose of this portion of the study was to modify an existing measure and develop a scale for use in Asian American groups that provides an assessment of *cumulative,* or "lifetime stress" caused by racial microaggressions. Previous scales developed for use in Asian American groups assess either frequency caused by a type of event or stress resulting from that event (but not both). However, Sue et al. (2008) suggest that harm from microaggressions is caused by the "cumulative denigration of an individual's identity". Thus, in order to create a composite measure reflective of *cumulative lifetime stress*, the scale was designed to: (a) assess the frequency of specific events, (b) assess typical stress caused by each event, and (c) assess lifetime experiences (instead of past year).

### 3.2.2 *Development of the Initial Pool of Items*

Based on scholarly research on Asian American racialization and psychological literature examining racism-related stress (Essed, 1990; Harrell, 2000; Sue et al.; Utsey & Ponterotto, 1996), 55 items were initially included in the scale. Given that the development of the items was guided by theoretical and qualitative work on microaggressions, it was hypothesized that the factor structure of the scale would reflect the taxonomy of microaggressions (Figure 3.1).

Similar to the rating scale used on the Schedule of Racist Events (SRE; Landrine & Klonoff, 1996), the instrument developed in this study assessed the frequency and degree of stressfulness of each event. Accordingly, participants responded to each item twice: (a) rating the frequency of the racial microaggressive event in their lifetime on a 5-point Likert scale from 0 ="This has never happened to me" to 4 = "This has happened very often", and (b) how stressful they

typically found each event on a 5-point Likert scale ranging from 0 = "This was not stressful at all" to 4 = "This was extremely stressful". Responses to each distress item were multiplied by responses to the corresponding frequency item in order to compute a composite variable reflecting cumulative stress load resulting from each event. As Harrell (2000) noted, *"the accumulation of these experiences contributes to the overall stress load of the individual"* (p. 46). Thus, in order to provide a measure of *cumulative* stress due to racial microaggressions incurred over a lifetime, total and subscale scores were calculated by taking the *summation* of corresponding items. The measure was therefore designed to provide (a) information on the average lifetime frequency of racial microaggressions, (b) the typical stress caused by racial microaggressions, and (c) the cumulative stress caused by racial microaggressions over the course of an individual's lifetime.

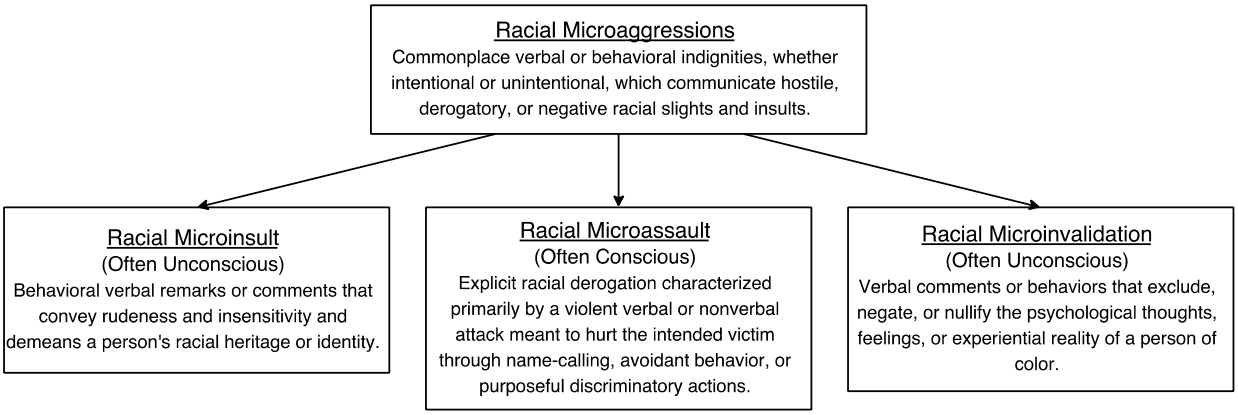



Figure 3.1. Taxonomy of racial microaggressions (from Sue et al., 2006).

### 3.2.3 *Exploratory Factor Analysis*

| **Hypothesis 1:** | Factor analysis will reveal unique latent factors reflecting Sue's taxonomy of racial microaggressions. |
|---|---|

An exploratory factor analysis was conducted on the initial pool of 55 items in order to evaluate initial items, examine if theoretical constructs were reflected in item loading, and evaluate the presence of higher-order subscales (Hair, Black, Babin, Anderson, & Tatham, 2006; Van Prooijen & Van Der Kloot, 2001).

Using PCA, eight factors with eigenvalues greater than one (ranging from 1.06 to 22.06) emerged. Following procedures outlined in §2.5.3, three factors with retained with 13, 15, and 11 items; eigenvalues of 19.87, 3.09. and 1.68; and accounting for 49.69%, 7.72%, and 4.20% of the total variance observed in the data, respectively. The remaining factors were not amenable to interpretation or had few items with factor loadings greater than .40.

The 39 remaining items on the scale composed the *Asian American Racial Microaggressions Stress Scale* (AARMSS) (See Appendix A for a list of the 39 items and their factor loadings). In agreement with the *a priori* hypothesis, examination of the factor structure revealed constructs that appeared to match the theoretical taxonomy of racial microaggressions (microassaults, microinsults, microinvalidations). Thus, the resultant factors were labeled (a) *Racial Microinsult Stress* (13 items), (b) *Racial Microassault Stress* (15 items), (c) *Racial Microinvalidation Stress* (11 items). For the purposes of this study, the computed items representing lifetime cumulative stress were submitted for analysis.

It should be noted that the results of the exploratory factor analysis are based on data from 281 participants, yielding a ratio of 5.53 participants to 1 item. This figure meets the commonly accepted rule of thumb, which suggests a minimum of 5 participants for each item (Stevens, 1996; Bentler & Chou, 1987) or at least 300 participants (Nunnally, 1978). Work by Arrindell & van der Ende (1985) suggests that changes in the participant-to-item ratio from 1.3:1 to 19.8:1 does not significantly impact the stability of factor solutions, and based on Monte Carlo procedures, Guadagnoli and Velicer (1988) concluded that the most important determinants of reliable factor solutions were absolute sample size and component saturation (absolute magnitude of factor loadings). They further asserted that factors with four or more loadings greater than .60 are reliable regardless of sample size and factors with 10 or more loadings greater than .40 are reliable if the sample size is greater than 150. Taken together, these guidelines suggest that the data submitted to the factor analysis were sufficient for interpretation. However, confirmatory factor analyses were performed to further test validity and stability of the factor structure observed.

### 3.2.4 *Confirmatory Factor Analysis*

Confirmatory factor analyses were conducted on all scales of the AARMSS (frequency, distress, cumulative stress) *separately* in order to examine the stability of the three-factor solution derived

from the exploratory factor analysis. The hypothesized model tested the following structure for all response sets (frequency, stress, lifetime RMA stress): three first-order latent variables representing three subscales, "Racial Microassault" (15), "Racial Microinsult" (13), and "Racial Microinvalidation" (11); and one second-order latent factor representing the total scale score ("Racial Microaggression"). In addition to assessing absolute fit indices of the hypothesized model, two competing models were tested for comparison: (a) a one-factor solution of one first-order latent variable representing "Racial Microaggression" with all 39 items as indicators; and (b) a two-factor alternative solution of two first-order latent variables representing two subscales, "Intentional Microaggression" (15) and "Ambiguous Microaggression" (24), with one second-order latent factor representing the total scale score.

Results from the confirmatory factor analyses (Table 3.3) indicated that the hypothesized 3-factor model represented an acceptable fit to the data across the response sets of the AARMSS, with fit indices falling in the "fair" range (Hu & Bentler, 1999; Quintana, & Maxwell, 1999; Schumacker & Lomax, 1996). While model fit may have been improved by the omission of additional items, this was ultimately decided against in order to preserve items that were experientially meaningful. As indicated by the $\chi^2$ difference test, the correlated three-factor model (Hypothesized Model) fit the data significantly better than the two-factor model, which outperformed the one-factor model. This pattern was seen across all response sets. Thus, taken together, these results provide some preliminary evidence for the construct validity of the AARMSS.

Table 3.3. Summary of CFA Fit Indices for Three Tested Models

| AARMSS Scale | Model Tested | $\chi^2$ | *df* | *AIC* | *CFI* | *NNFI* | *RMSEA* | *SRMS* |
|---|---|---|---|---|---|---|---|---|
| Frequency Items | Hypothesized | 1649.76 | 699 | 24920.51 | .86 | .85 | .072 (.067, .076) | .087 |
| | Two-factor | 2018.95 | 701 | 25285.70 | .81 | .79 | .085 (.080, .089) | .099 |
| | One-factor | 2853.49 | 702 | 26118.24 | .68 | .66 | .108 (.104, .112) | .119 |
| Stress Items | Hypothesized | 1831.89 | 699 | 18310.56 | .80 | .79 | .079 (.075, .084) | .084 |
| | Two-factor | 1999.771 | 701 | 18474.44 | .77 | .76 | .085 (.080, .089) | .092 |
| | One-factor | 2465.2 | 702 | 18937.87 | .69 | .67 | .099 (.094, .103) | .099 |
| Lifetime Stress Items | Hypothesized | 2232.46 | 699 | 45019.61 | .82 | .81 | .081 (.077, .086) | .057 |
| | Two-factor | 2564.047 | 701 | 45347.20 | .79 | .77 | .101 (.096, .105) | .065 |
| | One-factor | 3209.67 | 702 | 45990.83 | .71 | .70 | .117 (.112, .121) | .076 |

*Note. AIC* = Akaike Information Criterion, *CFI* = comparative fit index; *NNFI* = Bentler-Bonnett non-normed fit index (also known as Tucker-Lewis Index); *RMSEA* = root-mean-square error of approximation; *SRMS* = Standardized Root Mean Square Residual.

$^{*}p < .05$.

### 3.2.5 *Internal Reliability and Concurrent Validity*

| **Hypothesis 2:** | The developed scale will exhibit internal consistency and construct validity compared to other measures of perceived racial discrimination. |
|---|---|

The 39 item AARMSS scale yielded a high (George & Mallery, 2003) coefficient alpha of .97. Examination of each factor yielded coefficient alphas of .96 for Microassault stress, .94 for Microinsult stress, and .93 for Microinvalidation stress.

The correlations among the AARMSS and its subscales, the Asian American Racism-Related Stress Inventory (AARRSI), the Subtle and Blatant Racism Against Asians scale (SABR-A$^2$), the Stress subscale of the Depression, Anxiety, and Stress Scale (DASS-21), and participant demographics are provided (Table 3.4). As hypothesized, the results indicated significant correlations between the AARMSS total and subscale scores with other measures of racism-related stress. Resulting correlation coefficients represented either medium or large effect sizes (Cohen, 1988).

Table 3.4. Correlations between AARMSS, AARRSI, SABR-A$^2$, and DASS Total Scale and Subscale Scores

| Scale | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. AARMSS total scale | -- | | | | | | | | | | | |
| 2. Microassault stress | .90 | -- | | | | | | | | | | |
| 3. Microinsult stress | .91 | .69 | -- | | | | | | | | | |
| 4. Microinvalidation stress | .93 | .79 | .77 | -- | | | | | | | | |
| 5. AARRSI total scale | .86 | .74 | .80 | .82 | -- | | | | | | | |
| 6. General racism | .80 | .69 | .75 | .74 | .92 | -- | | | | | | |
| 7. Sociocultural racism | .79 | .69 | .67 | .82 | .92 | .76 | -- | | | | | |
| 8. Perpetual foreigner racism | .80 | .68 | .77 | .72 | .94 | .80 | .78 | -- | | | | |
| 9. SABR-A$^2$ total scale | .73 | .80 | .57 | .65 | .73 | .67 | .66 | .68 | -- | | | |
| 10. Subtle Racism | .67 | .76 | .48 | .59 | .66 | .59 | .63 | .60 | .92 | -- | | |
| 11. Blatant Racism | .67 | .69 | .56 | .59 | .66 | .64 | .57 | .64 | .91 | .66 | -- | |
| 12.DASS-Stress | .44 | .44 | .38 | .40 | .36 | .33 | .31 | .39 | .30 | .28 | .26 | -- |

*Note.* AARMSS = Asian American Racial Microaggressions Stress Scale; AARRSI = Asian American Racism Related Stress Inventory; SABR-A$^2$ = Subtle and Blatant Racism Scale Against Asian American College Students; DASS = Depression Anxiety and Stress Scale.
All correlations significant at $p < .001$.

### 3.2.6 *Alternative Scoring Methods*

In addition to providing data on cumulative racial microaggression stress over a lifetime ("lifetime racial microaggression stress"), the response sets of the AARMSS also provide information on the frequency of events and stress caused by events. While the composite score

provides information on cumulative stress across all items in an individual's lifetime, data on frequency and stress calculated separately may be helpful. Thus, frequency and stress subscales can be constructed by computing averages across the corresponding items.

### 3.2.7 *Descriptives*

According to AARMSS frequency items, respondents reported experiencing racial microinsults ($M$ = 2.35, $SD$ = .79) most frequently, followed by racial microinvalidations ($M$ = 1.58, $SD$ = .84), and finally racial microassaults ($M$ = .93, $SD$ = .79). According to AARMSS distress items, respondents found racial microassaults ($M$ = 1.87, $SD$ = .92) most distressing, followed by microinvalidations ($M$ = 1.43, $SD$ = .87), and then microinsults ($M$ = 1.25, $SD$ = .90). However, taking into account the frequency of these events, descriptives of the composite variable "lifetime racial microaggression stress" suggested that participants experienced the most cumulative lifetime stress from microinsults ($M$ = 41.84, $SE$ = 39.09), followed by microinvalidations ($M$ = 28.50, $SD$ = 28.91), and finally microassaults ($M$ = 27.50, $SD$ = 34.13).

## 3.3 Lifetime Racial Microaggression Stress and Outcomes

### 3.3.1 *Objective*

| | |
|---|---|
| Aim 2 | Assess relationships between lifetime RMA stress, psychological functioning, health, and risk behaviors (depression, anxiety, social anxiety, alcohol use, and quality of life scales). |
| Hypotheses | 1. Lifetime RMA stress will be associated with psychological functioning, health, and risk behavior above and beyond the traditional measure of average frequency of events.<br>2. Lifetime RMA stress will be associated with psychological functioning, health, and risk behavior above and beyond a measure of experiences of overt racism. |

Does the stress load from racial microaggressions (RMA) accumulate over time? In other words, does *cumulative (or "lifetime") stress* from these experiences correlate with psychological functioning and risk behavior? Does measuring lifetime RMA stress provide more information about the relationship between racism and health beyond average frequency of these experiences?

Statistical analyses were conducted to examine relationships between lifetime RMA stress, as assessed by the AARMSS, and measures of psychological functioning (depression, anxiety, social anxiety), health (overall quality of life, physical functioning), and engagement in risk behavior (alcohol involvement and gambling behavior). Additionally, the incremental validity of lifetime RMA stress above and beyond average frequency of racial microaggressions and experiences of overt racism was examined.

### 3.3.2 *Preliminary Analyses*

Descriptive analyses of study variables including means, standard deviations, and correlations are available in Appendix B. Preliminary analyses were conducted to determine if study variables differed across demographic variables (sex, age, ethnic group, acculturation levels, generational status).

*Sex.* Results from *t*-tests indicated that women ($n$ = 174, $M$ = 9.78, $SD$ = 4.37) generally reported higher levels of lifetime RMA stress than men ($n$ = 89, $M$ = 6.64, $SD$ = 4.41) ($t(261) = 5.50$, $p < .001$). Specifically, women indicated greater lifetime stress due to racial microassaults (women: $n$ = 173, $M$ = 4.79, $SD$ = 3.01; men: $n$ = 88, $M$ = 3.14, $SD$ = 3.00; $t(259) = 4.17$, $p < .001$), microinsults (women: $n$ = 173, $M$ =6.52, $SD$ =2.94; men: $n$ = 88, $M$ = 4.03, $SD$ = 2.75; $t(259) = 6.58$, $p < .001$), and microinvalidations (women: $n$ = 173, $M$ =5.05, $SD$ = 2.60; men: $n$ = 89, $M$ = 3.72, $SD$ = 2.73; $t(260) = 3.86$, $p < .001$) compared to men. Interestingly, no sex differences arose in reported frequency of experiences of blatant racism (women: $n$ = 174, $M$ = 2.24, $SD$ = .81; men: $n$ = 89, $M$ = 2.01, $SD$ = .87; $t(261) = 2.10$, $p$ = .042).

In regards to psychological functioning, health, and risk behavior outcomes, women tended to report higher levels of social anxiety and lower overall quality of life. Specifically, women ($n$ = 164, $M$ = 30.39, $SD$ = .14.30) endorsed higher levels of social anxiety compared to men ($n$ = 85, $M$ = 22.22, $SD$ = 14.44) ($t(247) = 4.26$, $p < .001$), as assessed by the SAS-A total score. Additionally, women ($n$ = 164, $M$ = 13.29, $SD$ = 6.60) also indicated higher levels of fear of negative evaluation from peers, ($n$ = 85, $M$ = 8.89, $SD$ = 6.67) ($t(247) = 4.96$, $p < .001$) and greater generalized social avoidance and distress (women: $n$ = 154, $M$ = 10.41, $SD$ = 4.95; men: $n$ = 85, $M$ = 8.39, $SD$ = 5.14; $t(247) = 3.28$, $p < .001$). On quality of life scales, women reported lower levels of physical health (women: $n$ = 165, $M$ = 64.39, $SD$ = 16.17; men: $n$ = 85, $M$ = 71.62, $SD$ = 14.49; $t(248) = 3.46$, $p < .001$).

*Age.* Analyses using continuous age data showed no differences by age.

*Ethnic groups.* ANOVAs were conducted to examine possible differences between ethnic groups. Seven Asian ethnic groups were included in this analysis: Chinese, Korean, Vietnamese, Taiwanese, Japanese, Filipino, and Indian. Other ethnic groups were excluded from this analysis due to low sample size. The results showed no differences between these groups on the independent or dependent variables.

*Acculturation level.* Bivariate correlations were conducted to test for associations between study variables and acculturation to Western culture or to respondents' culture of origin. Participants who reported higher levels of acculturation to their culture of origin also tended to report more lifetime stress due to microassaults ($r$ = .14, $p$ = .02) and lower levels of alcohol involvement ($r$ = -.14, $p$ = .02). Western acculturation was negatively associated with depression ($r$ = -.19, $p$ = .002), anxiety ($r$ = -.21, $p$ = .001), and positively associated with overall quality of life/general health ($r$ = .28, $p$ < .001) and ratings of physical health ($r$ = .33, $p$ < .001). Western acculturation was also negatively associated with gambling behaviors ($r$ = -.17, $p$ = .008).

*Generational status.* Following procedures by Alvarez and Huang (2009), in order to examine difference by generational status, participants in the third ($n$ = 1), fourth ($n$ = 6) and fifth ($n$ = 4) generation groups were collapsed into the second-generational status group, for a total of 192 (68%) in the second- through fifth-generation group and 82 (29%) participants in the first-generation group. No differences between generational status groups were observed.

Results from simple bivariate correlations suggested that lifetime RMA stress was positively associated with depressive symptoms, symptoms of general anxiety and social anxiety (total scale and all subscales), alcohol use, and gambling, and negatively associated with ratings of physical health. Examination of the subscales of the AARMSS indicated some variability in the nature of these relationships. Specifically, lifetime stress due to racial microassaults was associated with depression, anxiety, social anxiety (total scale and all subscales), decreased quality of life, poorer physical health, and gambling; lifetime racial microinsult stress was associated with anxiety, social anxiety (total scale and all subscales), poorer physical health, and alcohol use; and lifetime racial microinvalidation stress was associated with depression, anxiety, social anxiety (total scale and all subscales), poorer physical health, alcohol use, and gambling.

Bivariate correlations were also conducted to evaluate relationships between experiences of blatant racism and outcome variables. Results suggest that frequency of lifetime blatant racism

was positively associated with depression, anxiety, social anxiety (total scale and fear of negative evaluation only), poorer physical health, alcohol use, and gambling behaviors.

### 3.3.3 *Correlates of Lifetime Racial Microaggression Stress and Incremental Validity*

| **Hypothesis 1:** | Lifetime RMA stress will be associated with psychological functioning, health, and risk behavior above and beyond the traditional measure of average frequency of events. |
|---|---|

Simultaneous hierarchical regression analyses were conducted separately with psychological functioning, health, and risk behavior as dependent variables. Variables were entered as blocks in this order: (a) demographic control variables and (b) average frequency of racial microaggressions (as measured by the frequency subscale of the AARMSS), and (c) lifetime RMA stress (as measured by the composite score). Lifetime RMA stress emerged as a significant predictor across several outcomes, above and beyond the average frequency measure. Significant effects were observed for depression, anxiety, general stress, social anxiety, overall quality of life and general health, physical health, social relationship satisfaction, and gambling behavior, controlling for age, sex, and acculturation levels (Table 3.5).

Table 3.5. Average Frequency of Racial Microaggressions and Lifetime RMA Stress as Predictors of Psychological Functioning, Health, and Risk Behavior Outcomes

| | Model 1[a] | | Model 2 | | | |
|---|---|---|---|---|---|---|
| | AARMSS Average Frequency | | AARMSS Average Frequency | | AARMSS Lifetime Stress | |
| Outcome | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* |
| DASS Depression | .53 (.12) | .28*** | -.04 (.20) | -.02 | .11 (.03) | .38** |
| DASS Anxiety | .58 (.10) | .35*** | .14 (.17) | .09 | .08 (.03) | .33** |
| DASS Stress | .71 (.11) | .39*** | .19 (.19) | .10 | .10 (.03) | .36*** |
| SAS-A Social Anxiety (Total Scale) | 6.07 (1.34) | .28*** | .44 (2.30) | .02 | 1.07 (.36) | .32** |
| SAS-A Fear of Negative Evaluation From Peers | 2.95 (.62) | .29*** | .43 (1.06) | .04 | .48 (.17) | .31** |
| SAS-A Social Avoidance and Distress Specific to New Situations | 1.62 (.48) | .22** | -.47 (.82) | -.06 | .40 (.13) | .35** |
| SAS-A Generalized Social Avoidance and Distress | 1.50 (.37) | .25*** | .48 (.65) | .08 | .19 (.09) | .21* |
| WHO-QOL Overall Quality of Life and General Health | -2.43 (1.89) | -.08 | .87 (3.23) | .03 | -.63 (.50) | -.14* |
| WHO-QOL Physical Health | -5.62 (1.41) | -.24*** | -1.74 (2.40) | -.07 | -.75 (.37) | -.21* |
| WHO-QOL Social Relationships | -3.18 (1.92) | -.11 | -.24 (3.28) | -.01 | -.57 (51) | -.13* |
| ASSIST Alcohol Involvement Screening Test | 1.62 (.56) | .18** | 1.32 (.86) | .15 | .06 (.13) | .05 |
| SOGS Gambling Behavior | .38 (.17) | .15* | .02 (.28) | .01 | .07 (.03) | .18* |

*Note.* [a] Covariates entered in Block 1 = age, sex, and acculturation levels.
*$p < .05$. **$p < .01$. ***$p < .001$.

**Hypothesis 2:** Lifetime RMA stress will be associated with psychological functioning, health, and risk behavior above and beyond a measure of experiences of overt racism.

Simultaneous hierarchical regression analyses were conducted separately with psychological functioning, health, and risk behavior as dependent variables. Variables were entered as blocks in this order: (a) demographic control variables and (b) experiences of overt racism (as measured by the blatant racism subscale of the SABR-A$^2$), and (c) lifetime RMA stress (as measured by the composite score of the AARMSS).

Lifetime RMA stress emerged as a significant predictor across outcomes, above and beyond experiences of overt racism. Significant main effects were observed for depression, anxiety, general stress, social anxiety, overall quality of life and general health, physical health, and social relationship satisfaction, controlling for age, sex, and acculturation levels (Table 3.6). Experience of overt racism, as measured by the blatant racism subscale of the SABR-A$^2$ was associated with one outcome, social anxiety.

