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ASIAN AMERICAN / PACIFIC ISLANDER
PSYCHOLOGICAL AND PHYSICAL HEALTH OUTCOMES
OF RACISM AND RACIAL IDENTITY

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Abstract

Asian American / Pacific Islander Psychological and Physical Health Outcomes of Racism and Racial Identity

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Previous theory and research on Asian American/Pacific Islanders’ (AAPI) racism experiences indicate that anti-AAPI racism is stressful and related to increased physical and psychological symptoms when the two types of symptoms have been investigated as separate constructs. However, cultural models of AAPIs’ health postulate that AAPIs experience distress as interrelated physical and psychological symptoms, but no studies have explored whether racism experiences are similarly related to increases in both physical and psychological symptoms. Also, few studies of AAPI health and racism have included racial identity schemas as psychological constructs that potentially interact with experiences of self-reported anti-Asian racism and health symptoms. To better understand how racism experiences, racial identity, and physical and psychological health are related, the present study examined relationships among frequent and distressing anti-AAPI institutional, cultural, and individual racism experiences, racial identity attitudes, and physical and psychological symptoms.

U.S.-born AAPIs of Chinese or Korean heritage (N = 203) completed a demographic questionnaire, the People of Color Racial Identity Attitudes Scale (Helms, 2011), the Asian American Race-Related Stress Index (Liang, Li, & Kim, 2004), the Pennebaker Inventory of Limbic Languidness (Pennebaker, 1992), and the Kessler-10 (Kessler et al., 2002).
Canonical correlation analyses were used to investigate relationships among the variables. Several patterns were identified. Three patterns were significantly, but not strongly related to being of male gender. They were: (a) frequent and distressing experiences of institutional, cultural, and individual racism experiences were related to increased physical and psychological symptoms; (b) institutional racism experiences were associated with increased levels of Dissonance (racial confusion) and Immersion (own-group idealization); and, (c) high levels of Dissonance and low levels of Internalization were related to more psychological and fewer physical symptoms. One pattern was significantly, but not strongly related to being of female gender, wherein high levels of both Dissonance and Immersion were related to increased levels of physical and psychological symptoms. Finally, one pattern was related to being of Chinese ethnicity, wherein cultural racism experiences were associated with high Conformity (i.e., White cultural orientation) and Dissonance.

Results were discussed with respect to how researchers can assess racism and racial identity-related distress more accurately by using holistic health measures. Methodological limitations of the study and implications for research and practice are also discussed.
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Chapter 1

Introduction

Despite assumptions that individuals of Asian American/Pacific Islander (AAPI) heritage do not experience racism (Sue, Bucceri, Lin, Nadal, & Torino, 2007), studies have indicated that AAPIs are subjected to negative racial stereotypes, denied access to public resources, and treated as culturally inferior in the U.S. (National Education Association, 2005). Moreover, the Federal Bureau of Investigations (FBI) reported that in 2011, 165 hate crimes were reported by people, institutions, and communities identifying as or affiliated with AAPIs (U.S. Department of Justice, 2011), despite Federal legislation that prohibits anti-Asian racist acts (Civil Rights Act of 1964, U.S. Public Law 88-352). Here, hate crimes are defined as crimes based on racial prejudice including “murder and non-negligent manslaughter; forcible rape; aggravated assault, simple assault, and intimidation; arson; and destruction, damage or vandalism of property” (Hate Crimes Statistics Act, 1990, p. 1).

Experiencing racism in its various forms has been theorized to contribute to substantial psychological and physical distress for communities of Color (Carter, 2007; Myers, Lewis, & Parker-Dominguez, 2003). Moreover, research dividing AAPI samples by ethnic group suggests that AAPIs experience distressing levels of health disorders, including heart disease, depression, post-traumatic stress, and substance dependence (Ladhani & Lee, 2009; Meyer, Dhindsa, Gabriel & Sue, 2009; Yoo, Gee, Lowthrop, & Robinson, 2010). Recent research has suggested that AAPI distress assessed at the
socioracial-group level seems to be related to experiences of anti-Asian racism (Gee et al., 2008; Yip et al., 2008). Despite such findings, little is known about the quality of anti-AAPI racism experiences and the nature of symptoms ostensibly related to those events.