Table 3.6. Experiences of Overt Racism and Lifetime RMA Stress as Predictors of Psychological Functioning, Health, and Risk Behavior Outcomes

| | Model 1[a] | | Model 2 | | | |
|---|---|---|---|---|---|---|
| | SABR-A$^2$ Blatant Experiences | | SABR-A$^2$ Blatant Experiences | | AARMSS Lifetime Stress | |
| Outcome | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* |
| DASS Depression | .25 (.10) | .16$^{*}$ | -.20 (.13) | -.13 | .13 (.02) | .45$^{***}$ |
| DASS Anxiety | .33 (.08) | .24$^{***}$ | -.04 (.11) | -.03 | .11 (.02) | .43$^{***}$ |
| DASS Stress | .39 (.09) | .27$^{***}$ | -.07 (.12) | -.05 | .13 (.02) | .48$^{***}$ |
| SAS-A Social Anxiety (Total Scale) | 2.29 (1.11) | .13$^{*}$ | 2.93 (1.41) | .17$^{*}$ | 1.51 (.28) | .46$^{**}$ |
| SAS-A Fear of Negative Evaluation From Peers | 1.44 (.51) | .17$^{**}$ | .74 (.66) | .09 | .63 (.13) | .41$^{***}$ |
| SAS-A Social Avoidance and Distress Specific to New Situations | 1.49 (.50) | .25$^{**}$ | .35 (.39) | .06 | .53 (.10) | .47$^{***}$ |
| SAS-A Generalized Social Avoidance and Distress | .69 (.40) | .14 | .50 (.31) | .10 | .35 (.08) | .38$^{*}$ |
| WHO-QOL Overall Quality of Life and General Health | -.40 (1.53) | -.02 | 2.59 (2.04) | .11 | -.86 (.40) | -.19$^{*}$ |
| WHO-QOL Physical Health | -4.42 (1.14) | -.23$^{***}$ | -1.94 (1.52) | -.10 | -.71 (.30) | -.20$^{*}$ |
| WHO-QOL Social Relationships | -1.97 (1.55) | -.08 | .188 (2.09) | .01 | -.62 (.40) | -.14$^{*}$ |
| ASSIST Alcohol Involvement Screening Test | 1.32 (.46) | .18$^{**}$ | 1.01 (.61) | .14 | .09 (.11) | .07 |
| SOGS Gambling Behavior | .33 (.13) | .16$^{*}$ | .15 (.18) | .07 | .05 (.03) | .14 |

*Note.* [a] Covariates entered in Block 1 = age, sex, and acculturation levels.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

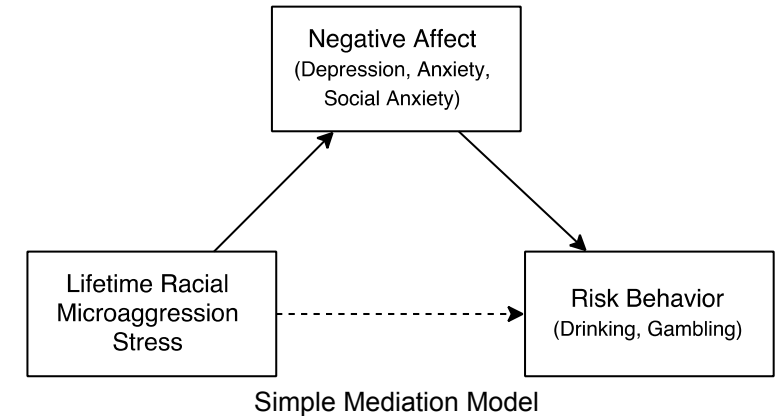
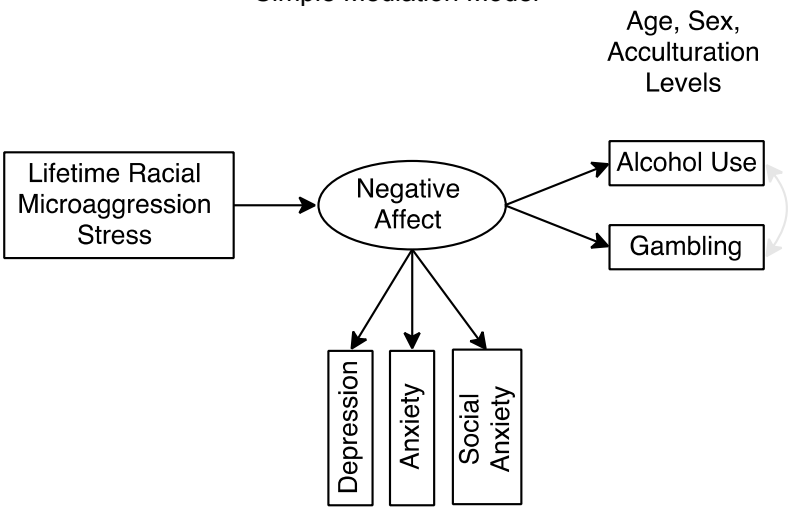
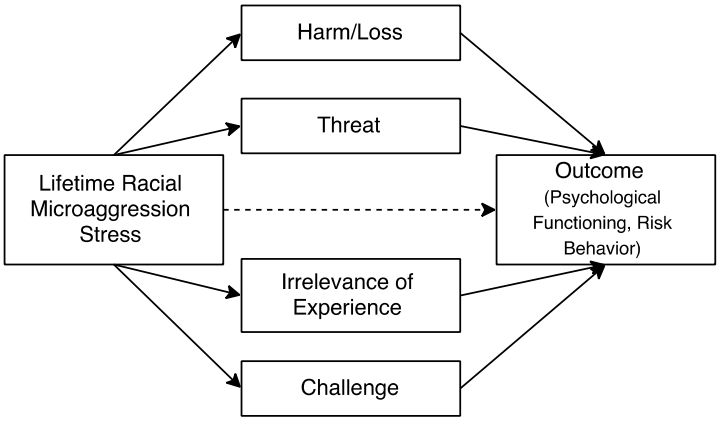
## 3.4 TESTING THEORETICAL MODELS OF LIFETIME RACIAL MICROAGGRESSION STRESS

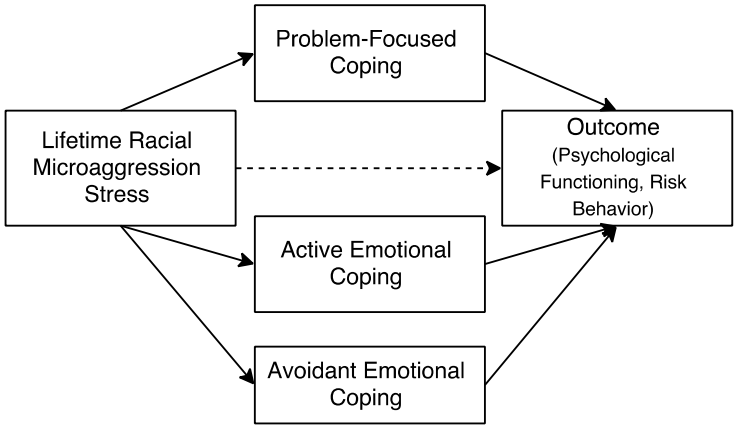
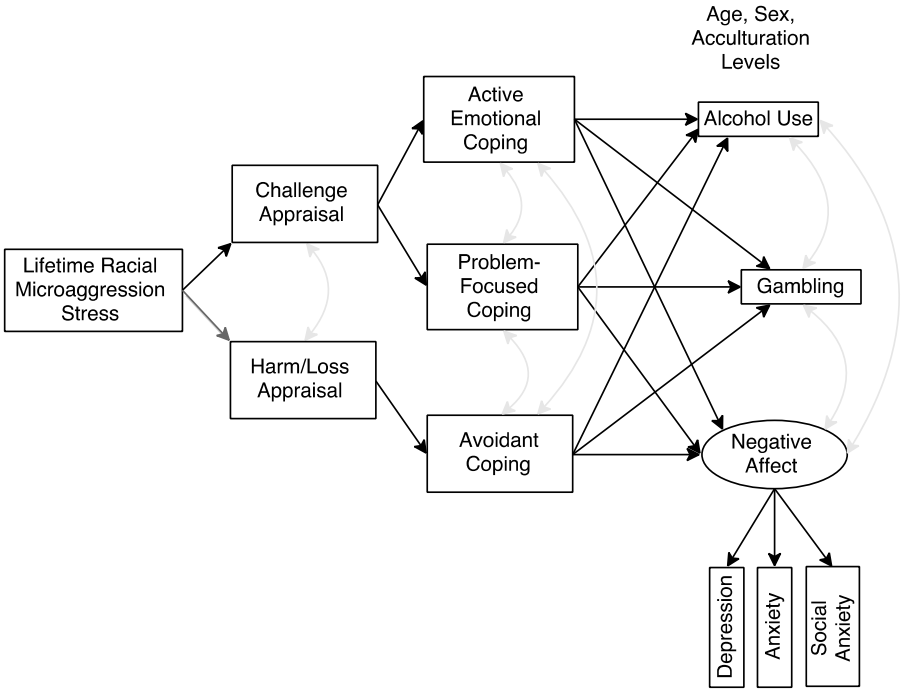
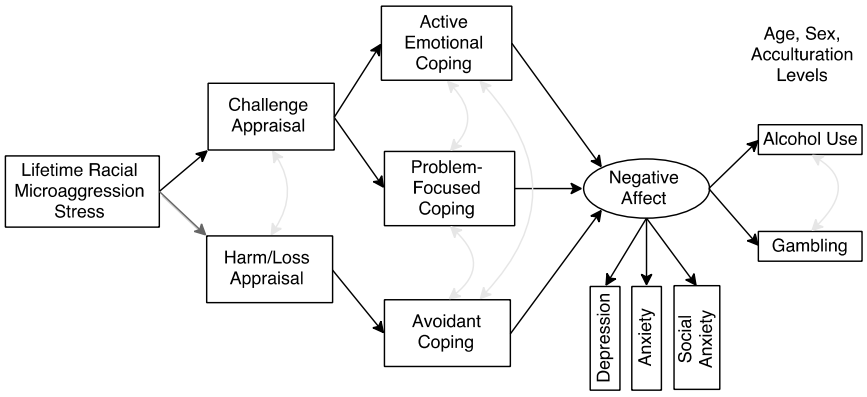
### 3.4.1 *Objective*

| | |
|---|---|
| Aim 3 | Examine the relationships between lifetime RMA stress, psychological functioning, and risk behaviors using the following theoretical models as an analytic framework:<br>1. Stress-Coping Model of Addiction<br>2. Transactional Model of Stress<br>3. The Integrated Stress Model |
| Hypotheses | 1. Negative affect mediates the effect of lifetime RMA stress on risk behavior **(Stress-Coping Model of Addiction)**<br>2. Cognitive appraisal and coping separately mediate the effect of lifetime RMA stress on psychological functioning and risk behavior.<br>a. Appraisals of harm/loss and avoidant emotional coping are associated with worse outcomes<br>b. Appraisal of challenge and problem-focused coping are associated with better outcomes<br>3. There are three causal pathways by which lifetime RMA stress operates on outcomes **(Transactional Model of Stress)** that include the following segments:<br>a. Appraisals of harm/loss lead directly to avoidant emotional coping whereas<br>b. Appraisals of challenge lead to problem focused coping<br>c. Appraisals of challenge lead to active emotional coping<br>4. Adding negative affect as a causal mediator in the Transactional Model of Stress will better describe the pathway by which lifetime RMA stress operates on risk behavior **(Integrated Model)** |

The previous section demonstrated significant and positive relationships between racial microaggression stress, psychological functioning, and risk behavior. Several questions remain about the nature of these associations (i.e., the mechanisms) and the factors that contribute to these processes (i.e., the mediators). This section examined theoretical models that attempt to explain these relationships through the use of mediational analyses. Mediational analysis suggests a causal mechanism (Baron & Kenny, 1986; Frazier, Tix, & Baron, 2004) in which a mediator "is assumed to be caused by the predictor variable and to cause the outcome variable" (Frazier et al., 2004, p. 127). Data analytic procedures included simple and multiple mediation and structural equation modeling, based on the complexity of the model tested. The theoretical models examined were: the Stress-Coping Model of Addiction, the Transactional Model of Stress, and an Integrated Stress Model. For each model, specific hypotheses guided the analyses (Table 3.7). While the cross-sectional nature of the data precluded definitive causal conclusions, the results of these analyses provided more information about potential mechanisms.

Table 3.7. Operationalization and Analytic Diagrams of Lifetime Racial Microaggression Stress Models

| Hypothesis | Model Diagram(s) and Analysis |
|---|---|
| **Stress-Coping Model of Addiction**<br>Negative affect mediates the effect of lifetime RMA stress on risk behavior |  <br>Simple Mediation Model<br>  <br>Structural Equation Model |
| **Transactional Model of Stress**<br>Cognitive appraisal mediates the effect of lifetime RMA stress on psychological functioning and risk behavior |  <br>Multiple Mediation Model with Bootstrapping Technique<br>(Multiple Mediators) |

| Hypothesis | Model Diagram(s) and Analysis |
|---|---|
| **Transactional Model of Stress**<br>Coping mediates the effect of lifetime RMA stress on outcomes |  <br>Multiple Mediation Model with Bootstrapping Technique (Multiple Mediators) |
| **Transactional Model of Stress**<br>There are three causal pathways through appraisal and coping by which lifetime RMA stress operates on outcomes:<br><br>Lifetime RMA stress → Harm/loss appraisal → Avoidant emotional coping → Outcomes<br><br>Lifetime RMA stress → Challenge appraisal → Problem-focused coping → Outcomes<br><br>Lifetime RMA stress → Challenge appraisal → Active emotional coping → Outcomes |  <br>Structural Equation Model |
| **Integrated Stress Model**<br>The addition of negative affect to these causal pathways will describe the pathway by which lifetime RMA stress operates on risk behavior |  <br>Structural Equation Model |

### 3.4.2 *The Stress-Coping Model of Addiction*

| **Hypothesis 1:** | Negative affect mediates the effect of lifetime RMA stress on risk behavior |
|---|---|

Measures of negative affect (symptoms of depression, anxiety, and social anxiety) were assessed separately as *simple mediators* of the associations between lifetime RMA stress and each outcome variable (alcohol use and gambling) (Figure 3.2).

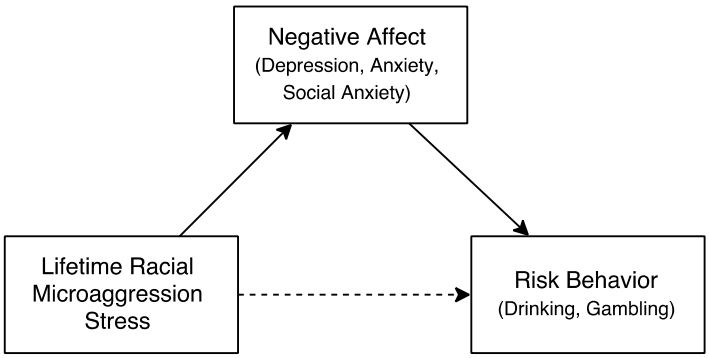



Figure 3.2 Conceptual model of mediation through negative affect.

To test Step 1 of the mediational model, simultaneous regression analyses were conducted with alcohol use and gambling as dependent variables, controlling for sex, age, and acculturation levels. Results indicated that lifetime RMA stress was significantly associated with alcohol use ($B$ = .21, $SE$ = .09, $b$ = .16, $p$ = .01) and gambling ($B$ = .07, $SE$ = .03, $b$ = .19, $p$ = .005), suggesting that individuals who reported higher levels of lifetime RMA stress also reported higher levels of drinking and gambling. Thus, Step 1 of the simple mediational models were satisfied and the results indicated a significant and direct effect between (1) lifetime RMA stress and alcohol use and (2) lifetime RMA stress and gambling.

To test Step 2, three simultaneous regression analyses were conducted separately with depression, anxiety, and social anxiety as dependent variables. Results from these analyses indicated that lifetime RMA stress was significantly associated with depression ($B$ = .10, $SE$ = .02, $b$ = .36, $p$ < .001), anxiety ($B$ = .10, $SE$ = .02, $b$ = .40, $p$ < .001), and social anxiety ($B$ = 1.13, $SE$ = .21, $b$ = .34, $p$ < .001) symptoms, beyond what was predicted by the demographic control variables. These findings suggested that individuals who reported greater cumulative stress due to racial microaggressions also reported higher levels of negative affect at the time of

survey administration. Thus, Steps 1 and 2 of the simple models were satisfied, indicating significant and direct effects between lifetime RMA stress with alcohol use and gambling, and significant and direct effects between lifetime RMA stress and each of the three measures of negative affect used in the study.

To test Step 3, lifetime RMA stress, depression, anxiety, and social anxiety were entered into multiple hierarchical regressions for both alcohol use and gambling. The variables were entered as blocks in this order: (a) demographic control variables, (b) lifetime RMA stress, (c) measures of negative affect. Results indicated that depression ($B$ = -.16, $SE$ = .32, $b$ = -.03, $p$ = .63) and anxiety ($B$ = .11, $SE$ = .37, $b$ = .02, $p$ = .77) were not significantly related to alcohol use beyond what was predicted by lifetime RMA stress (Table 3.8). Thus, depression and anxiety symptoms did not appear to mediate the relationship between lifetime RMA stress and alcohol use. While participants who reported higher lifetime stress due to racial microaggressions also reported higher levels of depression, anxiety, social anxiety, and alcohol use, levels of negative affect did not explain the relationship observed between lifetime RMA stress and alcohol use. Interestingly, a negative relationship was actually observed between social anxiety and alcohol use such that increased social anxiety ($B$ = -.06, $SE$ = .03), $b$ = -.16, $p$ = .025) mitigated the relationship between lifetime RMA stress and alcohol use (Figure 3.3).

Table 3.8. Results for Alcohol Use Model

| Step and Variable | *B (SE)* | *b* | $\Delta R^2$ | Total $R^2$ |
|---|---|---|---|---|
| *Mediator: Depression* | | | | |
| Step 2 | | | .03* | .06* |
| RMA Stress | .23 (.09) | .17** | | |
| Step 3 | | | .001 | .06* |
| RMA Stress | .25 (.10) | .19** | | |
| Depression | -.16 (.32) | -.03 | | |
| *Mediator: Anxiety* | | | | |
| Step 2 | | | .03* | .06* |
| RMA Stress | .23 (.09) | .17** | | |
| Step 3 | | | .00 | .06* |
| RMA Stress | .22 (.10) | .17* | | |
| Anxiety | .11 (.37) | .02 | | |
| *Mediator: Social Anxiety* | | | | |
| Step 2 | | | .03* | .06* |
| RMA Stress | .23 (.09) | .17** | | |
| Step 3 | | | .01 | .05* |
| RMA Stress | .30 (.09) | .23** | | |
| Social Anxiety | -.06 (.03) | -.16* | | |

*Note.* Covariates were age, sex, and acculturation levels.
*$p$ < .05. **$p$ < .01. ***$p$ < .001.

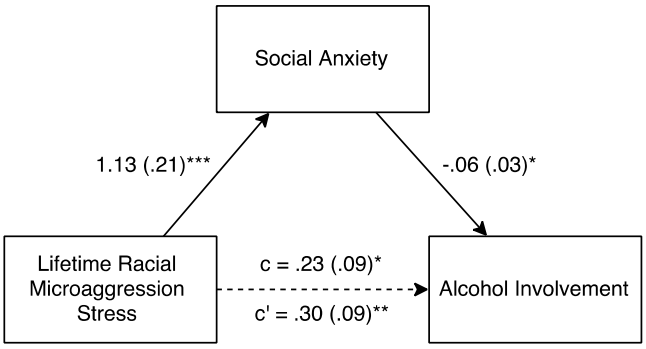



Figure 3.3 Simple mediational model of alcohol use through social anxiety. Unstandardized coefficients and standard errors are shown.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Mediational models indicated anxiety ($B$ = .25, $SE$ = .11, $b$ = .16, $p$ = .21) was a significantly unique predictor of gambling, controlling for lifetime RMA stress, while depression ($B$ = .17, $SE$ = .09, $b$ = .13, $p$ = .062) and social anxiety ($B$ = .01, $SE$ = .01, $b$ = .05, $p$ = .491) were not (Table 3.9).

Table 3.9. Results for Gambling Model

| Step and Variable | *B (SE)* | *b* | $\Delta R^2$ | Total $R^2$ |
|---|---|---|---|---|
| *Mediator: Depression* | | | | |
| Step 2 | | | .03** | .06** |
| RMA Stress | .07 (.03) | .19** | | |
| Step 3 | | | .01 | .07** |
| RMA Stress | .05 (.03) | .14* | | |
| Depression | .17 (.09) | .13 | | |
| *Mediator: Anxiety* | | | | |
| Step 2 | | | .03** | .06** |
| RMA Stress | .07 (.03) | .19** | | |
| Step 3 | | | .02* | .08** |
| RMA Stress | .05 (.03) | .12 | | |
| Anxiety | .25 (.11) | .16* | | |
| *Mediator: Social Anxiety* | | | | |
| Step 2 | | | .03** | .06** |
| RMA Stress | .07 (.03) | .19** | | |
| Step 3 | | | .002 | .06* |
| RMA Stress | .07 (.05) | .17* | | |
| Social Anxiety | .01 (.01) | .05 | | |

*Note.* Covariates were age, sex, and acculturation levels.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

As demonstrated by the reduction of the beta weight associated with lifetime RMA stress in this mediational model (from $b$ = .19 to $b$ = .16), the results further indicated that anxiety was a partial mediator. Thus, in general, support was found for an indirect effect of lifetime RMA

stress on gambling such that stress was associated with anxiety, which, in turn, was associated with gambling. The more participants were stressed by racial microaggressions in their lifetimes, the more likely they were to also generally feel anxious and engage in gambling behavior (Figure 3.4).

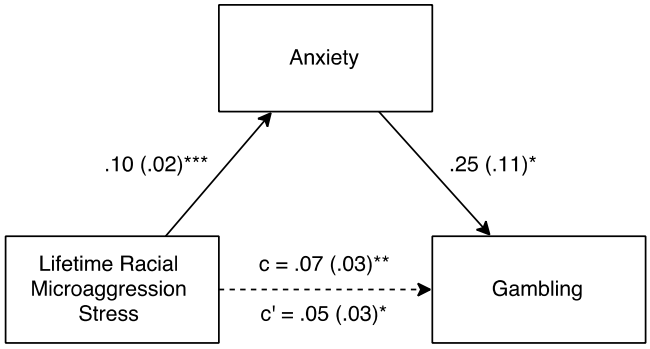



Figure 3.4 Simple mediational model of gambling through anxiety. Unstandardized coefficients and standard errors are shown.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

A structural model was designed to test the hypothesis that negative affect (a latent factor composed of depression, anxiety, and social anxiety scores) was a mediator of lifetime RMA stress on alcohol use and gambling; i.e., the following causal pathway was tested within the framework of the structural model:

RMA stress → Negative affect → Risk behavior

Based on multiple fit indices, the overall fit of the proposed model to the data was fair to good, with substantial improvement over the baseline (measurement) model, $\chi^2(14) = 31.84$ ($p < .001$), *RMSEA* = .069 (95% *CI:* .037-.101), *NNFI* = .87, *SRMR* = .032, *CFI* = .95. Consistent with predictions, the following significant direct and indirect effects were observed (Figure 3.5).

1. RMA stress → Alcohol use ($p = .01$)
2. RMA stress → Negative affect → Gambling ($p = .03$)
3. RMA stress → Negative affect ($p < .001$)

However, the indirect effect on alcohol use did not reach significance ($B = -.03$, $SE = .06$, $p = .58$).

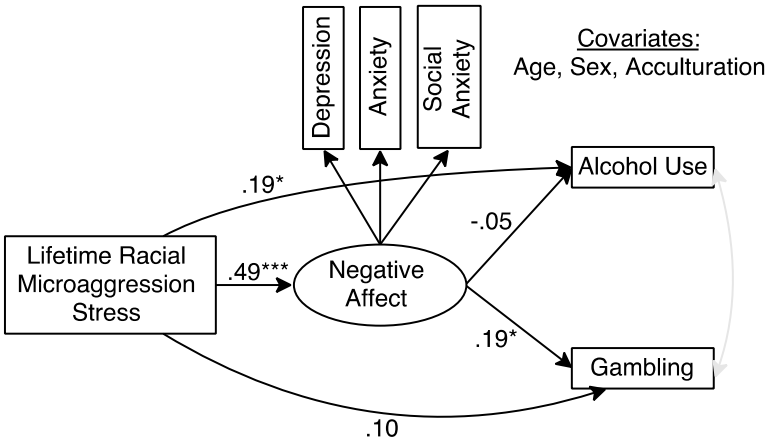



Figure 3.5 Stress-Coping Model of Addiction illustrating the effect of lifetime RMA stress on risk behavior through negative affect. Standardized coefficients are shown. Age, sex, and acculturation levels were entered as covariates.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Additionally, because the direct effect of lifetime RMA stress on gambling was not significant (*B* = .04, *SE* = .03, *p* = .22), the presence of the significant indirect effect yields the strongest demonstration of mediation (Kline, 2005; Roth et al., 1989), assuming correct directionality specifications (Table 3.10).

Table 3.10. Effects Decomposition for Structural Stress-Coping Model of Addiction

| | Endogenous Variables | | | | | |
|---|---|---|---|---|---|---|
| | Affect | | Alcohol Use | | Gambling | |
| Causal Variables | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* |
| RMA indirect | --- | --- | -.03 (.06) | -.02 | .03 (.02)$^{*}$ | .09$^{*}$ |
| Direct | .10 (.01)$^{***}$ | .49$^{***}$ | .25 (.10)$^{*}$ | .19$^{*}$ | .04 (.03) | .10 |
| Total | .10 (.01)$^{***}$ | .49$^{***}$ | .22 (.08)$^{*}$ | .16$^{*}$ | .07 (.03)$^{**}$ | .19$^{**}$ |
| Affect indirect | --- | --- | --- | --- | --- | --- |
| Direct | --- | --- | -.32 | -.05 | .35$^{*}$ | .19$^{*}$ |
| Total | --- | --- | -.32 | -.05 | .35$^{*}$ | .19$^{*}$ |

*Note:* Covariates were age, sex, acculturations levels.
$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

These findings suggest that the impact of this type of stress on risk behavior is influenced by negative affect. Specifically, it appears that individuals who experienced higher levels of racial microaggression stress were more likely to also generally feel depressed and anxious and engage in gambling behavior. Further, the data suggest that negative affect may fully mediate the relationship between lifetime RMA stress and gambling; that is, negative affect appears to be responsible for the relationship observed between lifetime RMA stress and gambling. In general, some support was found for the Stress-Coping Model. The finding from the simple mediational

model that social anxiety mitigates the effects of lifetime RMA stress on alcohol use is not surprising given that individuals with high levels of social anxiety may be less likely to engage in social drinking. That is, high stress load due to racial microaggressions may result in increased fear of social evaluation and avoidance of social situations, reducing opportunities for social drinking in the college setting.

### 3.4.3 *The Transactional Model of Stress*

| | |
|---|---|
| **Hypothesis 2:** | Cognitive appraisal and coping separately mediate the effect of lifetime RMA stress on psychological functioning and risk behavior. **(Transactional Model of Stress)** |

Next, two components of the Transactional Model of Stress were examined: cognitive appraisals of racial microaggressions and ways of coping with these stressors. Descriptive statistics were first obtained in order to better understand how individuals interpret and respond to these experiences of everyday racism. Given that not much is known about these constructs, appraisals and coping were separately assessed as potential mediators of lifetime RMA stress on psychological functioning (depression, general anxiety, and social anxiety) and engagement in risk behavior.

*Cognitive Appraisal.* In general, respondents tended to endorse cognitive appraisals of challenge ($M$ = 2.73, $SD$ = .61) most frequently when experiencing racial microaggressions, followed by appraisals of irrelevance ($M$ = 1.98, $SD$ = .57), then threat ($M$ = 1.38, $SD$ = .71), and finally, harm/loss ($M$ = 1.24, $SD$ = .81). Results indicated that women in the sample tended to endorse appraisals of harm/loss (women: $n$ = 168; $M$ = 1.36, $SD$ = .77; men: $n$ = 87, $M$ = 1.01, $SD$ = .85; $t(253) = 3.37$, $p$ = .001) and threat (women: $n$ = 168; $M$ = 1.51, $SD$ = .63; men: $n$ = 86, $M$ = 1.14, $SD$ = .80; $t(252) = 4.00$, $p < .001$) more frequently than men. Additionally, men reported believing these experiences were irrelevant more often than women (women: $n$ = 168; $M$ = 1.87, $SD$ = .68; men: $n$ = 86, $M$ =2.19, $SD$ = .85; $t(252) = -3.26$, $p$ = .001). Men and women did not differ in cognitive appraisals of challenge (women: $n$ = 168; $M$ =2.72, $SD$ = .57; men: $n$ =86, $M$ = 2.75, $SD$ = .69; $t(252) = -.38$, $p$ = .71). Acculturation to culture of origin was positively associated with appraisals of challenge ($r$ = .17, $p$ = .01); and Western orientation (acculturation to majority/host culture) was negatively associated with appraisals of threat ($r$ = -.20, $p$ = .001) and positively associated with appraisals of challenge ($r$ = .27, $p < .001$).

Appraisal did not differ on any other demographic variable (generational status, Asian ethnic subgroup membership, or age).

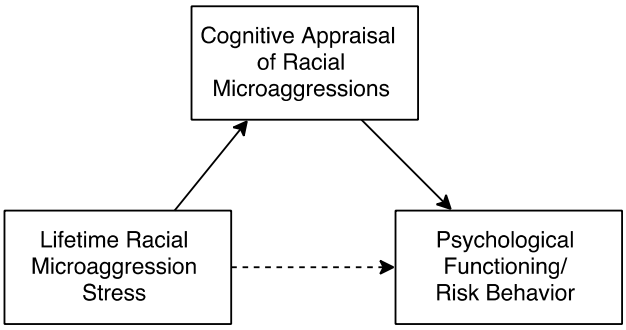



Figure 3.6 Conceptual model of mediation through cognitive appraisal.

To test Step 1 of the multiple mediational model for cognitive appraisal (Figure 3.6), simultaneous hierarchical regression analyses were conducted with depression, anxiety, social anxiety, alcohol use, and gambling as the dependent variables, controlling for sex, age, and acculturation levels. Results from these analyses indicated that lifetime RMA stress was significantly associated with symptoms of depression ($B$ = .10, $SE$ = .02, $b$ = .36, $p$ < .001), anxiety ($B$ = .10, $SE$ = .02, $b$ = .40, $p$ < .001), social anxiety ($B$ = 1.13, $SE$ = .21, $b$ = .34, $p$ < .001), and alcohol use ($B$ = .21, $SE$ = .09, $b$ = .16, $p$ = .01), and gambling ($B$ = .07, $SE$ = .03, $b$ = .19, $p$ = .005), suggesting that individuals who experienced higher levels of lifetime RMA stress tended to also have higher levels of depression, anxiety, social anxiety, alcohol use, and gambling behavior at the time of survey administration. Thus, Step 1 of the multiple mediational model was satisfied and the results indicated significant and direct effects between lifetime RMA stress and outcomes.

To test Step 2, simultaneous hierarchical regression analyses were conducted with cognitive appraisal styles as dependent variables; variables were entered as blocks in this order: (a) demographic control variables and (b) lifetime RMA stress. Results from these analyses indicated that lifetime RMA stress was positively associated with appraisal of harm/loss ($B$ = .10, $SE$ = .01, $b$ = .55, $p$ < .001) and threat ($B$ = .07, $SE$ = .01, $b$ = .44, $p$ < .001), and negatively associated with appraisal of irrelevance of the experience ($B$ = -.04, $SE$ = .01, $b$ = -.24, $p$ = .001). No significant associations were observed between lifetime RMA stress and appraisal of challenge ($B$ = .001, $SE$ = .01, $b$ = .01, $p$ = .87). The results suggested that the more stress

individuals experienced, the more they believed these experiences would caused them damage and harm or had already caused them irreparable and unavoidable damage or harm—whereas individuals who experienced lower levels of lifetime RMA stress tended to appraise these events as irrelvant to their functioning. However, the reverse may also be true; without longitudinal data, it is not possible to ascertain the direction of causality. In terms of the hypotheses, however, Steps 1 and 2 of the model were satisfied, indicating a significant and direct effect between lifetime RMA stress and depression, and significant and direct effects between lifetime RMA stress and cognitive appraisals.

Lastly, to test Step 3, lifetime RMA stress and cognitive appraisals were entered into simultaneous hierarchical regressions with depression, anxiety, social anxiety, alcohol use, and gambling as criterion variables. The variables were entered as blocks in this order: (a) demographic control variables, (b) lifetime RMA stress, and (c) cognitive appraisals.

The indirect effect through appraisal of harm/loss was significant (*B* = .043, *SE* = .019, 95% bias-corrected *CI* = .005-.082) indicating that cognitive appraisals of racial microaggressions were significantly related to depressed mood, controlling for lifetime RMA stress (Figure 3.7). As demonstrated by the reduction of the beta weights associated with lifetime RMA stress (from *b* = .36 to *b* = .25), cognitive appraisal partially mediated the effect. No associations were observed for anxiety, social anxiety, alcohol involvement, or gambling (Table 3.11).

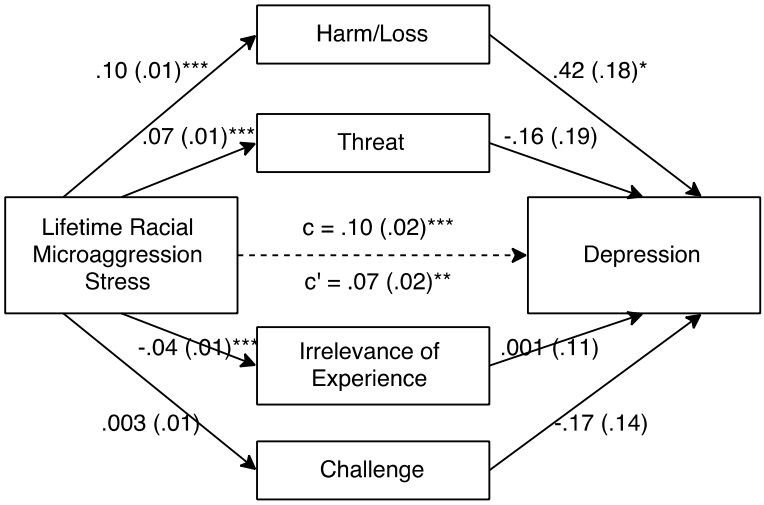



Figure 3.7 Multiple mediational model of depression through appraisal. Unstandardized coefficients and standard errors are shown.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Table 3.11. Lifetime RMA Stress and Cognitive Appraisal as Predictors

| Step and Variable | *B (SE)* | *b* | $\Delta R^2$ | Total $R^2$ |
|---|---|---|---|---|
| *Dependent variable: Depression* | | | | |
| Step 2 | | | .11*** | .17*** |
| Racial Microaggression Stress | .10 (.02) | .36*** | | |
| Step 3 | | | .04** | .21*** |
| Racial Microaggression Stress | .07 (.02) | .25*** | | |
| Appraisal of Harm/Loss | .42 (.18) | .27** | | |
| Appraisal of Threat | -.16 (.19) | -.09 | | |
| Appraisal of Irrelevance | -.001 (.11) | <.001 | | |
| Appraisal of Challenge | -.17 (.14) | -.06 | | |
| *Dependent variable: Anxiety* | | | | |
| Step 2 | | | .14*** | .19*** |
| Racial Microaggression Stress | .10 (.02) | .40*** | | |
| Step 3 | | | .02 | .22*** |
| Racial Microaggression Stress | .09 (.02) | .34*** | | |
| Appraisal of Harm/Loss | .23 (.15) | .17 | | |
| Appraisal of Threat | -.11 (.17) | -.07 | | |
| Appraisal of Irrelevance | -.001 (.10) | <.001 | | |
| Appraisal of Challenge | -.16 (.12) | -.09 | | |
| *Dependent variable: Social Anxiety* | | | | |
| Step 2 | | | .10*** | .20*** |
| Racial Microaggression Stress | 1.13 (.21) | .34*** | | |
| Step 3 | | | .02 | .22*** |
| Racial Microaggression Stress | .87 (.25) | .26*** | | |
| Appraisal of Harm/Loss | 1.08 (2.03) | .06 | | |
| Appraisal of Threat | 1.06 (2.18) | .05 | | |
| Appraisal of Irrelevance | -1.89 (1.24) | -.10 | | |
| Appraisal of Challenge | -.95 (1.60) | -.04 | | |
| *Dependent variable: Alcohol Involvement* | | | | |
| Step 2 | | | .03** | .07** |
| Racial Microaggression Stress | .24 (.09) | .18* | | |
| Step 3 | | | .01 | .07* |
| Racial Microaggression Stress | .27 (.11) | .20* | | |
| Appraisal of Harm/Loss | .51 (.90) | .07 | | |
| Appraisal of Threat | -1.03 (.96) | -.12 | | |
| Appraisal of Irrelevance | .11 (.55) | .01 | | |
| Appraisal of Challenge | -.41 (.70) | -.04 | | |
| *Dependent variable: Gambling Behaviors* | | | | |
| Step 2 | | | .03** | .06** |
| Racial Microaggression Stress | .07 (.03) | .19** | | |
| Step 3 | | | .02 | .08* |
| Racial Microaggression Stress | .09 (.03) | .22** | | |
| Appraisal of Harm/Loss | -.19 (.26) | -.10 | | |
| Appraisal of Threat | .27 (.28) | .11 | | |
| Appraisal of Irrelevance | .30 (.16) | .13 | | |
| Appraisal of Challenge | -.19 (.20) | -.07 | | |

*Note.* Covariates were age, sex, and acculturation levels.
*$p < .05$. **$p < .01$. ***$p < .001$.

Thus, in general, support was found for an indirect effect of lifetime RMA stress on one aspect of psychological functioning, depressed mood, such that lifetime RMA stress was

associated with cognitive appraisal of harm/loss, which, in turn, was associated with symptoms of depression. These results tentatively suggest that individuals who experienced higher levels of lifetime distress due to racial microaggressions were more likely to appraise racial microaggressions as having caused them irreparable, unavoidable harm or loss, resulting in higher levels of depressed mood.

*Coping.* In general, participants reported greater use of active emotional strategies ($M$ = 12.47, $SD$ = 5.68) in response to racial microaggressions, followed by problem-focused coping ($M$ = 10.47, $SD$ = 4.90), and finally, avoidant emotional coping ($M$ = 8.56, $SD$ = 4.42). Results indicated that women in the sample generally reported greater utilization of coping responses than men, endorsing greater use of problem-focused coping (women: $n$ = 163; $M$ = 11.06, $SD$ = 4.68; men: $n$ = 85, $M$ = 9.35, $SD$ =5.19; $t(246) = 2.62$, $p$ = .009), active emotional coping (women: $n$ = 163; $M$ = 13.19, $SD$ = 5.28; men: $n$ = 85, $M$ = 11.08, $SD$ =6.22; $t(246) = 2.80$, $p$ = .005), and avoidant emotional coping (women: $n$ = 163; $M$ =9.22, $SD$ =4.50; men: $n$ =85, $M$ = 7.29, $SD$ = 4.03; $t(246) = 3.31$, $p$ = .001). Coping strategies did not differ across other demographic variables.

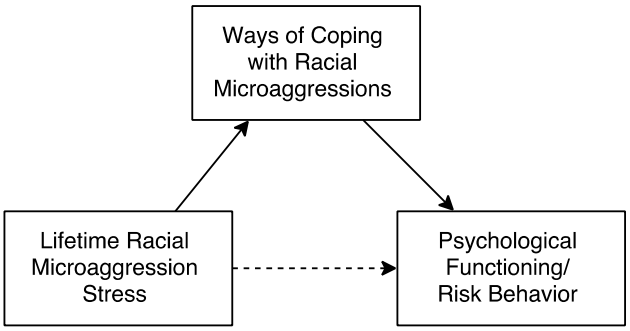



Figure 3.8 Conceptual model of mediation through coping.

Coping strategies were assessed as potential mediators of lifetime RMA stress on psychological functioning (depression, general anxiety, and social anxiety) and engagement in risk behavior using simultaneous multiple mediational models (Figure 3.8). Earlier analyses indicated that lifetime RMA stress was significantly associated with depression, anxiety, social anxiety, alcohol use, and gambling behavior (See §3.4.2). Thus, Step 1 of the multiple mediational model was satisfied with previous results indicating significant and direct effects between lifetime RMA stress, psychological functioning, and risk behavior.

To test Step 2, simultaneous hierarchical regression analyses were conducted separately with coping strategies as dependent variables; variables were entered as blocks in this order: (a) demographic control variables and (b) lifetime RMA stress. Results from these analyses indicated that lifetime RMA stress was significantly associated with avoidant emotional coping ($B$ = .27, $SE$ = .07, $b$ = .27, $p$ < .001). No significant associations with problem-focused coping ($B$ = .05, $SE$ = .07, $b$ = .05, $p$ = .70) or active emotional coping ($B$ = .13, $SE$ = .09, $b$ = .10) were observed, suggesting that individuals who reported greater lifetime RMA stress may tend to also cope with racial microaggressions using avoidant emotional strategies. Thus, Steps 1 and 2 of the model were satisfied, indicating a significant and direct effect between lifetime RMA stress and psychological functioning, and significant and direct effects between lifetime RMA stress and coping strategies.

Lastly, to test Step 3, lifetime RMA stress and coping were entered into simultaneous hierarchical regressions with depression, anxiety, social anxiety, alcohol involvement, and gambling as criterion variables. The variables were entered as blocks in this order: (a) demographic control variables, (b) lifetime RMA stress, and (c) coping strategies.

The indirect effect through avoidant emotional coping was significant for all models: depression ($B$ = .032, $SE$ = .010, 95% bias-corrected $CI$ = .015-.052), anxiety ($B$ = .020, $SE$ = .007, 95% bias-corrected $CI$ = .008, .034), social anxiety ($B$ = .284, $SE$ = .093, 95% bias-corrected $CI$ = .125-.489), alcohol use ($B$ = .064, $SE$ = .033, 95% bias-corrected $CI$ = .010-.14) (Table 3.12). The results indicated that the type of coping strategy used in response to racial microaggressions was significantly related to psychological functioning and alcohol use, beyond what was predicted by lifetime RMA stress. As demonstrated by the reduction of the beta weights associated with the predictor upon introduction of mediators into the model, the results further indicated that coping strategy partially mediated these relationships.

Table 3.12. Lifetime RMA Stress and Coping as Predictors

| Step and Variable | *B (SE)* | *b* | $\Delta R^2$ | Total $R^2$ |
|---|---|---|---|---|
| *Dependent variable: Depression* | | | | |
| Step 2 | | | .11*** | .17*** |
| Racial Microaggression Stress | .10 (.02) | .36*** | | |
| Step 3 | | | .04** | .21*** |
| Racial Microaggression Stress | .07 (.02) | .25*** | | |
| Appraisal of Harm/Loss | .42 (.18) | .27** | | |
| Appraisal of Threat | -.16 (.19) | -.09 | | |
| Appraisal of Irrelevance | -.001 (.11) | <.001 | | |
| Appraisal of Challenge | -.17 (.14) | -.06 | | |
| *Dependent variable: Anxiety* | | | | |
| Step 2 | | | .14*** | .19*** |
| Racial Microaggression Stress | .10 (.02) | .40*** | | |
| Step 3 | | | .02 | .22*** |
| Racial Microaggression Stress | .09 (.02) | .34*** | | |
| Appraisal of Harm/Loss | .23 (.15) | .17 | | |
| Appraisal of Threat | -.11 (.17) | -.07 | | |
| Appraisal of Irrelevance | -.001 (.10) | <.001 | | |
| Appraisal of Challenge | -.16 (.12) | -.09 | | |
| *Dependent variable: Social Anxiety* | | | | |
| Step 2 | | | .10*** | .20*** |
| Racial Microaggression Stress | 1.13 (.21) | .34*** | | |
| Step 3 | | | .02 | .22*** |
| Racial Microaggression Stress | .87 (.25) | .26*** | | |
| Appraisal of Harm/Loss | 1.08 (2.03) | .06 | | |
| Appraisal of Threat | 1.06 (2.18) | .05 | | |
| Appraisal of Irrelevance | -1.89 (1.24) | -.10 | | |
| Appraisal of Challenge | -.95 (1.60) | -.04 | | |
| *Dependent variable: Alcohol Involvement* | | | | |
| Step 2 | | | .03** | .07** |
| Racial Microaggression Stress | .24 (.09) | .18* | | |
| Step 3 | | | .01 | .07* |
| Racial Microaggression Stress | .27 (.11) | .20* | | |
| Appraisal of Harm/Loss | .51 (.90) | .07 | | |
| Appraisal of Threat | -1.03 (.96) | -.12 | | |
| Appraisal of Irrelevance | .11 (.55) | .01 | | |
| Appraisal of Challenge | -.41 (.70) | -.04 | | |
| *Dependent variable: Gambling Behaviors* | | | | |
| Step 2 | | | .03** | .06** |
| Racial Microaggression Stress | .07 (.03) | .19** | | |
| Step 3 | | | .02 | .08* |
| Racial Microaggression Stress | .09 (.03) | .22** | | |
| Appraisal of Harm/Loss | -.19 (.26) | -.10 | | |
| Appraisal of Threat | .27 (.28) | .11 | | |
| Appraisal of Irrelevance | .30 (.16) | .13 | | |
| Appraisal of Challenge | -.19 (.20) | -.07 | | |

*Note.* Covariates were age, sex, and acculturation levels.
*$p < .05$. **$p < .01$. ***$p < .001$.

Thus, in general, these data provide preliminary support for an indirect effect of lifetime RMA stress on depressed mood (Figure 3.9), anxiety (Figure 3.10), social anxiety (Figure 3.11),

and alcohol involvement (Figure 3.12), such that lifetime RMA stress was associated with use of avoidant emotional strategies to cope with racial microaggressions, which in turn, was associated with poorer outcomes. While indirect effects on gambling behavior were not significant, problem-focused coping emerged as a compensatory factor in the regression, suggesting that the use of problem-focused coping mitigated risk for gambling (Figure 3.13).

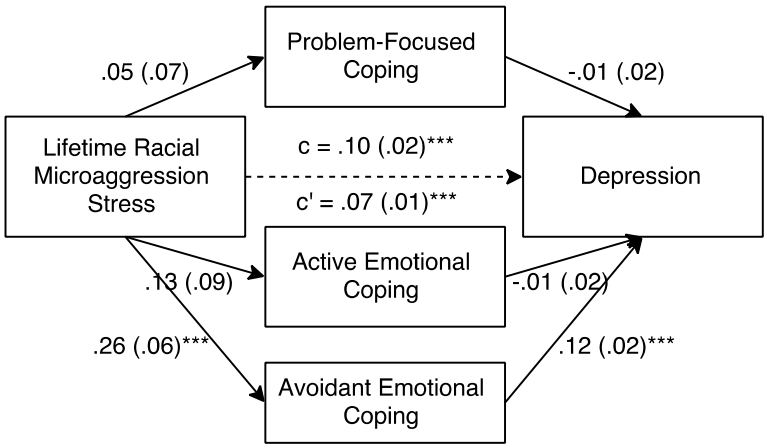



Figure 3.9 Multiple mediational model of depression through coping. Unstandardized coefficients and standard errors are shown.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

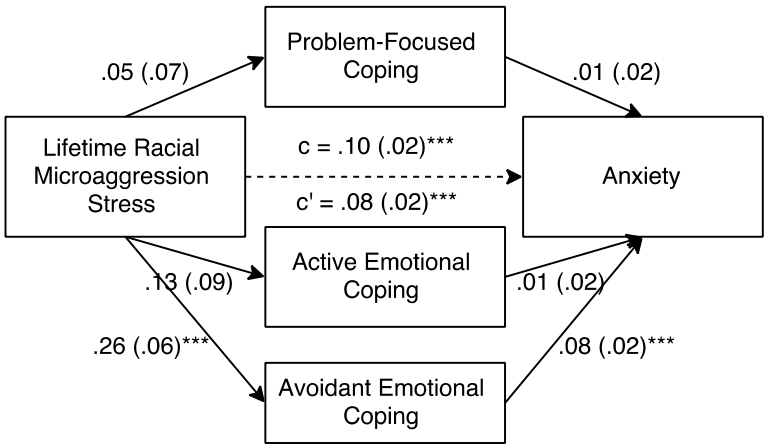



Figure 3.10 Multiple mediational model of anxiety through coping. Unstandardized coefficients and standard errors are shown.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

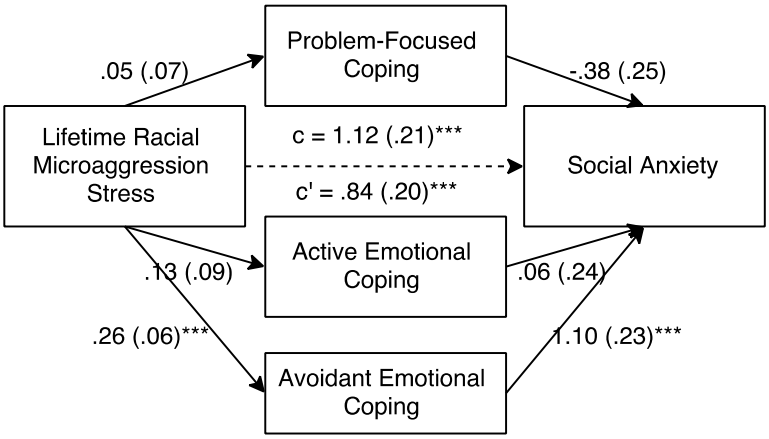



Figure 3.11 Multiple mediational model of social anxiety through coping. Unstandardized coefficients and standard are shown.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