Implicit in the proposition that anti-Asian racism experiences and health are related are the following concerns: (a) whether AAPIs experience racism at a personal or individual level; (b) if so, whether such experiences are internalized differently by subgroups within the larger AAPI socioracial group; and (c) whether racism experiences elicit psychological processes that instruct how AAPIs think of themselves as Asian American. Considering that various ethnic groups comprise the AAPI socioracial group, it is important to ascertain whether ethnic group differences exist within the AAPI aggregate group, and specifically, whether groups experience racism in the same manner. Moreover, since little research has focused on the experience of U.S.-born AAPIs, a group who may encounter different racial experiences from immigrant AAPI groups, it may be particularly informative to focus on U.S.-born AAPIs’ racism experiences, their psychological processing of such experiences, as well as their related health symptoms.

Research exploring experiences of anti-Asian racism has demonstrated that AAPIs experience racism with respect to being (a) treated as perpetual foreigners in the U.S. (Takaki, 1989) and (b) perceived as intellectually superior and socially inept as compared to White Americans (Lee, Wong, & Alvarez, 2009). Of the studies that have explored experiences of anti-Asian bias, many have focused on broadly defined discrimination rather than anti-Asian racism (Gee, Spencer, Chen, Yip, & Takeuchi,
Although such experiences are informative for a discussion on race-based discrimination generally, an exploration of anti-Asian racism might capture a more distinct experience shared by AAPIs separate from other communities of Color. Because of unique phenotypic and sociohistorical backgrounds, AAPI experiences of racism may differ from other communities, and it is thus possible that health responses related to such events differ as well.

Of the research that focuses on anti-Asian racism, questions have explored how institutional and cultural forms of racism affect the experiences of AAPIs as a socioracial group. Institutional racism can be defined as societal practices that restrict social mobility, access to resources, choices, and rights on account of race. Cultural racism can be defined as individual and institutional expressions of the superiority of one race over another, as applied through various cultural elements (e.g., physical features, religion, customs, communication styles, orientations to health) (Jones, 1997). Studies of institutional racism have found that AAPIs contend with housing discrimination (Turner, Ross, Bednarz, Herbig, & Lee, 2003), whereas studies of cultural racism have found that many AAPIs dislike their own appearance, perhaps because of internalized societal messages about their physical inferiority and “foreign” features (Lee & Vaught, 2003). However, no studies have empirically investigated the physical and psychological distress that likely results from these types of racism.

Contrastingly, research focusing on the outcomes of individual racism has demonstrated that individual racism experiences seem to be linked with physical and psychological distress for AAPIs. Individual racism includes person-on-person acts of
racial microaggressions that support the perpetrator’s belief that White Americans are better than other racial groups, AAPIs in this case (Jones, 1997). Racial microaggressions can be defined as brief, sometimes unintentional, interpersonal exchanges that insult people of Color, and imply inferior racial status (Sue et al., 2003).

For AAPIs as a socioracial group, individual experiences of racial bias have been predictive of various psychological symptoms, including anxiety and depression (Hwang & Goto, 2009), and a greater likelihood of meeting diagnostic criteria for mental health disorders (Gee, 2007a). Everyday experiences of anti-Asian discrimination have also been associated with physical health outcomes including high body mass index (Gee et al., 2008), physical pain, and cardiac and respiratory distress (Gee et al., 2007b).

However, previous studies suggesting that AAPI experiences of racism and psychological and physical health are related have assessed either psychological or physical symptoms separately (Gee et al., 2007b; Yip et al., 2008). Thus, no studies have yet examined whether there are both psychological and physical responses to racism for AAPIs. If so, coordinated physical and psychological responses would be aligned with how traditional Asian cultures purportedly view illness. Indeed, researchers contend that Asian cultures conceptualize health as consisting of two interrelated parts of one unified system where diagnoses consist of both psychological and physical features (Hahm, Ozonoff, Gaumond, & Sue, 2010; Lin & Cheung, 1999). Therefore, knowing whether anti-Asian racism experiences are related to both psychological and physical symptoms together would clarify the purported relationship between racism and AAPI health. Also, it would indicate whether and how AAPIs’ Asian health orientations influence their
responses to racism distress through health symptoms.

Additionally, though sometimes discounted, it is likely that because AAPI ethnic groups embody distinct cultural, phenotypic, and sociohistorical features, groups differ with respect to how they experience, internalize, and respond to acts of anti-Asian racism. Here, *ethnic group* is defined as the “national … origins of one’s oldest remembered ancestors, and the customs, traditions, and rituals (i.e., subjective culture) handed down by these ancestors” (Helms & Cook, 1999, p. 19). When considering Asian ethnic groups in terms of national origins of themselves and/or their ancestors, AAPIs originate from over 40 nations. Though the majority of these nations may share a general Asian culture, each ethnic group’s nuanced phenotype, historical experience of racism, and unique ethnic culture may contribute to how individuals are treated with respect to their sociorace, how they think psychologically about such encounters, and how they respond to racism experiences through health outcomes (Constantine, Myers, Kindaichi, & Moore, 2004; Ladhani & Lee, 2008; Liang, Nathwani, Ahmad, & Prince, 2010; Nadal, 2004). Indeed, although estimates of health and racism experiences aggregated across groups provide a necessary starting point for AAPI research, exploration of ethnic differences may suggest that the experience of racism is ethnic-group specific, and, therefore, generate more precise information with respect to racism health outcomes.

Similar to ethnic group differences, it is also possible that U.S.-born and immigrant AAPIs experience anti-Asian racism differently due to differing racial socialization. Past literature has suggested that experiences of racism and related distress may vary according to nativity status (e.g., immigrant, U.S.-born) (Kim, Brenner, Liang,
Consequently, immigrants and U.S.-born AAPIs likely differ in how they internalize racism experiences, and how these experiences are related to symptom clusters.

In particular, U.S.-born AAPIs are an increasingly important demographic for inquiries about the nature of racism experiences (Perry, 2008). Yet no studies have focused on U.S.-born AAPI experiences of anti-Asian racism and related health outcomes, despite their growing share of the AAPI population (U.S. Census Bureau, 2011). Indeed, from 2007 – 2011, the population of U.S.-born AAPIs grew by 17%. Importantly, U.S.-born AAPIs’ racial socialization within the U.S. may prescribe different perceptions of racism and related levels of distress compared to immigrants. For example, model minority and perpetual foreigner stereotypes may be perceived in U.S.-born AAPIs’ environments with differing frequency and distress as compared to AAPI-immigrant environments. Further, U.S.-born AAPIs’ racial socialization within the U.S. racial hierarchy likely fosters a different sense of what it means to be AAPI, compared to immigrant AAPIs who socialize within this hierarchy later in life. Thus, racism experiences research that focuses on U.S.-born AAPI experiences might articulate a more nuanced understanding of how this subgroup experiences and internalizes racism, a question which has been often overlooked in previous studies.

In addition to exploring AAPIs’ subjective or person-level experiences of racism as such, it is also important to identify psychological constructs that explain how AAPIs’ racism experiences affect their psychological and physical health. That is, AAPIs may internalize racist experiences and subsequently develop schemas for making sense of the
racial stimuli to which they are exposed. Racial identity theory conceptualizes schemas as processes that develop in response to internalized racism and influence various outcomes, which may include psychological as well as physical symptoms (Helms, 1990). For People of Color (POC), *racial identity* can be defined as the manner(s) by which people adapt to or cope with systems of racism as they pertain to POCs understanding of themselves, their racial group, and White Americans. Helms’s POC theory proposes four or five schemas or coping strategies, which vary in the extent to which they allow the AAPI person to externalize rather than internalize racism. Thus, for example, when a person’s predominant schema is Conformity, White people and their cultural norms would be perceived as superior to AAPI people and cultural norms. At the other extreme, Internalization, a foundation of support and kinship with one’s own racial group permits the person to transcend internalized racism. Thus, schemas differ in their levels of sophistication with respect to processing racial dynamics. Especially for U.S.-born AAPIs, racial identity schemas may vary in levels of sophistication given their varied, but longstanding histories of exposure to racism. If racial identity schemas are affected by anti-Asian racism experiences, then schemas varying in levels of sophistication may, in turn, differentially affect health symptoms.