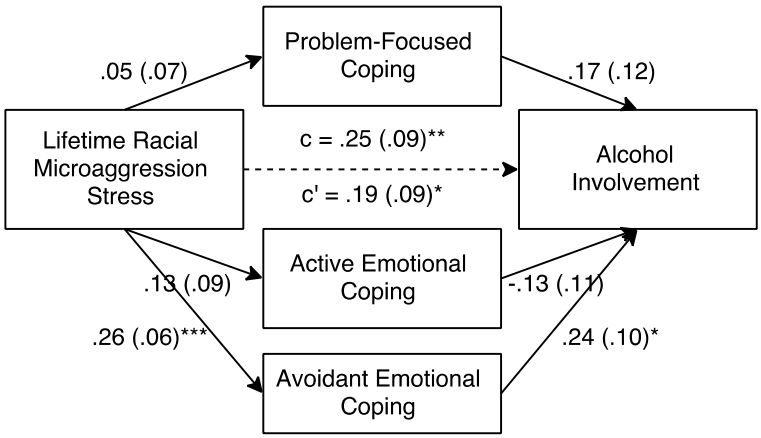



Figure 3.12 Multiple mediational model of alcohol use through coping. Unstandardized coefficients and standard errors are shown.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

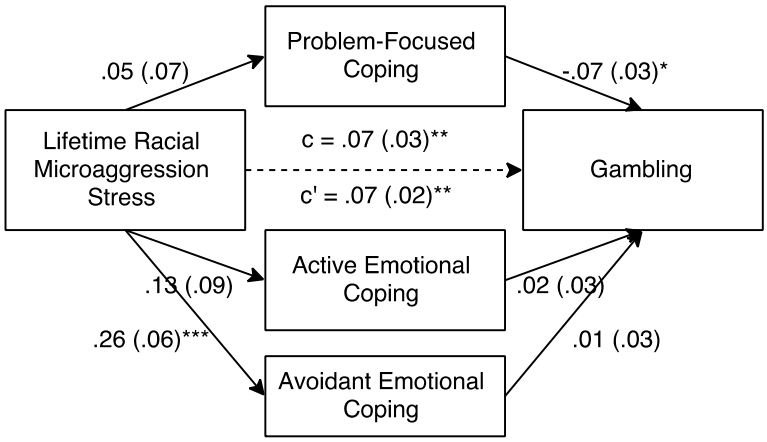



Figure 3.13 Multiple mediational model of gambling through cognitive appraisal. Unstandardized coefficients and standard errors are shown.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

| **Hypothesis 3:** | There are three causal pathways by which lifetime RMA stress operates on outcomes. **(Transactional Model of Stress)** |
|---|---|

The previous section explored the possible mediational role of cognitive appraisal and coping using simple models. Next, the following causal pathways of cognitive appraisal and coping on affect and risk behavior were examined within the context of a structural model (Figure 3.14):

1. RMA stress → Harm/loss appraisal → Avoidant emotional coping → Outcomes
2. RMA stress → Challenge appraisal → Problem-focused coping → Outcomes
3. RMA stress → Challenge appraisal → Active emotional coping → Outcomes

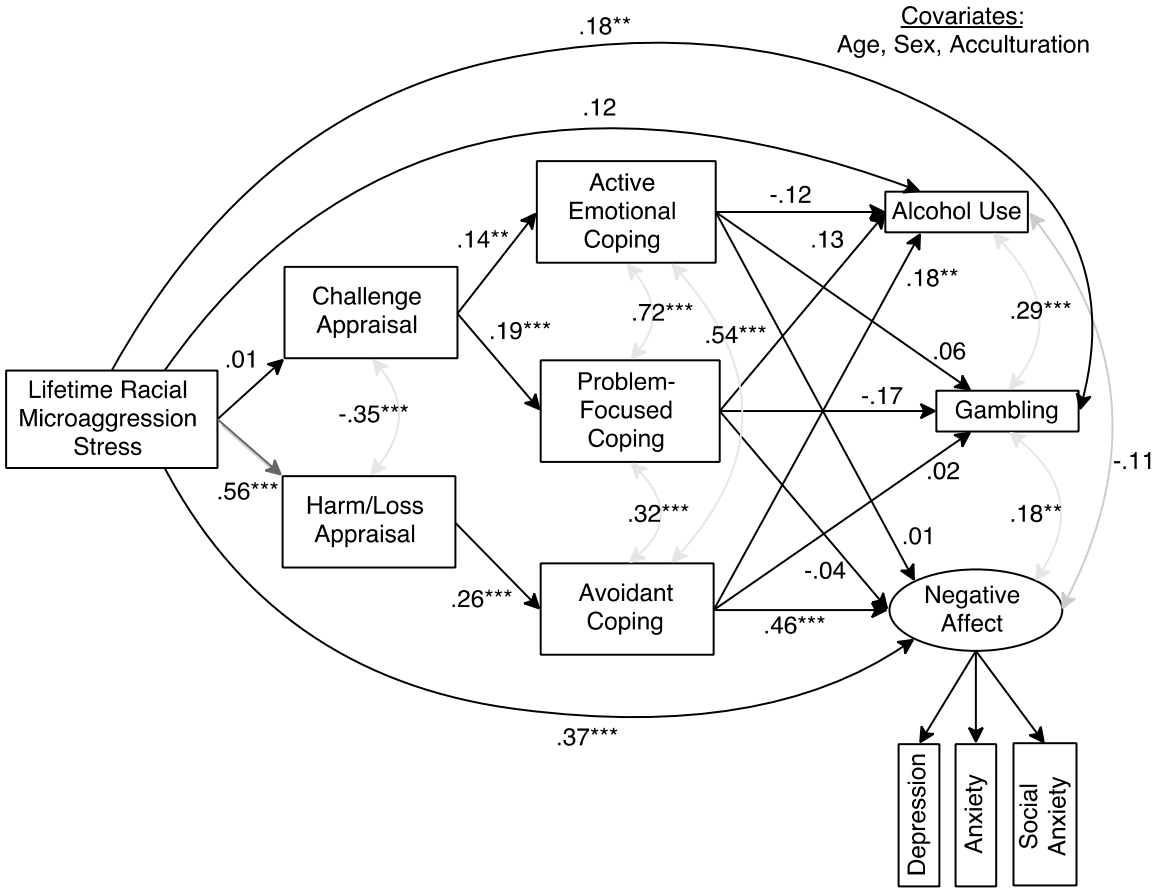



Figure 3.14 Transactional Model of Stress illustrating the effect of lifetime RMA stress on alcohol use, gambling, and negative affect through cognitive appraisal and coping. Standardized coefficients are shown. Age, sex, and acculturation levels were entered as covariates.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Based on multiple fit indices, the overall fit of the hypothesized model to the data was good and provided substantial improvement over the baseline (measurement) model, $\chi^2(36) = 68.21$ ($p$

= .001), *RMSEA* = .058 (95% *CI*: .036-.079), *NNFI* = .91, *SRMR* = .035, *CFI* = .97. Standardized loadings for the latent factor of negative affect ranged from .62 to .82 (all $p < .001$). Consistent with predictions, indirect effects of lifetime RMA stress on negative affect ($B = .013$, $SE = .004$, $p < .001$) and alcohol use ($B = .034$, $SE = .016$, $p = .036$) were significant. However, the indirect effect on gambling ($B = .001$, $SE = .004$, $p = .774$) was not significant. Total, direct, and indirect estimates for the model are located in Appendix C. Specific paths in the model that reached significance were:

1. RMA Stress → Harm/loss appraisal → Avoidant coping → Alcohol use ($p = .03$)
2. RMA Stress → Harm/loss appraisal → Avoidant coping → Negative affect ($p < .001$)
3. RMA Stress → Negative affect ($p < .001$)
4. RMA Stress → Gambling ($p = .006$)

In general, preliminary support was found for the Transactional Model of Stress in that significant indirect effects of lifetime RMA stress on negative affect (depression, anxiety, social anxiety) and alcohol use through appraisal of harm/loss and avoidant coping were observed. These findings tentatively suggest that the cumulative impact of this stress may be partly influenced by the manner in which individuals interpret and subsequently cope with these experiences. Specifically, there may be a range of adverse psychological and health implications (depression, anxiety, social anxiety, alcohol use) for responding to racial microaggressions with (a) perceptions that damage has already been sustained (appraisals of harm/loss) and (b) subsequent coping strategies that include self-blame, denial, and disengagement (avoidant emotional coping).

### 3.4.4 *The Integrated Stress Model*

| | |
|---|---|
| **Hypothesis 4:** | Adding negative affect as a causal mediator in the Transactional Model of Stress will better describe the pathway by which lifetime RMA stress operates on risk behavior **(Integrated Stress Model)** |

The Stress-Coping Model of Addiction suggests that negative affect mediates the impact of stress on risk behavior whereas the Transactional Model of Stress suggests that appraisal and coping function as important mediators on outcomes. The two models were integrated and examined within the context of a structural model (Figure 3.15). The following causal pathways of cognitive appraisal, coping, and affect on risk behavior were tested:

1. RMA stress → Harm/loss → Avoidant emotional coping → Negative Affect → Risk Behavior
2. RMA stress → Challenge → Problem-focused coping → Negative Affect → Risk Behavior
3. RMA stress → Challenge → Active emotional coping → Negative Affect → Risk Behavior

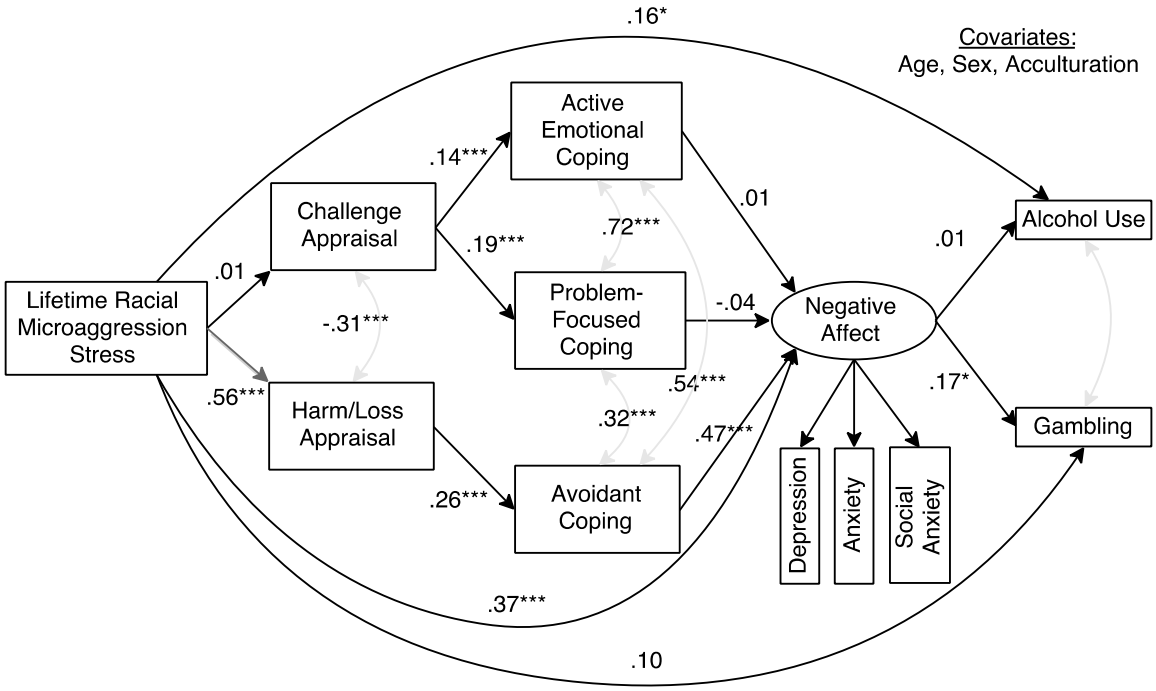



Figure 3.15 Integrated Stress Model illustrating the effect of lifetime RMA stress on alcohol use and gambling through appraisal, coping, and negative affect. Standardized coefficients are shown. Age, sex, and acculturation levels were entered as covariates.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Based on multiple fit indices, the overall fit of the proposed model to the data was fair to good, again providing substantial improvement over the measurement model, $\chi^2(42) = 89.70$ ($p < .001$), *RMSEA* = .065 (95% *CI*: .046-.084), *NNFI* = .88, *SRMR* = .041, *CFI* = .95. Consistent with predictions, indirect effects of lifetime RMA stress on negative affect ($B = .013$, $SE = .004$, $p < .001$) and gambling ($B = .027$, $SE = .014$, $p = .045$) were significant. However, the indirect effect on alcohol use ($B = .006$, $SE = .049$, $p = .90$) was not significant. Total, direct, and indirect estimates for the model are shown in Appendix D. Specific paths in the model that reached significance were:

1. RMA stress → Alcohol use ($p = .04$)
2. RMA stress → Negative affect → Gambling ($p = .045$)
3. RMA stress → Harm/loss appraisal → Avoidant coping → Negative affect ($p < .001$)
4. RMA stress → Negative affect ($p < .001$)

Additionally, a trend ($p$ = .067) was also observed for the following path:

RMA stress → Harm/loss appraisal → Avoidant coping → Negative affect → Gambling

Although an indirect effect of lifetime RMA stress on gambling did not previously emerge in the Transactional Model, an indirect effect was observed in the Integrated Model through negative affect. This suggests that negative affect may play an important mediational role in the relationship between lifetime RMA stress and gambling.

The adequacy of fit to the data for the three theoretical models was compared (Table 3.13). Given that the theoretical models tested were non-nested (i.e., structurally different), it was not possible to use a $\chi^2$ difference test to compare model fit through statistical means. Further, because the models utilized different *sets* of the observed variables, it was not possible to examine other indices such as the Akaike Information Criterion. Therefore, comparison between models was based on model fit criteria and theoretical justification (Kline, 1998; Schermelleh-Engel, Moosbrugger, and Muller, 2003). Selection of the "best fitting" model may be more dependent on theoretical parameters; some models may fit the data better depending on the specific outcomes of interest.

Table 3.13. Goodness of Model Fit for Theoretical Models and the Measurement Model

| Model | $\chi^2$ | *df* | *CFI* | *NNFI* | *RMSEA* | *SRMS* |
|---|---|---|---|---|---|---|
| Stress-Coping Model | 31.84* | 14 | .95 | .87 | .069 (.037-.101) | .032 |
| Transactional Model of Stress | 68.21 | 36 | .97 | .91 | .058 (.036-.079) | .035 |
| Integrated Stress Model | 89.30* | 42 | .95 | .88 | .065 (.046-.084) | .041 |
| Measurement Model | 1003.712 | 95 | | | | |

*Note. CFI* = comparative fit index; *NNFI* = Bentler-Bonnett non-normed fit index (also known as Tucker-Lewis Index); *RMSEA* = root-mean-square error of approximation; *SRMS* = Standardized Root Mean Square Residual.
*$p$ < .05.

It appears that the Stress-Coping Model or Integrated Stress Model may better explain the process by which lifetime RMA stress contributes to gambling (with a focus on the mediational role of negative affect); alternatively the Transactional Model of Stress may better explain the process by which lifetime RMA stress contributes to negative affect and alcohol use (with a focus on the mediational roles of cognitive appraisal and coping).

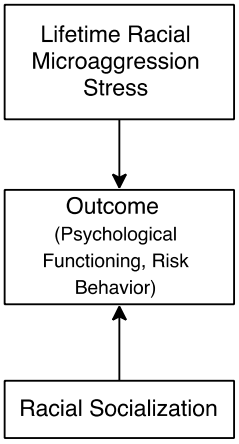
## 3.5 From Racial Microaggression Stress to Health: The Role of Racial Socialization

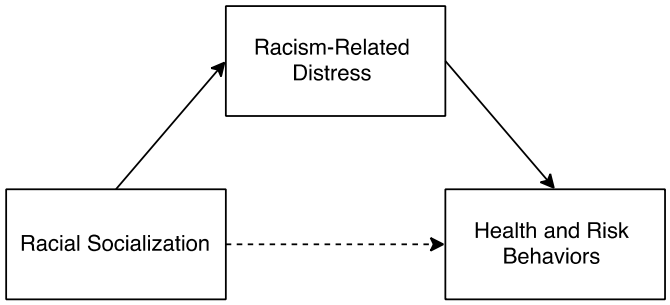
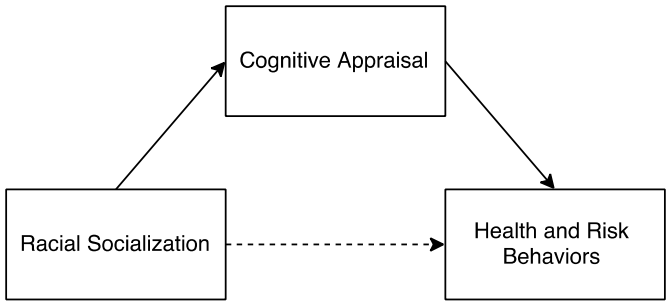
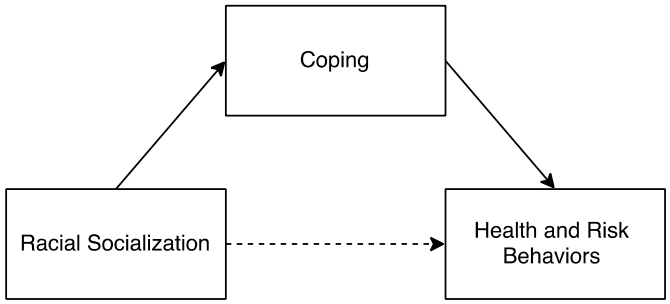
### 3.5.1 *Objective*

| | |
|---|---|
| Aim 4 | Examine models of racial socialization |
| Hypotheses | 1. Asian Americans report peer- and family-based racial socialization<br>2. Specific types of messages are associated with outcomes<br>3. Racial socialization is a compensatory factor **(Compensatory Model)**<br>4. Racial socialization improves outcomes by directly decreasing lifetime RMA stress **(Stress Reduction Model)**<br>5. Cognitive appraisal mediates the effects of racial socialization on outcomes **(Cognitive Model)**<br>6. Coping mediates the effects of racial socialization on outcomes **(Coping Model)** |

The previous section examined theoretical models of the associations of lifetime RMA stress with psychological functioning and risk behavior through the use of mediational analyses. Findings from §3.4 suggested that cognitive appraisal, coping, and negative affect may each be involved in how the accumulation of this type of stress influences health and well-being. The current section examined the role of racial socialization in this process. The models tested were: Compensatory Model, Stress Reduction Model, Cognitive Model, and Coping Model. For each model, specific hypotheses guided the analyses (Table 3.14). Again, true causal conclusions were not possible given the nature of the data, but preliminary directional conclusions were drawn.

Table 3.14. Operationalization and Analytic Diagrams of Racial Socialization Models

| Hypothesis | Model Diagram(s) and Analysis |
|---|---|
| **Compensatory Model**<br>Racial socialization will be negatively associated with outcomes after controlling for the effect of lifetime RMA stress |  <br>Multiple Regression |

| Hypothesis | Model Diagram(s) and Analysis |
|---|---|
| **Stress Reduction Model**<br>The effect of racial socialization on psychological functioning and risk behavior is mediated by lifetime RMA stress |  <br>Multiple Mediation Model with Bootstrapping (Multiple Independent Variables) |
| **Cognitive Model**<br>The effect of racial socialization on psychological functioning and risk behavior is mediated by cognitive appraisal of racial microaggressions |  <br>Multiple Mediation Model with Bootstrapping (Multiple Independent Variables) |
| **Coping Model**<br>The effect of racial socialization on psychological functioning and risk behavior is mediated by strategies used to cope with racial microaggressions |  <br>Multiple Mediation Model with Bootstrapping (Multiple Independent Variables) |

### 3.5.2 *Descriptives*

| **Hypothesis 1:** | Asian Americans report family- and peer-based racial socialization |
|---|---|

Respondents reported a wide range of racial socialization experiences in the family context. In terms of lifetime prevalence of these experiences, 68% ($n$ = 186) of participants reported messages of cultural socialization, 84% ($n$ = 230) reported preparation for bias, 67% ($n$ = 184) reported messages reinforcing the model minority stereotype, and 54% ($n$ = 146) reported messages of racial mistrust. Participants also reported racial socialization among peers; 64% ($n$ =

173) reported messages of cultural socialization in their lifetimes, 91% ($n$ = 246) reported preparation for bias, 79% ($n$ = 214) reported messages reinforcing the model minority stereotype, and 41% ($n$ = 110) reported messages of racial mistrust.

Racial socialization experiences varied across demographics within the sample, specifically by participant sex, generational status, and acculturation levels. Female participants ($n$ = 182, $M$ = 1.51, $SD$ = 1.54) reported more family-based messages of racial mistrust than male participants ($n$ = 91, $M$ = 1.01, $SD$ = 1.35; $t(271) = 2.63$, $p$ = .009). First-generation participants ($n$ = 81, $M$ = 3.86, $SD$ = 2.25) were more likely than second- or later-generation participants ($n$ = 190, $M$ = 2.91, $SD$ = 2.26) to report family preparation for racial bias ($t(269) = 3.19$, $p$ = .002). Acculturation to culture of origin was positively associated with socialization experiences with family: preparation for bias ($r$ = .29, $p$ < .001), reinforcement of model minority stereotype (family: $r$ = .14, $p$ < .02), and cultural socialization ($r$ = .24, $p$ < .001); and with peers: reinforcement of model minority stereotype ($r$ = .17, $p$ = .006), and cultural socialization ($r$ = .21, $p$ < .001). However, acculturation to Western majority culture was not associated with any type of racial socialization experiences. Descriptives of study variables, including means, standard deviations, and correlations, are provided in Appendix E.

### 3.5.3 *Compensatory Model*

| | |
|---|---|
| **Hypothesis 2:** | Racial socialization will be negatively associated with outcomes after controlling for the effect of lifetime RMA stress **(Compensatory Model)** |
| **Hypothesis 3:** | Spectific types of racial socialization messages are associated with outcomes |

*Family racial socialization.* Simultaneous multiple regressions were conducted in order to examine whether family-based racial socialization acted as a compensatory factor on psychological functioning and engagement in risk behaviors. In each analysis, one of the outcome variables was regressed on participant age, sex, lifetime RMA stress, and family racial socialization subscale scores. As expected, results from these analyses demonstrated that lifetime RMA stress was significantly associated with depression, anxiety, and social anxiety. Results also indicated that preparation for racial bias was associated with lower levels of depression and social anxiety, whereas racial mistrust was associated with higher levels of depression and social anxiety. No dimensions of racial socialization were associated with anxiety, alcohol use, or gambling (Table 3.15).

Table 3.15. Family Racial Socialization and Lifetime RMA Stress as Predictors

| Variable | Depression *B (SE)* | Anxiety *B (SE)* | Social Anxiety *B (SE)* | Alcohol Use *B (SE)* | Gambling *B (SE)* |
|---|---|---|---|---|---|
| Preparation for Bias | -.10 (.04)* | -.04 (.04) | -1.25 (.48)** | -.33 (.21) | .05 (.06) |
| Reinforcement of Stereotype | .06 (.10) | .08 (.09) | .56 (1.12) | .07 (.49) | -.12 (.14) |
| Racial Mistrust | .16 (.05)** | .04 (.05) | 1.48 (.61)* | .15 (.27) | .004 (.08) |
| Cultural Socialization | -.01 (.11) | -.01 (.09) | .19 (1.20) | .68 (.53) | .17 (.15) |
| Racial Microaggression Stress | .10 (.02)** | .10 (.02)*** | 1.16 (.21)*** | .22 (.09)* | .06 (.03)* |

*Note.* Covariates were sex, age, and acculturation levels.
*$p < .05$. **$p < .01$.

These results indicated significant effects of racial socialization on depression and social anxiety, while controlling for lifetime RMA stress. However, the nature (valence) of the effect depended on the specific type of socialization messages conveyed by the family; whereas preparation for racial bias appeared to compensate for lifetime RMA stress, racial mistrust exacerbated risk for depression and social anxiety.

*Peer racial socialization.* Simultaneous multiple regressions were conducted in order to examine if peer-based racial socialization experiences acted as compensatory factors on outcomes. Unlike family-based racial socialization, no peer-based factors were significantly associated with any of the outcomes measured in the model (Table 3.16).

Table 3.16. Peer Racial Socialization and Lifetime RMA Stress as Predictors

| Variable | Depression *B (SE)* | Anxiety *B (SE)* | Social Anxiety *B (SE)* | Alcohol Use *B (SE)* | Gambling *B (SE)* |
|---|---|---|---|---|---|
| Preparation for Bias | -.06 (.05) | -.01 (.04) | .16 (.54) | .33 (.24) | -.09 (.07) |
| Reinforcement of Stereotype | .02 (.12) | -.21 (.11) | -2.06 (1.40) | -1.14 (.61) | .09 (.18) |
| Racial Mistrust | .04 (.06) | .03 (.05) | .36 (.67) | -.02 (.29) | .08 (.08) |
| Cultural Socialization | .08 (.11) | .10 (.09) | -1.48 (1.22) | .45 (.53) | .09 (.15) |
| Racial Microaggression Stress | .11 (.02)** | .11 (.02)** | 1.21 (.22)** | .20 (.09)* | .07 (.03)** |

*Note.* Covariates were sex, age, and acculturation levels.
*$p < .05$. **$p < .01$.

### 3.5.4 *Stress Reduction Model*

| **Hypothesis 4:** | Racial socialization improves outcomes by directly decreasing lifetime RMA stress (i.e., the effect of racial socialization on psychological functioning and risk behavior is mediated by lifetime RMA stress) **(Stress Reduction Model)** |
|---|---|

In §3.5.3, two dimensions of racial socialization in the family setting (preparation for racial bias and racial mistrust) emerged as factors that modified the negative effects of lifetime RMA stress on depression and social anxiety. The Stress Reduction model further suggests that racism-

related stress mediates the relationship between racial socialization and outcomes, such that racial socialization protects against negative outcomes by directly decreasing lifetime RMA stress. Thus, the current section tested the mediational role of lifetime RMA stress in the relationships of racial socialization with depression and social anxiety. Anxiety, alcohol engagement, and gambling were not examined by this model as results from the previous section indicated no associations between any dimension of racial socialization and these outcomes.

To test Step 1, two multiple hierarchical regression analyses were conducted with depression and social anxiety as dependent variables; variables were entered as blocks in this order: (a) demographic control variables and (b) racial socialization variables. An examination of the change in the proportion of variance accounted for by racial socialization indicated that this construct was related significantly to depression and social anxiety; individuals who reported more exposure to family messages about racial mistrust in their lifetimes also tended to report higher levels of depression and social anxiety at the time of survey completion (Table 3.17).

Table 3.17. Racial Socialization as a Predictor

| Step and Variable | *B (SE)* | $\Delta R^2$ | Total $R^2$ |
|---|---|---|---|
| *Dependent variable: Depression* | | | |
| Step 2 | | .06** | .11*** |
| Preparation for Bias | -.06 (.04) | | |
| Reinforcement of Stereotype | .06 (.10) | | |
| Racial Mistrust | .21 (.06)*** | | |
| Cultural Socialization | .01 (.11) | | |
| *Dependent variable: Social Anxiety* | | | |
| Step 2 | | .04* | .14*** |
| Preparation for Bias | -.84 (.50) | | |
| Reinforcement of Stereotype | .60 (1.12) | | |
| Racial Mistrust | 1.98 (.63)** | | |
| Cultural Socialization | .46 (1.27) | | |

*Note.* Covariates were age, sex, and acculturation levels.
*$p < .05$. **$p < .01$. ***$p < .001$.

To test Step 2, a regression analysis was conducted with lifetime RMA stress as the dependent variable; variables were entered as blocks in this order: (a) demographic control variables and (b) racial socialization variables. The results indicated that preparation for bias ($B = .35$, $SE = .15$, $p = .018$) and racial mistrust ($B = .44$, $SE = .18$, $p = .018$) predicted lifetime RMA stress beyond what was predicted by the demographic control variables; however, reinforcement of model minority stereotype ($B = .03$, $SE = .35$, $p = .93$) and cultural socialization ($B = .23$, $SE = .37$, $p = .53$) did not.

Lastly, to test Step 3, both racial socialization and lifetime RMA stress were entered into multiple hierarchical regressions for depression and social anxiety. The variables were entered as blocks in this order: (a) demographic control variables, (b) racial socialization variables, (c) lifetime RMA stress. The indirect effects of preparation for bias (*B* = .036, *SE* = .017, 95% bias-corrected *CI* = .006-.070) and racial mistrust (*B* = .045, *SE* = .021, 95% bias-corrected *CI* = .007-.089) were significant in the depression model and the social anxiety model (preparation: *B* = .402, *SE* = .183, 95% bias-corrected *CI* = .054-.800; mistrust: *B* = .51, *SE* = .24, 95% bias-corrected *CI* = .094-1.03) (Table 3.18). Results further indicated that lifetime RMA stress partially mediated these relationships for both depression (Figure 3.16) and social anxiety (Figure 3.17) outcomes.

Table 3.18. Racial Socialization and Lifetime RMA Stress as Predictors

| Step and Variable | *B (SE)* | Bias-Corrected 95% *CI* | $\Delta R^2$ | *Total* $R^2$ |
|---|---|---|---|---|
| *Dependent variable: Depression* | | | | |
| Step 2 | | | .06** | .11*** |
| Preparation for Bias | -.06 (.04) | | | |
| Reinforcement of Stereotype | .06 (.10) | | | |
| Racial Mistrust | .21 (.06)*** | | | |
| Cultural Socialization | .01 (.11) | | | |
| Step 3 | | | .10*** | .22*** |
| Preparation for Bias | -.10 (.04)* | (-.18, -.01) | | |
| Reinforcement of Stereotype | .06 (.10) | (-.13, .26) | | |
| Racial Mistrust | .16 (.05)** | (.06, .27) | | |
| Cultural Socialization | -.01 (.11) | (-.22, .19) | | |
| RMA Stress | .10 (.02)*** | (.07, .14) | | |
| *Dependent variable: Social Anxiety* | | | | |
| Step 2 | | | .04* | .14*** |
| Preparation for Bias | -.84 (.50) | | | |
| Reinforcement of Stereotype | .60 (1.12) | | | |
| Racial Mistrust | 1.98 (.63) | | | |
| Cultural Socialization | .46 (1.27) | | | |
| Step 3 | | | .10*** | .24*** |
| Preparation for Bias | -1.25 (.48)** | (-2.19, -.30) | | |
| Reinforcement of Stereotype | .56 (1.12) | (-1.65, 2.77) | | |
| Racial Mistrust | 1.48 (.61)** | (.29, 2.67) | | |
| Cultural Socialization | .19 (1.20) | (-2.18, 2.56) | | |
| RMA Stress | 1.16 (.21)*** | (.74, 1.57) | | |

*Note.* Covariates were age, sex, and acculturation levels.
*$p < .05$. **$p < .01$. ***$p < .001$.

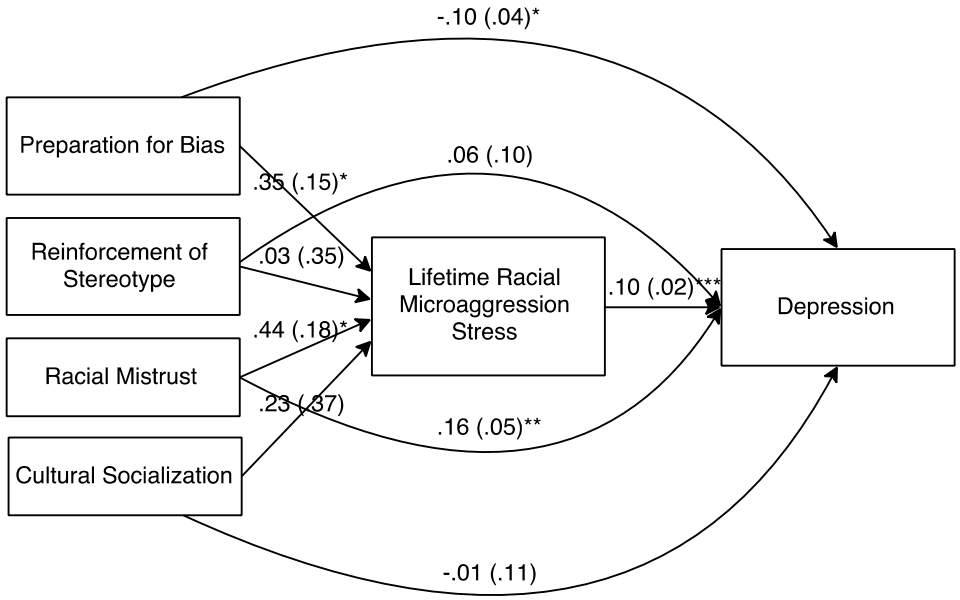



Figure 3.16 Multiple mediational model of depression through lifetime RMA stress. Unstandardized coefficients and standard errors are shown.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

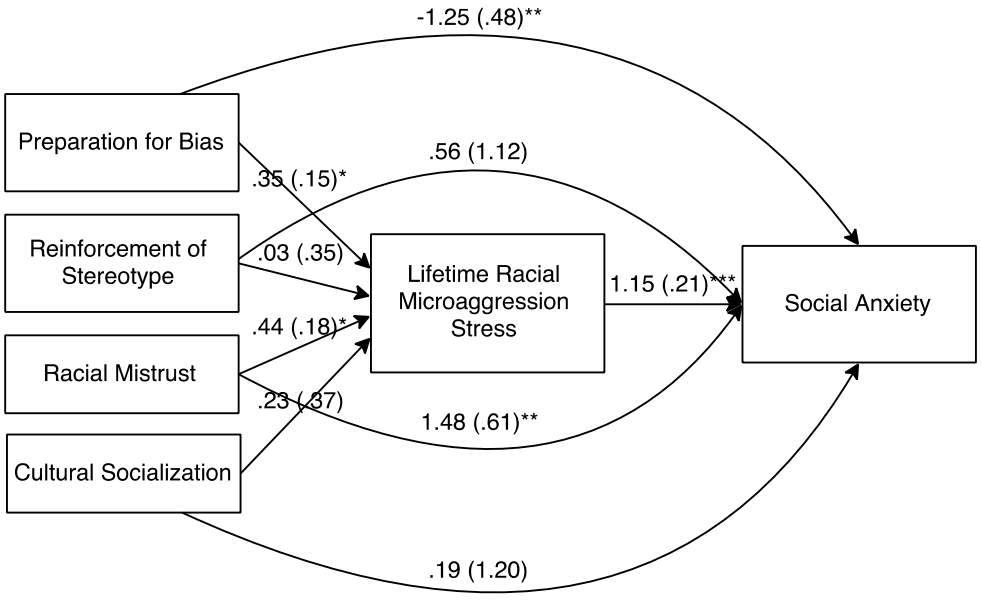



Figure 3.17 Multiple mediational model of social anxiety through lifetime RMA stress. Unstandardized coefficients and standard errors are shown.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Thus, in general, support was found for an indirect effect of racial socialization on psychological functioning such that racial socialization was associated with lifetime RMA stress

which, in turn, was associated with symptoms of depression and social anxiety—however this is in the opposite direction of what was predicted by the Stress Reduction Model. For example, these data reflect the possibility that messages of racial mistrust may lead to poorer psychological functioning partially due to higher levels of racism-related stress that result from these messages. Although it appears that lifetime RMA stress partly mediates the effect of preparation for bias on outcomes, closer inspection of the direct and indirect effects show they are opposite in sign and the direct effect is larger than the total effect. MacKinnon, Fairchild, and Fritz (2007) refer to this as inconsistent mediation where the mediator is acting as a suppressor variable; this points to the existence of another mechanism by which this dimension of racial socialization confers *protection* against depression and social anxiety.

### 3.5.5 *Cognitive Model*

| **Hypothesis 5:** | The effect of racial socialization on psychological functioning and risk behavior is mediated by cognitive appraisals of racial microaggressions **(Cognitive Model)** |
|---|---|

The Cognitive Appraisal model suggests that racial socialization influences how individuals interpret (appraise) experiences of discrimination in their lives, which in turn affects their health and well-being. Thus, the current section tested the mediational role of cognitive appraisals in the relationships of racial socialization with depression and social anxiety. Again, anxiety, alcohol engagement, and gambling were not examined by this model as earlier results in §3.5.3 indicated no associations between any dimension of racial socialization and these outcomes. Descriptives of study variables, including means, standard deviations, and correlations, are provided in Appendix F.

To test Step 1, two multiple hierarchical regression analyses were conducted with depression and social anxiety as dependent variables; variables were entered as blocks in this order: (a) demographic control variables and lifetime RMA stress, (b) racial socialization variables. Exposure to messages about racial mistrust was associated with higher levels of depression ($B$ = .16, $SE$ = .05, $b$ = .19, $p < .001$) and social anxiety ($B$ = 1.48, $SE$ = .59, $b$ = .15, $p$ =.01); preparation for racial bias was associated with lower levels of depression ($B$ = -.10, .$SE$ = .04, $b$ = -.18, $p$ = .01) and social anxiety ($B$ = -1.25, $SE$ = .47, $b$ = -.19, $p$ = .008), controlling for lifetime RMA stress.

To test Step 2, multiple hierarchical regression analyses were conducted separately with each of the four cognitive appraisal styles as dependent variables; variables were entered as blocks in this order: (a) demographic control variables and lifetime RMA stress, (b) racial socialization variables. Results indicated that controlling for demographic variables and lifetime RMA stress, racial socialization did not predict any of the four cognitive appraisal styles (Table 3.19). Thus, criteria for mediation were not met. Controlling for levels of lifetime racial microaggression stress, there was insufficient evidence that cognitive appraisal mediates the effect of racial socialization on the outcomes measured in the study.

Table 3.19. Racial Socialization as a Predictor of Cognitive Appraisal

| Step and Variable | *B (SE)* | $\Delta R^2$ | Total $R^2$ |
|---|---|---|---|
| *Dependent variable: Harm/Loss* | | | |
| Step 1[a] | | | .34** |
| Step 2 | | .01 | .35*** |
| Preparation for Bias | .02 (.02) | | |
| Reinforcement of Stereotype | .05 (.06) | | |
| Racial Mistrust | .02 (.03) | | |
| Cultural Socialization | .02 (.06) | | |
| *Dependent variable: Threat* | | | |
| Step 1[a] | | | .27*** |
| Step 2 | | .01 | .27*** |
| Preparation for Bias | .01 (.02) | | |
| Reinforcement of Stereotype | .06 (.05) | | |
| Racial Mistrust | .01 (.03) | | |
| Cultural Socialization | -.03 (.06) | | |
| *Dependent variable: Irrelevance of Experience* | | | |
| Step 1[a] | | | .10*** |
| Step 2 | | .01 | .10*** |
| Preparation for Bias | -.01 (.03) | | |
| Reinforcement of Stereotype | .04 (.06) | | |
| Racial Mistrust | .02 (.03) | | |
| Cultural Socialization | .02 (.07) | | |
| *Dependent variable: Challenge* | | | |
| Step 1[a] | | | .11*** |
| Step 2 | | .01 | .12*** |
| Preparation for Bias | .01 (.02) | | |
| Reinforcement of Stereotype | .06 (.05) | | |
| Racial Mistrust | -.001 (.03) | | |
| Cultural Socialization | .02 (.05) | | |

*Note.* Covariates were age, sex, acculturation levels, and lifetime RMA stress.

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

### 3.5.6 *Coping Model*

| **Hypothesis 6:** | The effect of racial socialization on psychological functioning and risk behavior is mediated by strategies used to cope with racial microaggressions **(Coping Model)** |
|---|---|

The Coping Model suggests that racial socialization influences coping strategies, which in turn affect mental health outcomes. Thus, the current section tested the mediational role of coping in the relationships of racial socialization with depression and social anxiety. Again, anxiety, alcohol engagement, and gambling were not examined by this model. Descriptives of study variables, including means, standard deviations, and correlations, are provided in Appendix G.

As demonstrated in §3.5.3, family-based racial socialization was significantly related to psychological functioning, controlling for demographic variables and lifetime RMA stress, satisfying Step 1. To test Step 2, multiple hierarchical regression analyses were conducted separately with each of the three coping strategies as dependent variables; variables were entered as blocks in this order: (a) demographic control variables and lifetime RMA stress; (b) racial socialization variables. The results indicated that preparation for bias was negatively associated with avoidant emotional coping ($B$ = -.369, $SE$ = .150, $p$ = .010), beyond what was explained by the demographic control variables and lifetime RMA stress (Table 3.20). Racial socialization did not significantly predict problem-focused or active emotional coping; thus neither were included in Step 3 of the mediational analyses.

Table 3.20. Racial Socialization as a Predictor of Coping

| Variable | Problem-Focused Coping *B (SE)* | Active Emotional Coping *B (SE)* | Avoidant Emotional Coping *B (SE)* |
|---|---|---|---|
| Preparation for Bias | -.17 (.17) | -.11 (.20) | -.37 (.15)** |
| Reinforcement of Stereotype | .01 (.40) | .34 (.46) | .04 (.35) |
| Racial Mistrust | -.02 (.22) | -.34 (.25) | .27 (.19) |
| Cultural Socialization | .25 (.43) | .49 (.49) | .37 (.37) |

*Note*. Covariates were sex, age, acculturation levels, and lifetime RMA stress. *$p$ < .05. **$p$ < .01.

Lastly, to test Step 3, both racial socialization and avoidant emotional coping were entered into multiple hierarchical regressions for depression and social anxiety. The variables were entered as blocks in this order: (a) demographic control variables and lifetime RMA stress, (b) racial socialization variables, (c) avoidant emotional coping. The results indicated that avoidant emotional coping was significantly related to psychological functioning (i.e., depression and

social anxiety) beyond what was predicted by racial socialization. The indirect effect through preparation for bias was significant for both depression (*B* = -.04, *SE* = .02, *p* = .02, *b* = -.07, 95% bias-corrected *CI* = .-.07 to -.01) and social anxiety (*B* = -.35, *SE* = .16, 95% bias-corrected *CI* = -.69 to -.08) models (Table 3.21). Additionally, avoidant emotional coping appeared to fully mediate the relationship between racial socialization and psychological functioning for both depression (Figure 3.18) and social anxiety (Figure 3.19) outcomes.

Table 3.21. Racial Socialization and Coping as Predictors

| | Model | |
|---|---|---|
| | Depression | Social Anxiety |
| Step and Variable | *B (SE)* | *B (SE)* |
| Step 2 | | |
| Preparation for Bias | -.10 (.04)* | -1.27 (.48)** |
| Reinforcement of Stereotype | .06 (.10) | .59 (1.13) |
| Racial Mistrust | .16 (.05)** | 1.46 (.61)* |
| Cultural Socialization | -.01 (.11) | .23 (1.21) |
| Step 3 | | |
| Preparation for Bias | -.07 (.04) | -.92 (.20) |
| Reinforcement of Stereotype | .05 (.09) | .46 (1.08) |
| Racial Mistrust | .13 (.05) | 1.17 (.59)* |
| Cultural Socialization | -.06 (.10) | -.22 (1.16) |
| Avoidant Emotional Coping | .10 (.02)*** | .94 (.20)*** |

*Note.* Covariates were age, sex, acculturation levels, and lifetime RMA stress.
*$p < .05$. **$p < .01$. ***$p < .001$.

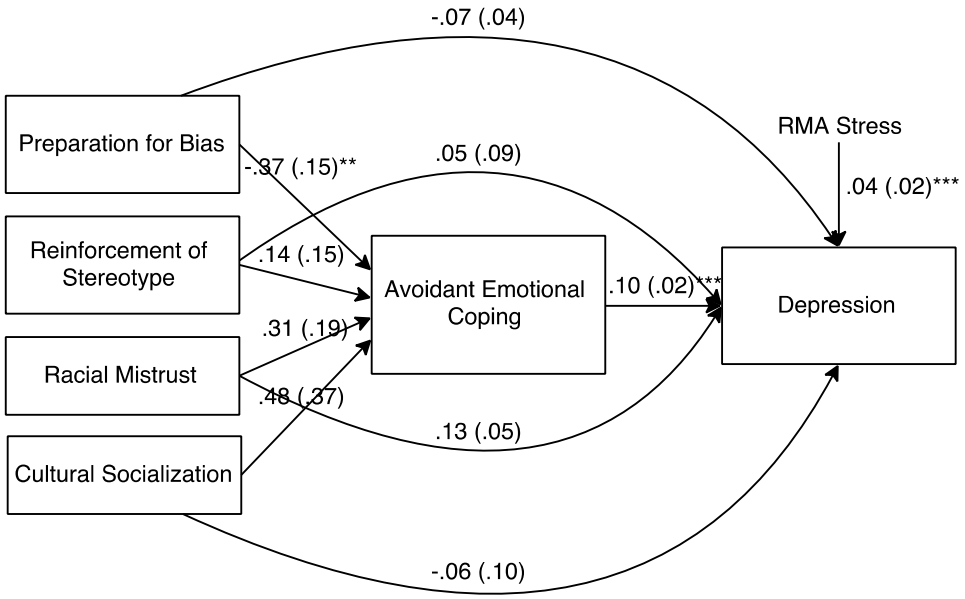



Figure 3.18 Multiple mediational model of depression through avoidant emotional coping. Unstandardized coefficients and standard errors are shown.
*$p < .05$. **$p < .01$. ***$p < .001$.

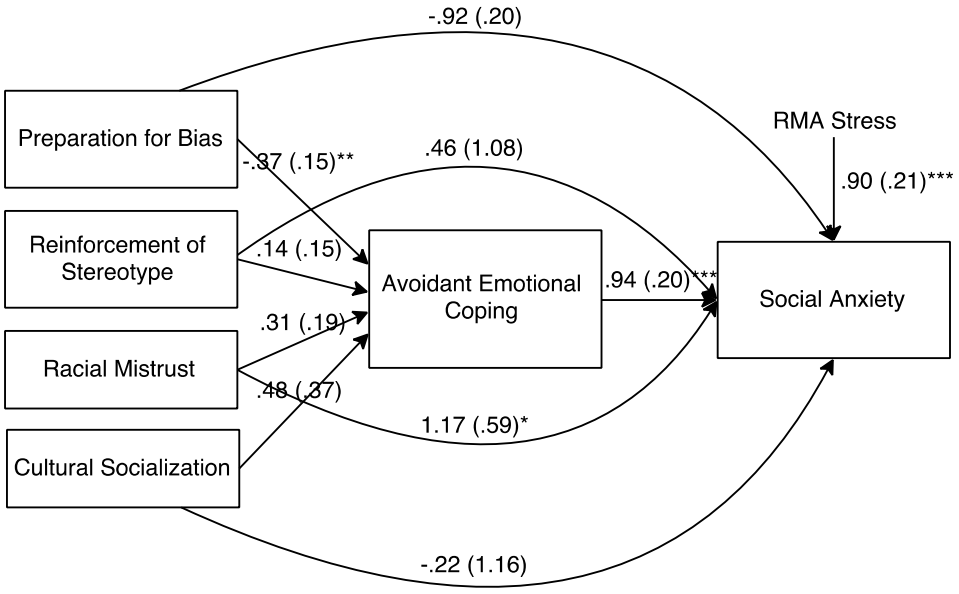



Figure 3.19 Multiple mediational model of social anxiety through avoidant emotional coping. Unstandardized coefficients and standard errors are shown.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Thus, in general, support was found for an indirect effect of racial socialization on psychological functioning such that a specific dimension of racial socialization—preparation for bias—was associated with decreased use of avoidant emotional coping strategies in response to racially-stressful events which, in turn, was associated with lower levels of depression and social anxiety. These results suggest that Asian American individuals whose families communicated messages preparing them for race-based issues and racism tended to respond less frequently to racial microaggressions with unhelpful strategies (e.g., denial, distraction, and avoidance), and in turn, potentially reducing symptoms of depression and social anxiety.

These results provided preliminary support that racial socialization buffers against negative outcomes through coping; a specific dimension of racial socialization, preparation for bias, was associated with fewer psychological symptoms partially through reduction in the use of avoidant emotional strategies for coping with RMA stress.

## 3.6 Exploratory Consideration of Race- and Culture-Relevant Factors

| | |
|---|---|
| Aim 5 | Examine how culture- and race-specific factors influence the relationship between RMA stress and outcomes (exploratory) |
| Hypotheses | 1. Acculturation moderates the relationship between RMA stress and outcomes, acting as either a risk factor or a protective factor<br>2. Ethnic/racial identity moderates the relationship between RMA stress and outcomes, acting as either a risk factor or a protective factor<br>3. Face concerns mediate the relationship between RMA stress and outcomes. |

### 3.6.1 *Objective*

In this section, the relationships between lifetime RMA stress and the following race- and culture-relevant factors were explored: acculturation (as measured by the Asian American Multidimensional Acculturation Scale), ethnic/racial identity (as measured by the Collective Self-Esteem Scale), and Face Loss Concerns (as measured by the Loss of Face Scale). Given the mixed findings in literature regarding the roles of acculturation and ethnic/racial identity as protective factors that mitigate racism-related stress, no *a priori* directional hypotheses were formulated. Descriptives of study variables, including means, standard deviations, and correlations, are provided in Appendix H.

### 3.6.2 *Acculturation as a Moderator*

| | |
|---|---|
| **Hypothesis 1:** | Acculturation moderates the relationship between lifetime RMA stress and outcomes, acting as either a risk factor or a protective factor |

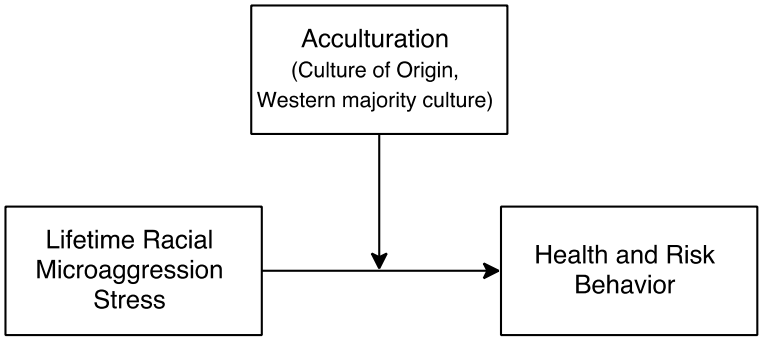



Figure 3.20 Conceptual model of acculturation as a moderator.