In sum, previous literature has demonstrated that general discrimination (e.g., weight, gender, ethnic, racial) is related to either psychological or physical symptoms for AAPIs, but literature focused on Asian culture health orientations alleges that the two types of symptoms interact. It would deepen our understandings of race-related stress and cultural orientations to health if we could determine whether specific types of anti-
Asian racism experiences are related to both psychological and physical symptoms. In addition, it would be further informative to explore how racial identity is related to racism experiences and to health, as this would enrich our understanding of how AAPIs develop racial attitudes about themselves, as well as how such attitudes may relate to their race-related distress. Therefore, the purpose of the present study was to examine the intersections among experiences of anti-Asian racism, racial identity, and physical and mental health symptoms. In doing so, I compared U.S.-born Chinese American and Korean American ethnic groups. The results of the present study may help inform clinicians working with AAPIs by clarifying how specific anti-Asian events are related to health symptoms. Moreover, the results of the present study may inform counseling theories and research, by demonstrating how racial identity is related to previously experienced racism events as well as health, further informing how wellness and racial constructs should be explored through research.
Chapter 2

Review of Literature

Research has indicated that AAPIs experience racism and that their racism experiences are related to psychological and physical distress (Carter & Forsyth, 2010; Yoo, Gee, Lowthrop, & Robertson, 2010). However, studies measuring the impact of anti-Asian racism on health have focused on either psychological or physical symptoms, which may not have conveyed the true psychological and physical outcomes of AAPI race-related stress. Given that research suggests that AAPIs may experience pain or distress through combinations of physical and psychological symptoms, accounting for both symptom types may reveal a more comprehensive and accurate understanding of the relationships between race-related stress and health outcomes (Lin & Cheung, 1999). Investigation of both types of symptoms might present a more accurate picture of the health difficulties experienced by AAPIs in response to racism stress. In addition, little is known about the psychological mechanisms, such as racial identity schemas, that AAPIs might use to process racial stimuli (Helms, 1997). Racial identity schemas, defined as variations in the ways that AAPIs respond to racism, likely develop in response to anti-Asian racism experiences, and may be related to psychological and physical symptoms themselves.

Furthermore, for the most part, studies that have investigated the effects of discrimination on health symptoms of AAPIs have used samples aggregated across ethnic and/or nativity groups or they have studied single ethnic and/or nativity groups. However, by disaggregating AAPI samples into ethnic groups, and focusing on experiences of U.S.-
born AAPIs in particular, more specific analyses may attend to the nuances of the AAPI community and provide a foundation for a theoretical analysis of their health conditions.

To support investigating the perspective that the racism experiences of U.S.-born AAPIs are related to racial identity and that both racism experiences and racial identity are each related to physical and psychological health outcomes, the following literature will be reviewed in this chapter: (a) racism experiences as predictors of AAPI health; (b) Asian cultural orientations toward health; and (c) racial identity, as possibly related to anti-Asian racism experiences and distress.

**AAPI Experiences of Racism**

According to Takaki (1989), AAPIs have been targets of racism for over two centuries. *Racism* can be defined as a system where “one group enjoys privilege and retains the powerful position needed to maintain it, define it as natural, and reject others who deviate [from it]” (Jones, 1997, p. 373). In considering whether or how anti-AAPI racism affects health, it is important to examine (a) AAPI racial stereotypes; (b) group differences in AAPI racism experiences; (c) manifestations of anti-Asian racism; and (d) possible relationships between experiences of anti-Asian racism and health.

**AAPI Racial Stereotypes**

Two common AAPI stereotypes are “the perpetual foreigner” and “the model minority.” In the first case, all AAPIs, regardless of ethnicity, are thought to be recent immigrants despite multigenerational American histories (Sue et al., 2007; Takaki, 1989). The model minority stereotype assumes that all AAPIs either are immune to experiences of racial oppression, or have overcome them as demonstrated by their quantitative skills,
economic growth, lack of health distress, and academic success (Lee et al, 2009; Wong & Halgin, 2006). The model minority stereotype assumes that AAPIs lack social skills and are passive assimilators of White American values (Grossman & Liang, 2007; Kohatsu et al., 2000).

Research has suggested that each stereotype fosters either interpersonal tensions between AAPIs and other racial minority groups or personal distress (Das & Kemp, 1997; Kohatsu et al., 2000). For example, although each socioracial group of Color (e.g., African Americans, Native Americans) originally was stereotyped as passive and/or hard working, for most groups, those stereotypes have been replaced with stereotypes of aggression, laziness and intellectual inferiority. However, for most AAPI ethnic groups the ostensibly positive stereotype still holds, which potentially fosters intergroup conflict and pressure on individuals to conform to it (Hoxter & Lester, 1995; Kohatsu et al., 2000). The enduring anti-Asian stereotypes are used in person-to-person interactions as well as institutional policies, and such events and policies are suggested to relate to psychological or physical health symptoms (Gee et al., 2007b; Yip et al., 2008).

**AAPI Group Differences in Racial Stereotypes**

**Ethnic Group Differences.** Although experiences of anti-AAPI bias have been linked with distress in the past, most analyses have conceptualized and analyzed sample data without regard to salient ethnic group differences in racial socialization experiences. For example, the perpetual foreigner and model minority stereotypes have been described as universal stereotypes that apply to all AAPI ethnic groups in the U.S. (Lee et al., 2009). However, phenotypic and cultural diversity between ethnic communities may be
associated with other racial stereotypes that are ethnic-group specific. Notably, many Asian Indian and Pakistani Americans, who typically have darker skin and different eye shapes than some other groups of AAPIs (e.g., Chinese, Korean Americans), share unique stereotypes of Hindu exoticism (Sadowsky & Carey, 1987) and Muslim extremism (Liang, Nathwani, Ahmad, & Prince, 2010; Verinakis, 2007). Also, differing from model minority stereotypes, Pilipino Americans are uniquely exposed to stereotypes of aggression and sexual promiscuity potentially due to their darker skin color (Nadal, 2004; Takaki, 1989). Furthermore, Southeast Asian American refugees, who may have darker skin and are often of lower income as compared to other AAPI ethnic groups, are exposed to both model minority stereotypes, and Pacific Islander stereotypes of gang involvement, underachievement, and welfare dependence (Ngo, 2006).

Thus, whereas AAPIs are often thought of as one homogenous racial, ethnic, and cultural group, they have been treated differently based on perceived ethnic group membership. Although there are some cultural and phenotypic similarities between groups, there are also differences that should be measured as well.

**U.S.-born AAPI Racism Experiences.** Similar to ethnic group differences, nativity groups also may differ with respect to their experience of anti-Asian racism. Previous analyses linking racism with health have often either disregarded possibly nuanced experiences of U.S.-born AAPIs relative to immigrant AAPIs (Gee, Chen, Spencer, et al., 2006; Gee et al., 2007b) or have focused entirely on immigrant experiences of bias (Barry & Grilo, 2003). However, because of unique experiences of acculturation and racial socialization, U.S.-born AAPIs may differ from immigrant
AAPIs in their perceptions and experiences of racism (Kim, Brenner, Liang, & Asay, 2003; Willgerodt & Thompson, 2006; Yoo et al., 2010).

For example, perpetual foreigner racism (e.g., being asked repeatedly where one is “really” from) is generally characterized as impacting all AAPIs (Lee et al., 2009). However, for U.S.-born AAPIs, being asked where one is from may be perceived as an implication that they are less “American,” and, thus, from a “perpetually foreign” culture, which may be distressing for AAPIs who were born in the U.S. Contrastingly, for immigrant AAPIs, being asked, “Where are you from?” may be perceived as a genuine interest about the country they recently emigrated from, and thus the comment would be experienced as less distressing as compared to U.S.-born AAPIs.