In order to examine if acculturation acted as a moderator on the relationships of lifetime RMA with psychological functioning and risk behavior (Figure 3.20), simultaneous multiple regressions were conducted. In each analysis, one of the outcome variables (depression, anxiety, social anxiety, alcohol involvement, and gambling behavior) was regressed on participant age, sex, lifetime RMA stress, and measures of Asian acculturation and Western acculturation.

Higher levels of Western orientation were associated with lower levels of depression, anxiety, social anxiety, and gambling behavior, controlling for lifetime RMA stress. Participants who endorsed higher levels of acculturation with their culture of origin also tended to report fewer symptoms of depression and social anxiety, and less alcohol use (Table 3.22).

Table 3.22. Acculturation and Lifetime RMA Stress as Predictors

| Variable | Depression | | Anxiety | | Social Anxiety | | Alcohol | | Gambling | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* |
| Culture of Origin | -.27 (.12) | -.13* | -.05 (.11) | -.03 | -2.75 (1.39) | -.12* | -1.69 (.60) | -.17** | .11 (.17) | .04 |
| Western Majority | -.56 (.16) | -.21** | -.54 (.14) | -.23*** | -4.04 (1.82) | -.13* | 1.26 (.78) | .10 | -.64 (.23) | -.18** |
| Lifetime RMA Stress | .10 (.02) | .36*** | .10 (.02) | .40*** | 1.13 (.21) | .34*** | .21 (.09) | .16* | .07 (.03) | .19** |

*Note.* Covariates were age and sex.
*$p < .05$. **$p < .01$. ***$p < .001$.

To test the moderational model, interaction terms were computed from the products of lifetime RMA stress with the acculturation variables and these terms were added to the previous regression equations. Consistent with Aiken and West (1991), predictor variables were centered to improve interpretability and reduce problems with multicollinearity. Significant interaction terms between acculturation to culture of origin x lifetime RMA stress and acculturation to Western culture x lifetime RMA stress were observed in the gambling model (Table 3.23).

Table 3.23. Acculturation, Lifetime RMA Stress, and Acculturation x Lifetime RMA Stress as Predictors

| Variable | Depression *B (SE)* | Anxiety *B (SE)* | Social Anxiety *B (SE)* | Alcohol Use *B (SE)* | Gambling *B (SE)* |
|---|---|---|---|---|---|
| Acculturation (Origin) | -.27 (.12)* | -.04 (.11) | -2.84 (1.39)* | -1.67 (.60)** | .14 (.17) |
| Acculturation (Western Majority) | -.56 (.16)** | -.54 (.14)*** | -4.00 (1.82)* | 1.22 (.78) | -.68 (.22)** |
| Lifetime RMA Stress | .10 (.02)** | .10 (.02)** | 1.13 (.21)*** | .22 (.09)* | .07 (.02)** |
| Origin x Stress | -.02 (.03) | -.02 (.02) | -.06 (.31) | -.01 (.13) | .10 (.04)** |
| Majority x Stress | -.02 (.04) | -.05 (.03) | .63 (.43) | -.27 (.18) | -.20 (.05)*** |

*Note.* Sex and age were covariates. Racial identity, lifetime RMA stress, and interaction variables were mean-centered.
*$p < .05$. **$p < .01$. ***$p < .001$.

Plots of the significant interactions (Figure 3.21) highlighted a moderating influence of acculturation on the association of lifetime RMA stress with gambling, suggesting that higher levels of acculturation to one's culture of origin exacerbated the negative effects of lifetime RMA stress on gambling, whereas higher levels of acculturation to Western majority culture buffered against these effects.

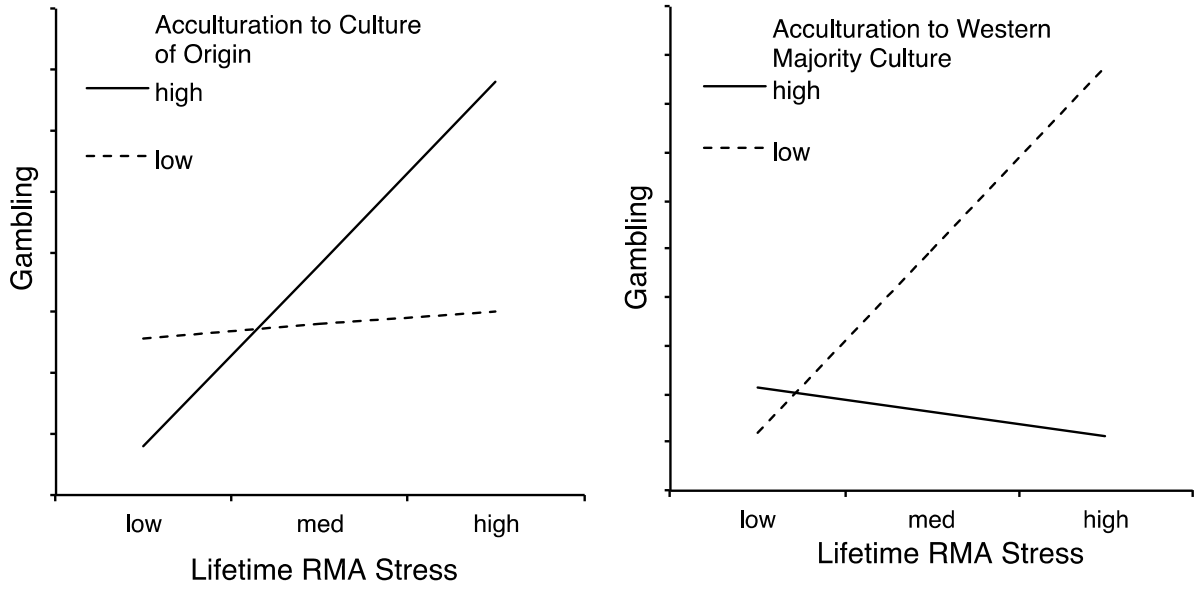



Figure 3.21 Simple slopes of lifetime RMA stress predicting gambling for 1 *SD* above and below the mean of acculturational to culture of origin (left) and to Western majority culture (right).

### 3.6.3 *Ethnic/Racial Identity as a Moderator*

| **Hypothesis 2:** | Ethnic/Racial Identity moderates the relationship between lifetime RMA stress and outcomes, acting as either a risk factor or a protective factor |
|---|---|

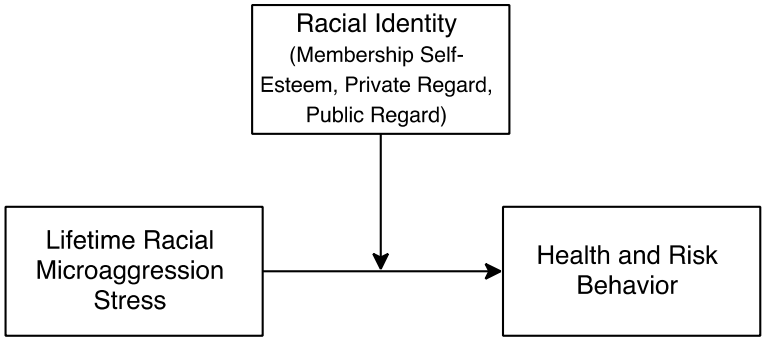



Figure 3.22 Conceptual model of ethnic/racial identity as a moderator.

In order to examine if ethnic/racial identity acted as a moderator on the relationships of lifetime RMA with psychological functioning and risk behavior (Figure 3.22), simultaneous multiple regressions were conducted. In each analysis, one of the outcome variables (depression, anxiety, social anxiety, alcohol involvement, and gambling behavior) was regressed on participant age, sex, lifetime RMA stress, and dimensions of ethnic/racial identity (membership self-esteem, private regard, and public regard). Higher levels of membership self-esteem were associated with lower levels of depression, No other significant effects were observed (Table 3.24).

Table 3.24. Racial Identity and Lifetime RMA Stress as Predictors

| Variable | Depression | | Anxiety | | Social Anxiety | | Alcohol | | Gambling | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* |
| Membership | -.18 (.09) | -.16* | -.12 (.08) | -.12 | -1.53 (1.02) | -.12 | -.64 (.44) | -.12 | .05 (.13) | .03 |
| Private Regard | -.13 (.11) | -.10 | -.07 (.09) | -.07 | .45 (1.22) | .03 | -.41 (.53) | -.07 | -.02 (.15) | -.01 |
| Public Regard | .21 (.11) | .24 | .18 (.10) | .14 | .22 (1.28) | .01 | .37 (.54) | .05 | -.02 (.15) | -.01 |
| Lifetime RMA Stress | .10 (.02) | .36*** | .10 (.02) | .41*** | 1.09 (.21) | .33** | .20 (.09) | .14* | .07 (.03) | .18** |

*Note.* Covariates included age, sex, and acculturation levels.
*$p < .05$. **$p < .01$. ***$p < .001$.

To test the moderational model, interaction terms were computed from the products of lifetime RMA stress with each dimension of ethnic/racial identity and these terms were added to the previous regression equations. Again, predictor variables were mean-centered. Significant interactions emerged between private regard x lifetime RMA stress in the depression and anxiety models and between membership self-esteem x lifetime RMA in the alcohol use model (Table 3.25).

Table 3.25. Racial Identity, Lifetime RMA Stress, and Racial Identity x Lifetime RMA Stress as Predictors

| Variable | Depression *B (SE)* | Anxiety *B (SE)* | Social Anxiety *B (SE)* | Alcohol Use *B (SE)* | Gambling *B (SE)* |
|---|---|---|---|---|---|
| Membership Self-Esteem | -.21 (.09)* | -.14 (.08) | -1.53 (1.03) | -.54 (.44) | -.05 (.28) |
| Private Regard | -.08 (.11) | -.03 (.09) | .70 (1.23) | -.48 (.52) | .50 (.34) |
| Public Regard | .21 (.11) | .19 (.10) | .03 (1.30) | .32 (.55) | -.52 (.33) |
| Lifetime RMA Stress | .11 (.02) | .11 (.02)** | 1.15 (.21) | .21 (.09)* | .08 (.12) |
| Membership x Stress | .03 (.02) | .02 (.02) | .00 (.21) | -.18 (.09)* | .01 (.03) |
| Private Regard x Stress | -.07 (.02)* | -.07 (.02)** | -.47 (.27) | .08 (.11) | -.06 (.03) |
| Public Regard x Stress | .03 (.03) | .02 (.02) | .45 (.26) | .10 (.11) | .05 (.03) |

*Note.* Covariate included age, sex, and acculturation levels. Racial identity, lifetime RMA stress, and interaction variables were mean-centered.
*$p < .05$. **$p < .01$.

Plots of these interactions in the depression and anxiety models (Figure 3.23) highlighted a moderating influence of private regard, and the plot of the significant interaction in the alcohol use model (Figure 3.24) illustrated a moderating influence of membership self-esteem:

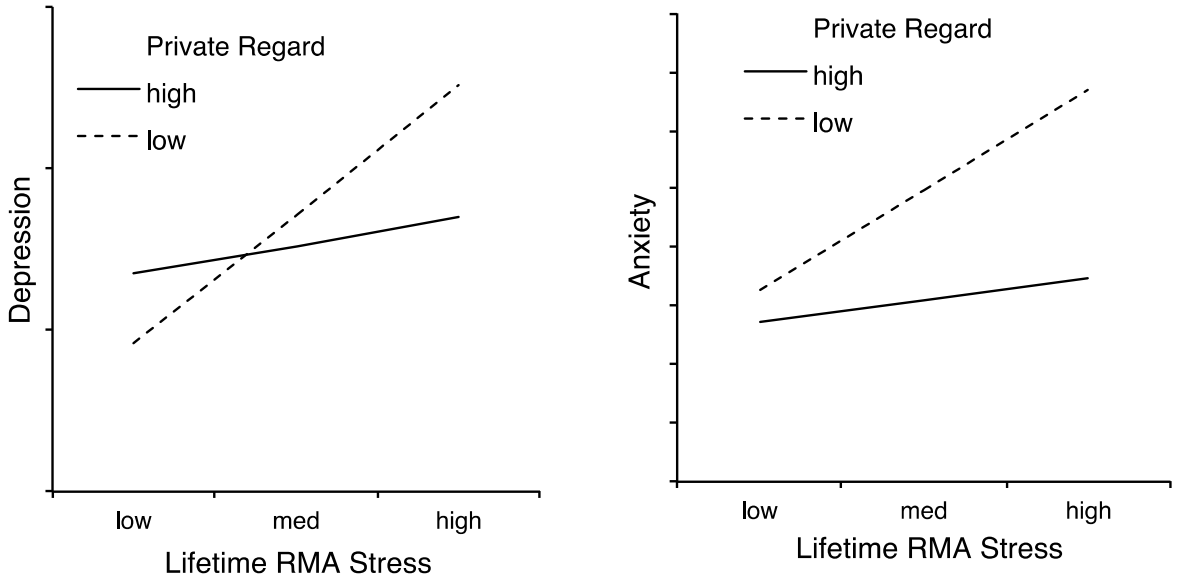



Figure 3.23 Simple slopes of lifetime RMA stress predicting depression (left) and anxiety (right) for 1 *SD* above and below the mean of private regard.

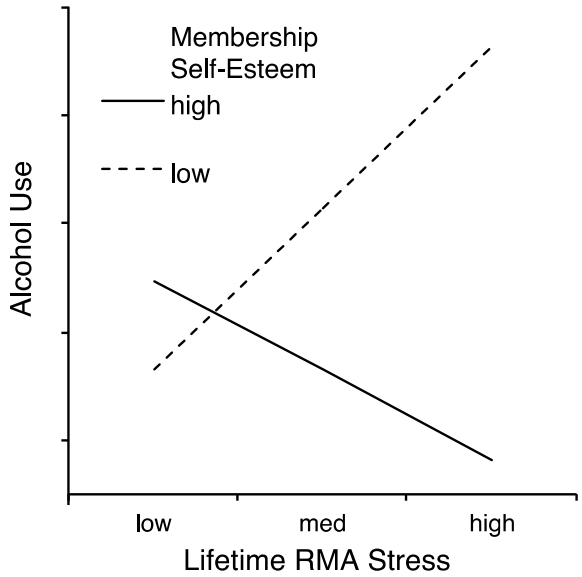



Figure 3.24 Simple slopes of lifetime RMA stress predicting alcohol use for 1 *SD* above and below the mean of membership self esteem.

These interactions suggest that the deleterious relationship between lifetime RMA stress and psychological functioning are attenuated for individuals who endorsed more positive attitudes towards their ethnic/racial group. Thus, private regard beliefs about one's ethnic/racial group acted as a protective factor. Further, the relationship between lifetime RMA stress and alcohol use was buffered by individuals' beliefs of how well they functioned (their "worthiness") as members of their racial group. Thus, membership self-esteem acted as a protective factor.

### 3.6.4 *Loss of Face as a Mediator*

| **Hypothesis 3:** | Face loss concerns mediates the relationship between lifetime RMA stress and outcomes |
|---|---|

In this section, the culture-relevant construct of concern about loss of face was examined as a mediator of race-related stress and its outcomes (Figure 3.25). The exploratory research question examined whether lifetime RMA stress indirectly impacts psychological functioning and risk behavior through traditional Asian cultural concerns about loss of face. That is, do higher levels of stress from RMAs result in increased concerns about loss of face, and in turn, difficulties with psychological functioning and engagement in risk behavior? Outcome variables of interest in mediational models were depression, general anxiety, social anxiety, alcohol use, and gambling.

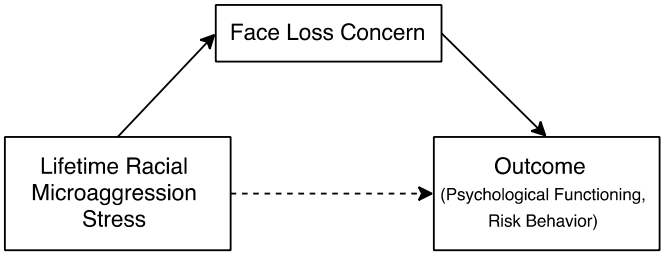



Figure 3.25 Conceptual model of mediation through face loss concern.

Earlier analyses in §3.4.2 indicated that lifetime RMA stress was significantly associated with depression, anxiety, social anxiety, alcohol use, and gambling, Thus, Step 1 for each simple mediational models was satisfied. To test Step 2, a regression analysis was conducted with face loss concern as the dependent variable; variables were entered as blocks in this order: (a) demographic control variables and (b) lifetime RMA stress. The results indicated that lifetime RMA stress was significantly associated with concerns about loss of face ($B$ = 1.33, $SE$ = .27, $b$

= .31, $p < .001$), suggesting that participants who reported higher levels of lifetime RMA stress also reported higher levels of concerns about loss of face. Thus, Steps 1 and 2 of the mediational model were satisfied, indicating a significant and direct effect of lifetime RMA stress on psychological functioning, and on face loss concern.

Lastly, to test Step 3, both lifetime RMA stress and face loss concern were entered into multiple hierarchical regressions for all outcome variables. The variables were entered as blocks in this order: (a) demographic control variables, (b) lifetime RMA stress, (c) face loss concern. The indirect effects of face loss concern were significant in the depression ($B = .02$, $SE = .004$, $b = .23$, $p = .002$) (Figure 3.26), anxiety ($B = .01$, $SE = .004$, $b = .21$, $p = .004$) (Figure 3.27), social anxiety ($B = .56$, $SE = .04$, $b = .55$, $p < .001$) (Figure 3.28), and alcohol use ($B = -.04$, $SE = .02$, $b = -.14$, $p = .02$) models (Figure 3.29). The indirect effect was not significant in the gambling model ($B = .001$, $SE = .006$, $b = .017$, $p = .52$) (Table 3.26).

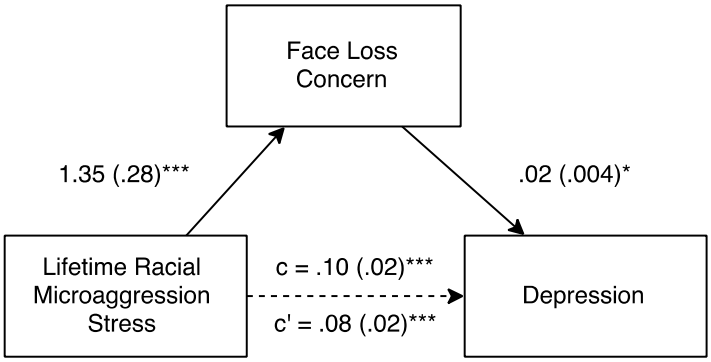



Figure 3.26 Simple mediational model of depression through face loss concern. Unstandardized coefficients and standard errors are shown.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

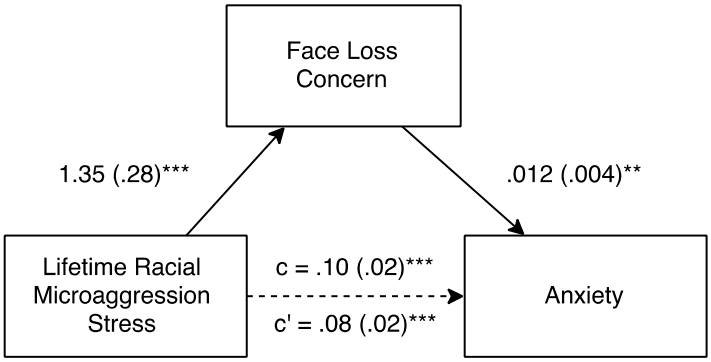



Figure 3.27 Simple mediational model of anxiety through face loss concern. Unstandardized coefficients and standard errors are shown.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

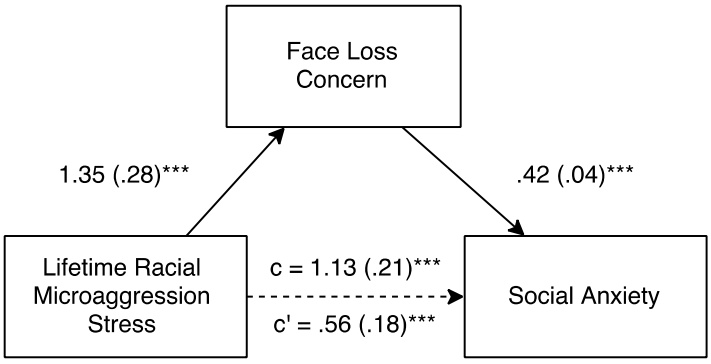



Figure 3.28 Simple mediational model of social anxiety through face loss concern. Unstandardized coefficients and standard errors are shown.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

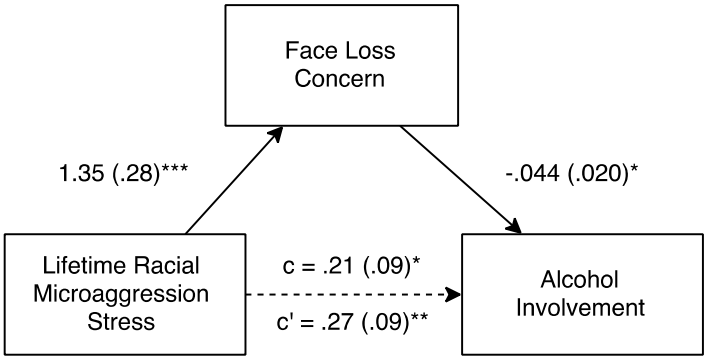



Figure 3.29 Simple mediational model of alcohol use through face loss concern. Unstandardized coefficients and standard errors are shown.
$^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

In general, support was found for an indirect effect of lifetime RMA stress on outcomes, such that individuals who experienced higher levels of lifetime RMA stress were more likely to also feel higher levels of concern about the threat of loss or loss of their social integrity, and report higher levels of depressed mood, anxiety, and social anxiety, as well as lower levels of alcohol use. These findings suggest that the culture-specific affective construct of face loss concern may partly explain the mechanism by which lifetime RMA stress contributes to negative affect in that the accumulation of experiences denigrating the social identity of the individual results in heightened concerns about their social standing and in turn, negative affective outcomes. Earlier results indicated that social anxiety mediated the relationship between lifetime RMA stress and alcohol use; in a similar vein, lower levels of alcohol use observed in this model may be due to a desire to avoid situations that may further compromise social standing or integrity.

Table 3.26. Lifetime RMA Stress and Face Loss Concern as Predictors

| Step and Variable | *B (SE)* | *b* | $\Delta R^2$ | *Total* $R^2$ |
|---|---|---|---|---|
| *Dependent variable: Depression* | | | | |
| Step 2 | | | .11*** | .17*** |
| Lifetime RMA Stress | .10 (.02) | .36*** | | |
| Step 3 | | | .04*** | .22*** |
| Lifetime RMA Stress | .08 (.02) | .29*** | | |
| Face Loss Concern | .02 (.004) | .23*** | | |
| *Dependent variable: Anxiety* | | | | |
| Step 2 | | | .14*** | .19*** |
| Lifetime RMA Stress | .10 (.02) | .40*** | | |
| Step 3 | | | .04*** | .23*** |
| Lifetime RMA Stress | .08 (.02) | .34*** | | |
| Face Loss Concern | .01 (.004) | .21** | | |
| *Dependent variable: Social Anxiety* | | | | |
| Step 2 | | | .10*** | .20*** |
| Lifetime RMA Stress | 1.12 (.21) | .30*** | | |
| Step 3 | | | .26*** | .46*** |
| Lifetime RMA Stress | .56 (.18) | .17** | | |
| Face Loss Concern | .42 (.04) | .55*** | | |
| *Dependent variable: Alcohol Involvement* | | | | |
| Step 2 | | | .03* | .07** |
| Lifetime RMA Stress | .21 (.09) | .16* | | |
| Step 3 | | | .03* | .08** |
| Lifetime RMA Stress | .27 (.09) | .20* | | |
| Face Loss Concern | -.04 (.02) | -.14* | | |
| *Dependent variable: Gambling* | | | | |
| Step 2 | | | .03** | .06** |
| Lifetime RMA Stress | .07 (.03) | .19** | | |
| Step 3 | | | .00 | .06* |
| Lifetime RMA Stress | .07 (.03) | .19** | | |
| Face Loss Concern | .001 (.006) | .017 | | |

*Note.* Covariates were age, sex, and acculturation levels.
*$p < .05$. **$p < .01$. ***$p < .001$.