Moreover, although the model minority stereotype is assumed to affect all AAPIs similarly (Lee et al., 2009), U.S.-born AAPIs may perceive the stereotype more frequently throughout their lives than AAPI immigrants, which may impact related distress. The model minority stereotype, contending that AAPIs are intellectually superior and do not contend with racism, is often made explicit with respect to school achievement. Therefore, AAPIs who attended school as young children within the U.S. have likely faced expectations of intellectual aptitude, academic competition, and scholarly achievement throughout their grade-school years. In contrast to AAPI immigrants, it is possible that such developmental experiences foster more recognition of model minority stereotypes in their environment among native AAPIs, as well as more distress related to such experiences. Indeed, some research has suggested that U.S.-born AAPIs were more likely to report racism experiences relative to their immigrant peers.
(Kuo, 1995). It is possible, then, that because U.S.-born AAPIs are socialized within the U.S. system of racism, they recognize racialized stimuli in differing capacities compared to AAPI immigrants, who may be more attuned to other forms of anti-immigrant bias.

Thus, although AAPIs are often regarded as one homogenous nativity group, U.S.-born AAPIs likely recognize and are distressed by anti-Asian events differently from immigrant AAPIs due to divergent racial socialization experiences. Although some Asian cultural values may be shared between groups, racial socialization differences necessitate that U.S.-born AAPIs be assessed separately from AAPI immigrants.

**Institutional, Cultural and Individual Anti-Asian Racism Experiences**

To better understand the ostensible relationships between racism and health for AAPIs, Jones’s (1997) three categories of racism that people of Color experience, (a) institutional, (b) cultural, and (c) individual, might be useful.

**Institutional Racism.** Jones (1997) defines institutional racism as a system of societal practices that restrict “choices, rights, mobility and access,” based on race, to groups of people (p. 14). Past research has demonstrated that AAPIs do contend with various types of institutional racism in the forms of housing and employment discrimination. Specifically, a paired housing test by the Urban Institutes revealed that one in five AAPI renters seeking housing was significantly less likely to receive some form of follow-up contact from rental agents after viewing a prospective property than prospective White renters (Turner, Ross, Bednarz, Herbig & Lee, 2003). Rental agents were also more likely to make arrangements for future contact with White prospective renters than with AAPI prospective renters. Moreover, AAPI prospective homebuyers
were discriminated against with regards to home inspections, housing availability, financing assistance, and agent encouragement (e.g., follow-up contact) as well. However, no between groups analyses compared ethnic or nativity group experiences.

Another form of anti-Asian institutional racism can be found in studies of employment data. In a comparison of White and multiethnic, immigrant and U.S.-born AAPIs, Tang (1997) found that disproportionately fewer AAPIs employed within science and engineering positions were placed in managerial positions, despite being the majority racial group in the science field. Tang reasoned that because of model minority stereotypes denigrating AAPIs’ leadership skills and interpersonal savvy, AAPIs were denied jobs that offered more status, wealth, and upward mobility. However, her study did not differentiate between immigrant and U.S.-born employees. Likewise, Kim and Sakamoto (2010) found that U.S.-born AAPI men of varying ethnic heritage earned eight percent less yearly income compared to equally qualified White American men. Similar to Tang, the authors reasoned that lingering racial discrimination continues to prevent U.S.-born AAPI men from earning an equal income to their White peers. Collectively, studies of institutional racism suggest that AAPIs experience it at a group level, though ethnic and nativity group differences are often neglected in the analyses.

Cultural Racism. Jones (1997) defines cultural racism as the individual and institutional expression of one group’s racial superiority over others, with respect to various cultural values including music, philosophy, law, morality, and orientations towards health. AAPIs frequently contend with cultural messages to the effect that their appearances, cultures, and ways of life are less valuable than those of White Americans.
The predominance of Judeo-Christian values, individualistic orientations, White phenotypic features, somewhat egalitarian gender roles, and separations of health symptoms are characteristic of the dominant cultural system valued in the U.S. (Ladhani & Lee, 2009; Lau, Lum, Chronister, & Forrest, 2006; Markus & Kitayama, 1991; Suh, 2007). In contrast to White cultural “ideals,” members of AAPI cultures are often stereotyped as being perpetual foreigners who are less “American,” and have poor social skills (Grossman & Liang, 2007). As a result, they subsequently struggle to foster an identity that values the realities of their cultures of origin (Iyer & Haslam, 2003).