# Chapter 4. DISCUSSION

## 4.1 SUMMARY OF MAJOR FINDINGS

While a growing literature points to psychological harm caused by racial microaggressions, not much is known about the nature and consequences of this form of contemporary racism against Asian Americans, despite the fact that most racism directed at this group is covert in nature (Asamen & Berry, 1987; Liang, Li, & Kim, 2004; Sue, Bucceri, Lin, Nadal, & Torino, 2007). This study sought to address specific gaps in the literature:

1. Does the stress load from racial microaggressions (RMA) accumulate over time? That is, does *cumulative (or "lifetime") RMA stress* from these experiences affect psychological functioning and risk behavior?
2. Does measuring lifetime RMA stress provide more information about the relationship between racism and health beyond average frequency of these experiences?
3. If lifetime RMA stress is positively associated with risk behavior, is this mediated by negative affect? (Stress-Coping Model)
4. Are there common appraisals and ways of coping with these experiences?
5. Do individuals think about these situations or cope differently based on how much stress they have experienced in their lives?
6. Do different types of appraisals (harm/loss versus challenge) lead to different ways of coping (avoidant emotional coping versus problem-focused coping) and impact psychological functioning and risk behavior outcome? (Transactional Model of Stress, Integrated Stress Model)
7. Do Asian American young adults report racial socialization experiences? What types of experiences are common? How do specific messages impact lifetime stress from RMAs?
8. Do these messages mitigate the impact of lifetime RMA stress on health?
9. How do other culture- and race-specific factors change the way or help explain how lifetime RMA stress impacts health?

In order to address these questions, the construct of *lifetime racial microaggression stress* was operationalized and computed in the first Aim of the study by assessing both the frequency and stressfulness of different types of everyday racial hassles (specifically RMAs) that are commonly experienced by Asian American young adults. The final score was a summation of average stress

ratings per type of event, each weighted by the frequency with which that event was experienced across an indivdual's lifetime. While this measure provides just a rough quantification of "lifetime" stress due to these experiences, findings from the second Aim of this study suggested that the computed score demonstrated significant associations across a wide range of health outcomes among Asian American college students surveyed. This suggests the utility of quantifying and studying recurrent types of stressors in this manner.

Students who reported higher levels of lifetime RMA stress also reported higher levels of depression, anxiety, general stress, and social anxiety; increased alcohol use and gambling behavior; and decreased overall quality of life, physical health, and less satisfication with social relationships. While researchers assert that (a) the chronic nature of racial microaggressions make them an especially debilitating form of racism (Gee et al., 2007), and (b) the accumulation of these experiences contributes to the overall stress load of the individual (Harrell, 2000, p. 46), to our knowledge, these results are the first to demonstrate that cumulative stress due to RMAs provides additional information about the impact of racism above and beyond average frequency of events or experiences of overt racism. These findings also provide preliminary indication that the stress load from RMAs accumulates over time; that is, the more stress an individual experiences, the greater its deleterious effects.

Given the associations observed between lifetime RMA stress and negative outcomes, three theoretical stress models (Stress-Coping Model of Addiction, Transactional Model of Stress, and Integrated Stress Model) were tested to examine possible mechanisms underlying these associations, with a set of *a priori* assumptions about directionality. Due to observations of escalating rates of risk behavior (e.g., alcohol use and gambling) among Asian American college students, these outcomes were of particular interest. Thus, the central goal of the third Aim of the study was to identify how these experiences cause negative outcomes and three possible mediators were examined: negative affect, cognitive appraisal, and coping. Importantly, it was not possible to determine exact causal relationships based on the cross-sectional data collected, but some tentative conclusions were drawn in the absence of longitudinal analyses. In general, some support was found for the Stress-Coping Model. This model suggests that individuals engage in risk behavior, such as alcohol use, to cope with life stressors. Findings from this study indicates that the impact of lifetime RMA stress on gambling was indeed influenced by negative affect. Further, total mediation was observed in the model, suggesting that negative affect was

responsible for the relationship observed between lifetime RMA stress and gambling in the sample. That is, preliminary evidence indicates that individuals who experienced higher levels of stress in their lives due to RMAs were more likely to generally feel depressed and anxious, and in turn, engage in gambling behavior. This is in agreement with a large body of work indicating links between negative affective states and problem gambling (Blaszczynski & McConaghy, 1988, 1989; Blaszczynski, McConaghy, & Frankova, 1991; Graham & Lowenfeld, 1985; Griffiths, 1995; Henry, 1996). Gambling behavior may serve different functions for different cultural groups (Abt et al., 1985). Raylu and Oei (2002) suggest that for some cultures, gambling may represent a means for individuals to relieve or reduce aversive stress through escape. Alternatively, racism-related stress may undermine an individual's sense of power and control, and gambling may represent a means to reestablish power and control. Friedland, Keinan, and Regev (1992) found that subjects in high stress conditions preferred gambling forms that increased perceptions of control. Phong Nguyen provides some perspective on gambling motives among Asian immigrant gamblers: *"They don't go to clubs and pubs because they are scared of racism … but they walk into the casino and they are treated like kings. They feel good. They know the rules of the game"* (Legge, 1992).

Beyond negative affect, stress process variables of cognitive appraisal and coping were examined as possible mediators within the framework of the Transactional Model of Stress and an Integrated Stress Model. These findings provide more information about how Asian American young adults respond to and process RMAs, and how their responses may have downstream effects on their psychological functioning and engagement in risk behavior. When asked what they think when faced with these experiences, respondents endorsed challenge appraisals most frequently, followed by irrelevance, then threat, and finally, harm/loss—suggesting that they believed these experiences were opportunities to exercise resilience and bring about social change. Active emotional coping strategies (e.g., venting, cognitive reframing, spirituality) were endorsed most commonly, followed by problem-focused coping, and finally, avoidant emotional strategies (e.g., denial, self-distraction, minimization, self-blame or avoidance). Results also suggested that how subjects appraised and coped with RMAs depended on their stress load—that is, how much they have been bothered by these experiences in the past. Those who described higher levels of lifetime stress endorsed more frequent use of harm/loss and threat appraisals, indicating that they believed that nothing could be done to modify harmful, threatening, or

challenging environmental conditions and that the harm done by these experiences was irreparable and unavoidable. Conversely, those who endorsed lower levels of stress tended to think of these experiences as irrelevant and unimportant to their functioning and sense of identity. Not unexpectedly, higher levels of stress were also associated with greater use of avoidant emotional coping strategies. This type of coping often occurs when an appraisal of harm or loss has been made and is directed primarily towards altering or regulating emotional response rather that attempting to change the situation that caused the distress. Findings from this study suggest that the more an individual's identity is denigrated, the more futile it may become to try to exercise strategies that may modify the situation (e.g., talk to/educate the perpetrator) or the environment that condones these actions (e.g., address and bring about change to a hostile campus climate) and prevent future harm. However, the reverse is also possible in that individuals who are more prone to harm/loss and threat appraisals when faced with an RMA (or who use avoidant emotional coping strategies), may be more likely to experience greater racism-related stress in their lifetimes. Again, the lack of longitudinal data precludes a definitive directional conclusion. Some indication for the directionality of this relationship comes from wording used in study measures; for example, respondents were asked to reflect on the past and report on the frequency and stressfulness of specific RMAs, whereas they were asked to identify interpretations and ways of coping they usually employ in the present.

Regardless of directionality, results from the mediational analyses highlighted the possible problematic consequences of some types of responses. Specifically, it appeared that participants who experienced higher levels of lifetime stress were more likely to appraise RMAs as harmful and use avoidant strategies to cope, resulting in higher levels of depressed mood, anxiety, social anxiety, and alcohol use. Again, this is a tentative conclusion, but one that is worthwhile to consider. Given that not much is known about how individuals respond to RMAs, the simple mediational analyses conducted in the study provided preliminary data on the relationships between constructs in these models. Further examination of the Transactional Model of Stress and the Integrated Stress Model within the analytic context of a structural equation framework indicated that the mechanism by which lifetime RMA stress influences risk behavior may depend on the specific risk behavior in question. Whereas the relationship between cumulative RMA stress and gambling may be better explained using a Stress-Coping framework, its relationship with negative affect (in particular depression and social anxiety) and alcohol use may be better

explained using a Transactional or Integrated Stress framework. That is, the pathway from stress to gambling appears to include negative affect whereas the pathway to alcohol use may more proximally depend on appraisal and coping.

Importantly, indirect effects were not observed that mitigated the effect of lifetime RMA stress on outcomes, suggesting that the aspects of cognitive appraisal and coping that were measured in the study may not have sufficiently explored the full range of cognitive and behavioral reactions to RMAs; or alternatively, that it is harder for individuals with high stress load to disengage from unhelpful appraisals and coping responses—that is, the belief that irreparable harm has already incurred and the strategy of behavioral and emotional disengagement to cope with a racial transgression may perpetuate a negatively-reinforcing affective cycle, worsening symptoms of depression and anxiety with each subsequent racial slight. Another possibility is that appraisal and coping responses that are generally thought to be helpful (i.e., challenge appraisal, problem-focused and active emotional coping) may be ineffective in decreasing the deleterious impact of RMAs. These data appear to be consistent with findings across multiple studies that suggest individuals of Asian descent appear to engage in more avoidant strategies (Kuo, 1995) in response to overt acts of racism, preferring to *"regard [a racist event] as a fact of life, avoid it or ignore it"* (Noh et al., 1999). While avoidant emotional ways of coping may indeed represent culturally-congruent responses to socially uncomfortable and uncontrollable situations among individuals of Asian descent (Noh, Beiser, Kaspar, Hou, & Rummens, 1999), these data suggest that coping with RMAs in this manner may be unhelpful and lead to worse outcomes in domains of psychological functioning and risk behavior.

Beyond the effects of RMAs and the mechanisms by which they confer risk, other constructs were explored in the fourth and fifth Aims in hopes of identifying possible factors that mitigate these effects. Racial socialization was explored as one possible race- and culture-specific construct that has been shown to promote resilience and well-being in African American youth. Given that not much is known about racial socialization in Asian American families, participants were asked about their experiences within their families and peer groups and a wide range of socialization messages were reported. While it was predicted that both types of socialization would generally be associated with improved outcomes, both context and content appeared to be important: peer-based experiences did not demonstrate any associations and the effect of family

experiences depended on the specific content of the socialization messages. Explicit or implicit messages communicating mistrust or avoidance of individuals of different racial backgrounds were generally associated with worse outcomes. Specifically, individuals who reported these types of socialization messages tended to endorse higher levels of lifetime stress from RMAs, and, in turn, higher levels of depression and social anxiety. On the other hand, data from these preliminary analyses suggested that training in awareness of racism and discrimination and how to cope with discrimination experiences may compensate for lifetime stress in Asian American youth and buffer against negative outcomes, partially through a reduction in the use of avoidant emotional strategies to cope with these stressors—data indicated these individuals tended to not disengage, self-blame or distract themselves when encountering this type of stress. However, it is unclear what strategies they employed given that no relationships emerged with other ways of coping that were assessed in this study. These findings suggest that beyond the presence of the racial socialization process, the specific context and nature of messages conveyed to children play an important role in how they subsequently respond to and process experiences of discrimination throughout their lives. In keeping with developmental literature (McConahay, 1986; McConahay, Hardee, & Batts, 1981), it appears that early socialization processes in the family form the foundation of an individual's worldview on race and racism—a foundation that remains stable throughout the lifespan. Although Asian American parents may have good intentions by communicating racial distrust in hopes of protecting their children from perceived ill-effects of developing relationships with individuals of different ethnic/racial backgrounds, these messages may actually be detrimental to their childrens' well-being. It may be that messages of racial mistrust ultimately convey the idea that racism is a way of life that must be tolerated—that it is a function of the child's identity as a person of color and that nothing can be done about these experiences. Alternatively, messages preparing children for racial bias communicate the opposite—that an individual of color may exert control over a society that marginalizes them and that racism is not a intrinsic function of their identity, but rather a defect of the society in which they live. Again, the lack of longitudinal data precludes a definitive directional conclusion. However, the reverse causal relationship does not make sense theoretically, given that respondents were asked to reflect on the past in reporting on racial socialization experiences.

Not much is known about interracial perceptions between Asian Americans and other ethnic/racial minority groups. Limited data suggest low levels of intergroup contact between Asian Americans and African Americans (Kohatsu et al., 2000); further, higher levels of conformity to White majority culture in Asian Americans appear to be associated with racial mistrust and stereotypic perceptions of African Americans (Kohatsu et al., 2000). Thus, racial socialization messages of racial mistrust may artificially create or reinforce societal boundaries that prevent meaningful contact and discourse, indirectly perpetuating racial tension and discrimination between ethnic/racial minority groups. Promotion of more positive and meaningful intergroup experiences may help improve interracial understanding and heal old wounds (e.g., the trauma of *sa-l-gu*—the Los Angeles race riots from April 29, 1992 to May 4, 1992) (Lee, 2014) as well as potentially fortify an Asian American individual from the negative effects of racism.

Acculturation levels and ethnic/racial identity were also examined as possible moderators of lifetime RMA stress; results from this study suggested that the relationship between lifetime stress and gambling was stronger for participants who were more acculturated to their Asian culture of origin, whereas higher levels of acculturation to Western majority culture buffered against these effects. Given that a multidimensional measure of acculturation was used in the study and that these moderating relationships were observed on both Asian culture of origin and Western majority culture subscales, this appears to be a robust, but not unexpected, finding. Gambling is culturally acceptable in many Asian cultures that have a history of gambling traditions (Binde, 2005) and less stringent religious prohibitions regarding gambling. Thus, gambling may represent a culturally sanctioned activity that serves multiple purposes, some of which may be relevant to explore as possible responses to racism-related stress. For example, gambling is intimately related to the perception that an individual has control over the outcome of an event. Langer (1983) suggested that problematic gambling involves an illusion of control: the *"tendency to believe that there is a greater probability of obtaining a chance-determined outcome than would be dictated by random chance"*. Studies have demonstrated positive associations between perceived control and gambling behavior (Kweitel & Allen, 1998; Ladouceur, Gaboury, Bujold, Lachance, & Tremblay, 1991; Ladouceur, Gaboury, Dumont, & Rouchette, 1998; Langer, 1983; Moore & Ohtsuka, 1999), and it features centrally in some models of pathological gambling (Frank & Smith, 1989; Griffiths, 1990; Rosenthal, 1988). In

this manner, gambling may serve as a context in which an individual, under conditions of unavoidable and unchangeable racial threat and stress, seeks to assert a measure of perceived control. Unfortunately, this illusion of control can lead to problematic consequences (Goodie, 2005). Some approaches to the treatment of pathological and problematic gambling center on instructing gamblers about the illusion of control (Sylvain, Ladouceur, & Boisvert, 1997; Viets & Miller, 1997; Ladouceur, Sylvain, Letarte, Giroux, & Jacques, 1998). Alternatively, some data indicate that Chinese immigrants in Australia gamble in order to appear important to others and to feel positive affect, suggesting that gambling may serve a role to improve mood as well as possibly elevate social status lost due to racial prejudice (Oei & Raylu, 2010).

While extant literature presents inconsistent findings about the role of ethnic identity in moderating the effects of perceived discrimination, results from this study suggest that private regard (the extent to which individuals feel positively or negatively towards Asian Americans as a whole and their membership in that group), a dimension of ethnic/racial identity, is a protective factor against the negative effects of lifetime RMA stress on depression and anxiety. This is consistent with findings from two studies with Asian American samples (Mossakowski, 2003; Yip et al., 2008), and in contrast with other work that demonstrated that higher levels of ethnic identity exacerbated the effects of overt discrimination on negative affect (R.M. Lee, 2005; Yoo & Lee, 2005, 2008). Additionally, membership self-esteem (a measure of how well an individual believes they function as a member of their group), another dimension of ehnic/racial identity, emerged as a protective factor against alcohol use. To our knowledge, this is the first study to examine the moderational role of ethnic/racial identity in the relationship between lifetime RMA stress and negative outcomes, particularly alcohol use.

Although a directional relationship cannot be determined, the robust associations between lifetime RMA stress and symptoms of social anxiety suggest a steep social cost of racial microaggression stress. Findings from this study also suggest that concerns about loss of face may mediate the relationship between lifetime RMA stress and negative outcomes, specifically depression, anxiety, social anxiety, and alcohol use. Face loss concern is best conceptualized as an affective state using Western affective constructs of fear, worry, and shame; it is elicited in response to situations that threaten or harm one's social integrity or standing. Again, a directional relationship cannot be drawn with certainty, however these results suggest that the cumulative denigration of one's identity through RMAs leads to heightened feelings of loss of face, which in

turn, leads to negative outcomes in certain domains (depression, anxiety, social anxiety), but also decreased alcohol use. This makes sense conceptually, given the social nature and context of RMAs: the denigration of one's social identity results in concerns about their social integrity. These results suggest that it is through these concerns that individuals feel depressed and anxious. Interestingly, one of the simple mediational models indicated that social anxiety mitigated the effects of lifetime RMA stress on alcohol use. Upon reflection, this is not surprising given that individuals with high levels of social anxiety may generally be less likely to engage in social drinking. High levels of stress from experiences of racism may result in increased fear of social evaluation and avoidance of social situations, reducing opportunities for social drinking in the college setting.

## 4.2 Clinical Implications

The National Registry of Evidence-based Programs and Practices (Substance Abuse and Mental Health Services Administration, 2014) provides information about mental health and substance abuse prevention and treatment programs that have demonstrated efficacy or effectiveness in clinical and community settings. Of the 243 mental health programs, 66 promotion programs and 34 treatment programs have been evaluated for use with samples including Asian Americans. Of the 184 substance use programs, 52 prevention programs and 19 treatment programs have been evaluated for use with samples including Asian Americans. However, no program has been evaluated in studies using predominantly Asian samples. Despite increasing rates of problem drinking, it appears that Asian American young adults are underrepresented and underserved in prevention and intervention efforts. Designing programs that specifically encompass the unique cultural, social, environmental, and individual factors that influence substance use in this group (as opposed to administering a protocol to samples that include Asian American clients) may help decrease barriers to treatment (Resnicow, Braithwaite, Ahluwalia, & Butler, 2000). This is especially important given findings that Asian Americans report the lowest rates of psychological treatment utilization and compliance compared to other ethnic groups (Kim, Atkinson, & Umemoto, 2001; Sakai, Ho, Shore, Risk, & Price, 2005). Thus, culturally sensitive and appropriate interventions are greatly needed.

The purpose of this study was to examine the effects of racial microaggressions against Asian Americans, a construct that possesses the potential to increase our understanding of the day-to-

day and clinical experiences of individuals in this population. These findings provide preliminary evidence that the accumulation of stress caused by racial hassles may lead to difficulties in psychological functioning and engagement in risk behaviors, warranting consideration when developing case conceptualizations and interventions for our Asian American clients. Further, these results may be incorporated into culturally-appropriate and sensitive prevention and intervention programs targeting mood or risk behaviors in this group. Some examples include teaching alternative and more effective appraisals and coping skills (fostering an "empowering and validating self"), with the awareness that these strategies may be difficult to employ in stressful social situations due to cultural barriers. Problem-solving these barriers with face-valid, concrete methods, e.g., "pros and cons", to illustrate the costs and benefits of using more active strategies may be helpful. With Asian American clients who present with higher levels of acculturation to their Asian culture of origin, it may be important to assess for undisclosed gambling problems. To these clients, gambling may function as a way to improve affect or reassert control in the context of uncontrollable racial stressors; it is important to evaluate its effectiveness in achieving that function and explore alternative strategies. Given that measures of social belonging (acculturation and ethnic identity) emerged as protective factors, activities that promote in-group and inter-group belonging may also help to bolster a client's social identity against racial stressors directly as well as indirectly though reducing concerns about their social standing. These findings also suggest that it is beneficial to have discussions about race and racism in the family context with vigilance paid to the content of explicit and implicit messages. While these discussions may not prevent racism-related stress directly given that children will likely be more aware of racial slights as they encounter them during their lifetimes, these teachings appear to indirectly reduce the risk of negative health outcomes that result from these stressful experiences. This, of course, requires family members to reflect on and develop an awareness of their own racial biases—a process that may be uncomfortable. Healing and resilience may come, ultimately, from empowerment (countering appraisals of harm/loss and avoidant strategies with those that retrieve personal control over stressful situations), preparation (providing individuals with the awareness of what is to come), and promotion of more positive intragroup (ethnic affiliation and pride) as well as intergroup relations (the awareness that ethnic/racial minorities are "in this together").

A national study found that experiences of racial discrimination predicted lower levels of satisfaction with mental health service seeking in Asian American women (Huang, Appel, & Ai, 2011). Using the same data, Spencer and colleagues found that perceived discrimination was associated with increased use of informal community services, but not with formal mental health services (Spencer, Chen, Gee, Fabian, & Takeuchi, 2010). In a study utilizing a different population-based sample in California, ethnic/racial discrimination in health care settings was negatively associated with ratings of health care quality in Asian American patients (Sorkin, Ngo-Metzger, & De Alba, 2010). These results suggest that experiences of discrimination play an important role in both access to care and perceptions about the quality of services received. Given these data, it is important to consider the ways in which RMAs may present a barrier to mental health care and how they may manifest in the course of psychotherapy (Sue et al., 2007). In order for effective therapy to occur, a therapeutic alliance must develop between a helping professional and a client (Sue & Sue, 2003). However, studies suggest that, despite best intentions, racial discrimination manifests in the therapeutic process (Utsey, Gernat, & Hammar, 2005) and microaggressions are equally likely to occur in therapeutic transactions compared to other situations (Ridley, 2005). Given their subtle, unconscious, and unintentional nature, these everyday transgressions are likely to go unnoticed by clinicians. Because studies suggest that the most effective way of reducing prejudicial behaviors and unconscious bias is through developing awareness of these issues (Banaji & Dasgupta, 1998; Son Hing, Li, & Zanna, 2002), Sue et al. (2007) suggest that clinicians need to be cognizant of their own implicit biases and monitor them within the context of therapy.

Asian Americans are frequently portrayed as model minorities who are immune from mental health issues and discrimination. This stereotype has also been shown to influence the manner in which clinicians work with their Asian American clients (Lee, Wong, & Alvarez, 2009), and may lead to erroneous assumptions about the severity and source of clients' psychological concerns. For example, without knowing information on the prevalence of racial discrimination and mental health issues in Asian Americans, or the psychological impact of racial discrimination in this population, clinicians may assume that their Asian American clients have fewer psychological concerns or that racism has little to do with their complaints. Results from this study challenge these notions. Indeed, clinicians need to be aware of the stress load that individuals of color, including Asian Americans, carry on an everyday basis due to these

interactions, which may not be made evident through traditional clinical assessment, but important for case conceptualization regardless. Further, some Asian Americans report believing that individuals of their racial group do not encounter racism (Asamen & Berry, 1997; Delucchi & Do, 1996) or that the racism they encounter is minimal (Ruggiero & Taylor, 1997) or normal (David & Okazaki, 2006). In these cases, it may be important for clinicians to validate and attend to how RMAs affect the lives of their Asian American clients (Sue et al., 2007), even if these interactions lie outside the client's awareness.

Although an important application of this work is to inform the development of culturally appropriate and sensitive prevention and intervention techniques as well as to improve the quality of care provided to clients of color, it is important to note that these approaches are only necessary when racism is widespread and institutionalized. To put it simply: treating people of color at the individual level is an insufficient solution to a longstanding and dire problem, and no substitute for societal change. Indeed, Banks (1980) observed: *"As long as the onus of mobility and constructive change [is] exclusively linked to the characteristics of individuals, the social order (with perhaps minor modifications) could be rationalized"* (p. 284). It is our hope that the results from this study might begin to challenge the social order by highlighting the prevalence and impact of these transgressions that are so often perceived by well-intentioned perpetrators as "harmless" against a minority group so often perceived as "immune".

## 4.3 LIMITATIONS

*Use of self-report measures.* One limitation is the use of self-report measures of key dependent variables, which may be biased for a number of reasons. Because assuring the respondent of confidentiality is believed to enhance reliability and validity of self-report data (Babor, Stephens, & Marlatt., 1987; Babor, Steinberg, Anton, & Del Boca, 2000; Chermak et al., 1998; Darke, 1998), all materials emphasized the confidential nature of the data at each assessment contact with participants. However, this does not address errors due to retrospective assessment.

Furthermore, using self-report measure to operationalize racial microaggressions raises interesting questions. For example, there may be some concern regarding the accuracy of individuals' perceptions of how frequently they experienced subtle discriminations over the past year. Variability may arise based on individual differences in accuracy of recall. Additionally,

the measure that was developed and used in this research asks individuals to make assessments regarding whether their race played a role in the event (Kanner, Coyne, Schaeffer, & Lazarus, 1981), which may lead to questions regarding the veracity of the discrimination experienced. However, this precisely demonstrates the power of microaggressive acts. While the target and perpetrator may have different interpretations of the situation, as Sellers & Shelton write: *"to understand prejudice from the target's perspective, we have to be willing to allow the target to indicate what is and is not considered racial discrimination"* (2003, pg. 1090).

*College sample.* A college sample may have reduced the effects of discrimination due to self-selection of relatively resilient and high-functioning individuals and context similarity. However evidence suggests that discrimination has increased on college campuses (McCormack, 1995, 1996). Further, data from Landrine et al. (2006) indicate that college and community samples are exposed to similar discriminatory experiences. Higher rates of past-year discrimination in college settings compared to national samples suggests that educational settings may be a context in which Asian Americans are at greater risk for the ill-effects of racial discrimination. Further, young adulthood is the crucible of identity development, during which time individuals begin to also reflect on their racial identity and explore issues of race and racism.

*Heterogenous population.* Despite the heterogeneity of cultural characteristics among the "pan-ethnic" group that comprises a college sample of Asian Americans, a historical legacy of being treated as Asian/"non-White" binds them together. For example, Tuan (1998) observed that third- and fourth-generation Asian Americans are still subjected to the same negative stereotypes (e.g., nerdy, socially introverted, shy) that foreign-born immigrants often confront. Indeed, results from this study provide preliminary evidence, to the limits of statistical power imposed by the subgroup sizes, no between-group differences emerged in lifetime RMA stress, suggesting that regardless of specific Asian ethnic subgroup membership, experiences and stress caused by these events are universal across individuals based on racial membership.

*Cross-sectional design.* For feasibility issues, this study was cross-sectional in design, limiting elaboration of causality. However, we believe that this study addressed gaps in research on racial microaggressions necessary prior to conducing larger-scale longitudinal studies. Further, evidence suggests that the relationship between perceived racial discrimination and psychological distress is unidirectional in African American college students (Sellers & Shelton, 2003) and Chinese American middle school students (Benner & Kim, 2009). These findings

suggest that experiences of perceived discrimination have direct effects on mental health, supporting the use of a cross-sectional design in evaluating the negative consequences of racial discrimination.

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# APPENDICES

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Appendix A. Exploratory Factor Analysis Loadings for AARMSS Lifetime RMA Stress Scale Items

| Subscale/AARMSS item | F1 | F2 | F3 |
|---|---|---|---|
| **Microassaults (**15 items) | | | |
| Were accused of something or treated suspiciously because of your race | **.867** | .033 | .038 |
| Others reacted to you as if they were afraid or intimidated by you because of your race | **.844** | .106 | .100 |
| Were observed or followed while in public places because of your race | **.803** | .027 | .044 |
| Were disciplined unfairly because of your race | **.734** | .143 | .022 |
| Your ideas were ignored because of your race | **.688** | .000 | .219 |
| Were left out of conversations or activities because of your race | **.679** | .003 | .203 |
| Were told that Asian Americans can't be trusted | **.652** | .181 | .033 |
| Were treated as if you were stupid or you have been talked down to because of your race | **.650** | .026 | .198 |
| Other people have avoided you because of your race | **.647** | .089 | .194 |
| Were told you speak with an accent | **.644** | .105 | .009 |
| Strangers stared at you because of your race | **.583** | .220 | .114 |
| Others treated you in an overly friendly or superficial way because of your race | **.575** | .034 | .340 |
| Were treated rudely or disrespectfully because of your race | **.575** | .028 | .279 |
| Were left out of a group because of your race | **.565** | .302 | .007 |
| Were not taken seriously because of your race | **.556** | .066 | .327 |
| **Microinsults** (13 items) | | | |
| Others expected you to excel in academics because of your race | .042 | **.893** | .131 |
| Were told that "You people always do well in school" | .214 | **.783** | .138 |
| Someone said Asians are more intelligent than other racial groups | .091 | **.770** | .025 |
| Heard or were told that all Asian people look alike | .000 | **.763** | .052 |
| Others said Asian American students spend all their time studying | .250 | **.741** | .105 |
| Someone assumed you know an Asian language or tradition you are not familiar with | .024 | **.722** | .122 |
| Others expected your work to be superior because of your race | .122 | **.688** | .032 |
| Someone assumed you belonged to an ethnic group to which you do not belong | .085 | **.660** | .009 |
| Were mistaken for someone else because of your race | .306 | **.641** | .093 |
| Were asked if all your friends are Asian Americans | .193 | **.619** | .118 |
| Heard or were told that Asians eat dog meat | .018 | **.615** | .159 |
| Someone complained about how successful Asian Americans are | .064 | **.597** | .191 |
| Someone asked you if you know his or her Asian friend or classmate | .218 | **.561** | .096 |
| **Microinvalidations** (11 items) | | | |
| Heard or were told that Asian Americans do not experience racism | .007 | .126 | **.759** |
| Were told you misinterpreted a comment to be racist | .136 | .037 | **.736** |
| Heard that Asian men are not very masculine | .111 | .109 | **.697** |
| Were told you are overly sensitive to comments about your race | .021 | .168 | **.690** |
| Noticed that US history books offer no or little information of the contributions of Asian Americans | .049 | .127 | **.684** |
| Learned that many non-Asian Americans are unaware of the oppression and racial prejudice encountered by Asian Americans | .001 | .218 | **.654** |
| Were told that Asian traditions are wrong and the American way is the right way | .232 | .085 | **.612** |
| Heard others say that Asian American men make undesirable boyfriends | .284 | .002 | **.585** |
| Someone said Asian Americans do not face racism in the US | .067 | .366 | **.538** |
| Heard others say that Asians are the new Whites | .236 | .167 | **.464** |
| Heard or were told that Asian women are exotic | .126 | .317 | **.454** |

Appendix B. Correlations, Means, and Standard Deviations for Lifetime RMA Stress, Experiences of Blatant Racism, Depression Symptom Scores, Anxiety Symptom Scores, Social Anxiety Symptom Scores, General Quality of Life Rating, Physical Health Rating, Alcohol Engagement, and Gambling Behavior

| Scale | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. AARMSS | -- | | | | | | | | | | | | | | |
| 2. Microassaults | .88** | -- | | | | | | | | | | | | | |
| 3. Microinsults | .93** | .69** | -- | | | | | | | | | | | | |
| 4. Microinvalid | .92** | .77** | .78** | -- | | | | | | | | | | | |
| 5. SABR-A$^2$ Blatant | .66** | .71** | .55** | .59** | -- | | | | | | | | | | |
| 6. DASS Depr | .34** | .31** | .29** | .32** | .16** | -- | | | | | | | | | |
| 7. DASS Anx | .37** | .41** | .28** | .36** | .26** | .68** | -- | | | | | | | | |
| 8. SAS-A | .38** | .35** | .32** | .35** | .14* | .49** | .48** | -- | | | | | | | |
| 9. SAS-A FNE | .41** | .37** | .36** | .38** | .18** | .46** | .42** | .93** | -- | | | | | | |
| 10. SAS-A NEW | .31** | .28** | .26** | .29** | .06 | .42** | .39** | .92** | .77** | -- | | | | | |
| 11. SAS-A GEN | .30** | .31** | .24** | .28** | .11 | .47** | .43** | .90** | .74** | .81** | -- | | | | |
| 12. QOL | -.13* | -.15** | -.12 | -.07 | -.04 | -.40** | -.30** | -.28** | -.23** | -.28** | -.27** | -- | | | |
| 13. Physical Health | -.29** | -.33** | -.24** | -.20** | -.26** | -.44** | -.42** | -.35** | -.31** | -.33** | -.32** | .71** | -- | | |
| 14. ASSIST Alc | .13* | .08 | .13* | .18** | .14* | .01 | .07 | -.07 | -.05 | -.08 | -.07 | -.14* | -.16* | -- | |
| 15. SOGS Sum | .15* | .20** | .10 | .15* | .17** | .22** | .28** | .10 | .10 | .08 | .11 | -.22** | -.23** | .26** | -- |
| *M* | 8.72 | 4.23 | 5.68 | 4.60 | 2.16 | 1.60 | 1.30 | 27.60 | 11.79 | 9.72 | 6.09 | 64.5 | 66.85 | 4.69 | .48 |
| *SD* | 4.62 | 3.10 | 3.10 | 2.71 | .83 | 1.29 | 1.12 | 14.84 | 6.94 | 5.10 | 4.07 | 20.22 | 15.96 | 6.29 | 2.67 |

*Note.* AARMSS = Asian American Racial Microaggressions Scale; Microassaults = Racial microassault stress; Microinsults = Racial microinsult stress; Microinvalid = Racial microinvalidations stress; SABR-A$^2$ = Subtle and Blatant Racism Against Asian American College Students Scale; DASS = Depression Anxiety and Stress Scale; SAS-A = Social Anxiety Scale for Adolescents; FNE = Fear of negative evaluation from peers; NEW = Social avoidance and distress specific to new situations; GE*N* = Generalized social avoidance and distress; QOL = Overall quality of life and general health; ASSIST = Alcohol, Smoking, and Substance Involvement Screening Test; SOGS = South Oaks Gambling Scale.

*$p < .05$. **$p < .001$.

Appendix C. Correlations, Means, and Standard Deviations for Lifetime RMA Stress, Racial Socialization, Depression Symptom Scores, Anxiety Symptom Scores, Social Anxiety Symptom Scores, Alcohol Engagement, and Gambling Behavior

| Scale | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Microaggression stress | -- | | | | | | | | | | | | | |
| 2. Preparation for bias-f | .24*** | -- | | | | | | | | | | | | |
| 3. Model reinforcement-f | .13* | .43*** | --. | | | | | | | | | | | |
| 4. Cultural socialization-f | .15** | .44*** | .23*** | -- | | | | | | | | | | |
| 5. Racial mistrust-f | .21*** | .27*** | .22*** | .05 | -- | | | | | | | | | |
| 6. Preparation for bias-p | .31*** | .39*** | .28*** | .17** | .25*** | -- | | | | | | | | |
| 7. Model reinforcement-p | .27*** | .33*** | .35*** | .17** | .21** | .62*** | -- | | | | | | | |
| 8. Cultural socialization-p | .18** | .26*** | .22*** | .35*** | .13* | .44*** | .38*** | -- | | | | | | |
| 9. Racial Mistrust-p | .21*** | .26*** | .19** | .10 | .29*** | .52*** | .41*** | .42*** | -- | | | | | |
| 10. Depression | .34*** | -.10 | .01 | -.08 | .23*** | .01 | .05 | .06 | .11 | -- | | | | |
| 11. Anxiety | .37*** | -.01 | .04 | -.02 | .15* | .04 | .02 | .09 | .12 | .73*** | -- | | | |
| 12. Social Anxiety | .38*** | -.06 | .04 | -.02 | .21** | .08 | .01 | -.03 | .06 | .49*** | .45*** | -- | | |
| 13. Alcohol Use | .13* | -.08 | -.02 | .01 | .03 | .10 | -.05 | .04 | .04 | .01 | .07 | -.07 | -- | |
| 14. Gambling | .15** | .09 | .004 | .08 | .07 | .02 | .08 | .07 | .10 | .22** | .28*** | .10 | .26*** | -- |
| *M* | 8.71 | 3.19 | 1.07 | 1.03 | 1.34 | 4.35 | 1.30 | .97 | 1.16 | 1.60 | 1.30 | 27.6 | 4.69 | .43 |
| *SD* | 4.62 | 2.29 | .85 | .82 | 1.50 | 2.21 | .79 | .83 | 1.59 | .29 | 1.12 | 14.84 | 6.29 | 1.73 |

*Note.* "-f" and "-p" denotes family and peer subscores of the Racial Socialization measure, respectively.
*$p < .05$. **$p < .01$. ***$p < .001$.

Appendix D. Effects Decomposition for Transactional Model of Stress

| | Causal Vars | Endogenous Variables | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Challenge | | Harm/Loss | | Problem | | Active | | Avoidant | | Alcohol | | Gambling | | Affect | |
| | | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* |
| RMA | Direct | .00 (.01) | .03 | .10 (.01) | .56*** | --- | --- | --- | --- | --- | --- | .16 (.09) | .12 | .07 (.03) | .18** | .07 (.01) | .37*** |
| | Indirect | --- | --- | | --- | --- | --- | --- | --- | --- | --- | .03 (.02) | .03* | .00 (.00) | .003 | .01 (.00) | .07*** |
| | Total | .00 (.01) | .03 | .10 (.01) | .56*** | --- | --- | --- | --- | --- | --- | .20 (.09) | .15* | .07 (.03) | .19** | .09 (.01) | .44*** |
| Chal | Direct | --- | --- | --- | --- | 1.55 (.48) | .19** | 1.28 (.51) | .14** | --- | --- | --- | --- | --- | --- | --- | --- |
| | Indirect | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | .10 (.14) | .01 | -.08 (.04) | -.03 | -.01 (.02) | -.006 |
| | Total | --- | --- | --- | --- | 1.55 (.48) | .19** | 1.28 (.51) | .14** | --- | --- | .10 (.14) | .01 | -.08 (.04) | -.03 | -.01 (.02) | -.006 |
| Harm | Direct | --- | --- | --- | --- | --- | --- | --- | --- | 1.38 (.29) | .26*** | --- | --- | --- | --- | --- | --- |
| | Indirect | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | .34 (.16) | .05* | .01 (.04) | .006 | .13 (.03) | .12*** |
| | Total | --- | --- | --- | --- | --- | --- | --- | --- | 1.38 (.29) | .26*** | .34 (.16) | .05* | .01 (.04) | .006 | .13 (.03) | .12*** |
| Prob | Direct | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | .17 (.12) | .13 | -.06 (.03) | -.17 | -.01 (.02) | -.04 |
| | Indirect | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Total | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | .17 (.12) | .13 | -.06 (.03) | -.17 | -.01 (.02) | -.04 |
| Activ | Direct | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | -.13 (.11) | -.12 | .02 (.03) | .05 | .00 (.02) | .01 |
| | Indirect | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Total | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | -.13 (.11) | -.12 | .02 (.03) | .05 | .00 (.02) | .01 |
| Avoid | Direct | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | .25 (.10) | .18* | .01 (.03) | .02 | .09 (.02) | .46*** |
| | Indirect | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Total | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | .25 (.10) | .18* | .01 (.03) | .02 | .09 (.02) | .46*** |

*Note*. RMA = Lifetime RMA Stress; Chal = Challenge Appraisals; Harm = Harm/Loss Appraisals; Prob = Problem-Focused Coping; Activ = Active Emotional Coping; Avoid = Avoidant Emotional Coping. Covariates included age, sex, and acculturation levels. Standard Errors of unstandardized parameter estimates are in parentheses.

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

Appendix E. Effects Decomposition for Integrated Stress Model

| | Causal Vars | Endogenous Variables | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Challenge | | Harm/Loss | | Problem | | Active | | Avoidant | | Alcohol | | Gambling | | Affect | |
| | | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* | *B (SE)* | *b* |
| RMA | Direct | .00 (.01) | .03 | .10 (.01) | .56*** | --- | --- | --- | --- | --- | --- | .21 (.10) | .16* | .04 (.03) | .10 | .07 (.01) | .37*** |
| | Indirect | --- | --- | | --- | --- | --- | --- | --- | --- | --- | .01 (.05) | .01 | .03 (.01) | .07* | .01 (.004) | .07*** |
| | Total | .00 (.01) | .03 | .10 (.01) | .56*** | --- | --- | --- | --- | --- | --- | .22 (.09) | .16** | .07 (.03) | .18** | .09 (.01) | .44*** |
| Chal | Direct | --- | --- | --- | --- | 1.55 (.47) | .19** | 1.27 (.49) | .14** | --- | --- | --- | --- | --- | --- | --- | --- |
| | Indirect | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | -.00 (.01) | .00 | -.00 (.01) | -.00 | -.01 (.02) | -.01 |
| | Total | --- | --- | --- | --- | 1.55 (.47) | .19** | 1.27 (.49) | .14** | --- | --- | -.00 (.01) | .00 | -.00 (.01) | -.00 | -.01 (.02) | -.01 |
| Harm | Direct | --- | --- | --- | --- | --- | --- | --- | --- | 1.38 (.29) | .26*** | --- | --- | --- | --- | --- | --- |
| | Indirect | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | .01 (.07) | .00 | .04 (.02) | .02 | .13 (.03) | .12*** |
| | Total | --- | --- | --- | --- | --- | --- | --- | --- | 1.38 (.29) | .26*** | .01 (.07) | .00 | .04 (.02) | .02 | .13 (.03) | .12*** |
| Prob | Direct | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | -.01 (.02) | -.04 |
| | Indirect | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | -.00 (.01) | -.00 | -.00 (.01) | -.01 | --- | --- |
| | Total | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | -.00 (.01) | -.00 | -.00 (.01) | -.01 | -.01 (.02) | -.04 |
| Activ | Direct | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | .00 (.02) | .01 |
| | Indirect | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | .00 (.00) | .00 | .00 (.01) | .00 | --- | --- |
| | Total | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | .00 (.00) | .00 | .00 (.01) | .00 | .00 (.02) | .01 |
| Avoid | Direct | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | .09 (.02) | .46*** |
| | Indirect | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | .01 (.06) | .01 | .03 (.01) | .08* | --- | --- |
| | Total | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | .01 (.06) | .01 | .03 (.01) | .08* | .09 (.02) | .46*** |
| Affec | Direct | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | .08 (.57) | .01 | .32 (.16) | .17* | --- | --- |
| | Indirect | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Total | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | .08 (.57) | .01 | .32 (.16) | .17* | --- | --- |

*Note.* RMA = Lifetime RMA Stress; Chal = Challenge Appraisals; Harm = Harm/Loss Appraisals; Prob = Problem-Focused Coping; Activ = Active Emotional Coping; Avoid = Avoidant Emotional Coping; Affec = Negative Affect. Covariates included age, sex, and acculturation levels. Standard Errors of unstandardized parameter estimates are in parentheses.

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

Appendix F. Correlations, Means, and Standard Deviations for Family Racial Socialization, Cognitive Appraisal, Depression Symptom Scores, Anxiety Symptom Scores, Social Anxiety Symptom Scores, Alcohol Engagement, and Gambling Behavior

| Scale | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Preparation for bias | | -- | | | | | | | | | | | | |
| 2. Model reinforcement | | .43** | --. | | | | | | | | | | | |
| 3. Cultural socialization | | .44** | .23** | -- | | | | | | | | | | |
| 4. Racial mistrust | | .27** | .22** | .05 | -- | | | | | | | | | |
| 5. Harm/Loss | | .22** | .15* | .09 | .22** | -- | | | | | | | | |
| 6. Threat | | .18* | .15* | .03 | .18* | .83** | -- | | | | | | | |
| 7. Irrelevance | | -.07 | .001 | -.01 | -.03 | -.28** | -.27** | -- | | | | | | |
| 8. Challenge | | .15* | .12* | .15* | -.01 | -.28** | -.25** | .26** | -- | | | | | |
| 9. Depression | | -.06 | .04 | -.06 | .25** | .37** | .29** | -.14* | -.18** | -- | | | | |
| 10. Anxiety | | .03 | .08 | -.01 | .15* | .35** | .28** | -.14* | -.15** | .68** | -- | | | |
| 11. Social anxiety | | -.06 | -.02 | -.02 | .21** | .31** | .30** | -.23** | -.12 | .49** | .48** | -- | | |
| 12. Alcohol use | | -.08 | -.02 | .01 | .03 | .06 | .01 | -.04 | -.04 | .01 | .07 | -.07 | -- | |
| 13. Gambling | | .09 | .08 | .08 | .07 | .12 | .13* | .06 | -.06 | .22** | .28** | .10 | .26** | -- |
| | *M* | 3.19 | 1.07 | 1.03 | 1.34 | 1.24 | 1.38 | 1.98 | 2.73 | 1.60 | 1.30 | 27.60 | 4.69 | .43 |
| | *SD* | 2.29 | .84 | .82 | 1.50 | .82 | .71 | .75 | .61 | 1.29 | 1.12 | 14.84 | 6.29 | 1.73 |
| | *N* | 273 | 273 | 273 | 273 | 255 | 254 | 254 | 254 | 249 | 249 | 249 | 280 | 253 |

*Note.* $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Appendix G. Correlations, Means, and Standard Deviations for Family Racial Socialization, Coping Strategies, Depression Symptom Scores, Anxiety Symptom Scores, Social Anxiety Symptom Scores, Alcohol Engagement, and Gambling Behavior

| Scale | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Preparation for bias | | -- | | | | | | | | | | | |
| 2. Model reinforcement | | .43** | --. | | | | | | | | | | |
| 3. Cultural socialization | | .44** | .23** | -- | | | | | | | | | |
| 4. Racial mistrust | | .27** | .22** | .05 | -- | | | | | | | | |
| 5. Problem-focused | | .02 | .02 | .06 | .02 | -- | | | | | | | |
| 6. Active emotional | | .05 | .07 | .10 | -.04 | .74** | -- | | | | | | |
| 7. Avoidant emotional | | -.05 | .01 | .02 | .14* | .28** | .50** | -- | | | | | |
| 8. Depression | | -.06 | .04 | -.06 | .25** | .03 | .14* | .46*** | -- | | | | |
| 9. Anxiety | | .03 | .08 | -.01 | .15* | .15* | .24** | .42** | .68** | -- | | | |
| 10. Social anxiety | | -.06 | -.02 | -.02 | .21** | .01 | .15* | .40** | .49** | .49** | -- | | |
| 11. Alcohol use | | -.08 | -.02 | .01 | .03 | .09 | .07 | .19** | .03 | .01 | -.07 | -- | |
| 12. Gambling | | .09 | .08 | .08 | .07 | -.14 | -.06 | .04 | .19** | .22** | .10 | .26** | -- |
| | *M* | 3.19 | 1.07 | 1.03 | 1.34 | 10.47 | 12.47 | 8.56 | 1.60 | 1.30 | 27.6 | 4.68 | .43 |
| | *SD* | 2.29 | .84 | .82 | 1.50 | 4.91 | 5.70 | 4.43 | 1.29 | 1.12 | 14.84 | 6.29 | 1.73 |
| | *N* | 273 | 273 | 273 | 273 | 248 | 248 | 248 | 249 | 249 | 249 | 280 | 253 |

*Note.* $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Appendix H. Correlations, Means, and Standard Deviations for Acculturation Levels, Racial Identity Subscale Scores, Lifetime RMA Stress, Depression Symptom Scores, Anxiety Symptom Scores, Social Anxiety Symptom Scores, Alcohol Engagement, and Gambling Behavior

| Scale | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Acculturation-Origin | -- | | | | | | | | | | |
| 2. Acculturation-Majority | -.04 | -- | | | | | | | | | |
| 3. Membership Self Esteem | .49*** | .14* | -- | | | | | | | | |
| 4. Private Regard | .43*** | .17*** | .58*** | -- | | | | | | | |
| 5. Public Regard | .29*** | .24*** | .44*** | .58*** | -- | | | | | | |
| 6. Lifetime RMA Stress | .11 | -.01 | -.01 | -.04 | -.15* | -- | | | | | |
| 7. Depression | -.10 | -.19* | -.24*** | -.18* | -.10 | .34*** | -- | | | | |
| 8. Anxiety | .02 | -.21*** | -.16* | -.11 | -.07 | .37*** | .68*** | -- | | | |
| 9. Social Anxiety | -.09 | -.12 | -.19* | -.09 | -.12 | .38*** | .49*** | .48*** | -- | | |
| 10. Alcohol Engagement | -.14* | .09 | -.17* | -.14* | -.08 | .13* | .03 | .06 | -.07 | -- | |
| 11. Gambling | .06 | -.17*** | -.01 | -.03 | -.08 | .15* | .19* | .23*** | .10 | .26*** | -- |
| *M* | 2.44 | 2.80 | 3.69 | 4.53 | 4.16 | 8.71 | 1.60 | 1.30 | 27.60 | 4.69 | .43 |
| *SD* | .62 | .48 | 1.11 | 1.00 | .90 | 4.62 | 1.29 | 1.12 | 14.84 | 6.29 | 1.73 |

*Note.* 1 = Acculturation to culture of origin, 2 = Acculturation to majority culture.
*$p < .05$. **$p < .01$. ***$p < .001$.

# VITA

I grew up in three worlds. My father immigrated to the United States from Pakistan, my mother from South Korea, and I was their only child, an American. I grew up balancing contradictory cultural values, beliefs, and customs—all which exist within me simultaneously. The challenge to find the balance in my identity is one that shapes who I am.

During childhood, I knew my family was different from those around us. Blatantly and subtly, we were reminded we did not belong. As my mom struggled with English, strangers told her to "go back to China". My father was wrongly, but briefly, incarcerated because of the color of his skin. My parents accepted this treatment as a way of life, feeling humiliated and helpless.

Through these experiences, I became deeply committed to understanding others' worldviews and working toward balancing power dynamics between the majority and marginalized groups. I learned to seek synthesis between different perspectives, accepting what cannot be changed (we will always be a product of our histories) and committing to do better (we can build a healthy, validating society for all).