**Individual Racism.** Jones (1997) defines individual racism as a person’s belief in the superiority of one’s race and the interpersonal and behavioral outcomes that preserve this belief system. AAPIs experience everyday interactions of overt and more ambiguous statements and actions insinuating their inferior racial heritage in the U.S. (Sue et al., 2007). Specifically, multiethnic, U.S.-born AAPIs report contending with racial *microaggressions*, which are defined as “brief, everyday exchanges that send denigrating messages to people of Color, because they belong to a minority racial group (Sue et al., 2007, p. 72). Such statements may include being told that “Asians don’t experience racism” or “All Asians look the same,” or being asked for help with a math or technology related question, just because one “looks” Asian rather than because of any demonstrated skills in the subject matter. Individual racism may be particularly stressful, and, therefore, harmful to AAPIs’ health because they must cope with non-specific racial stressors in a society that contends that they are not affected by racism.

**Empirical Evidence of Health Distress Resulting from Racism**
Several race-related stress theorists have asserted that racism experiences are related to poorer health (Carter, 2007; Myers et al., 2003; Sue et al., 2007). When investigating the effects of racism on AAPI health, researchers have dichotomized health into psychological or physical systems, but they have not assessed both. Additionally, they have often investigated general forms of discrimination rather than focusing on anti-Asian racism specifically. Despite such limitations, previous research suggests that experiences of anti-Asian racism are related to health outcomes, and specifically that racist events are related to psychological or physical outcomes (Gee et al., 2007b; Yip et al., 2008). Thus, existing studies can be approximately classified as relating racism to (a) physical health outcomes or (b) psychological health outcomes.

**Physical Health.** Physical health is defined as a system of bodily functions that is characterized by biological processes. To measure how everyday individual racism was related to physical health outcomes, Gee et al. (2007b) assessed the relationships between individual discrimination experiences and chronic physical health symptoms, specifically cardiac, respiratory, and pain symptoms. They used a sample of AAPI adults (\(N = 2,095\)) of varied ethnic and nativity statuses, who endorsed whether they had experienced nine types of general discrimination (e.g., being “treated with less respect than other people,” “receiving poorer service than others at restaurants and stores”). Using odds ratio analyses, the researchers found that individuals reporting experiences of discrimination were more likely to report chronic health symptoms (i.e., respiratory, cardiac, pain) than individuals who did not report experiences of discrimination.

When they explored ethnic heterogeneity of symptom manifestations among
AAPI ethnic groups, Gee et al. (2007b) also found that particular categories of physical health symptoms (e.g., cardiac, respiratory) were not uniformly related to discriminatory experiences among the three largest ethnic groups in their sample. Specifically, discrimination was associated with higher odds of reporting cardiac symptoms for Chinese- and Vietnamese Americans, but not significantly so for Pilipino Americans. Similarly, Vietnamese- and Pilipino American participants’ odds for experiencing respiratory and pain symptoms were significantly higher when participants also reported discriminatory experiences, but not significantly so for Chinese Americans. These analyses thus support the notion that ethnic group racism experiences are differentially related to health outcomes.

An important limitation of Gee et al.’s study is that their analysis included AAPI participants reporting previous undifferentiated experiences of discrimination due to race, ethnicity and/or skin color, as well as language, age, weight, sexual orientation, and gender. Therefore, Gee et al.’s analysis was partially instructive for informing the present investigation, because it suggests a relationship between general discrimination and physical health, but their results do not pertain specifically to the question of whether racism and health are related, because their analyses confounded race with other non-race based discrimination experiences.

To investigate how racial discrimination was related to physical health symptoms in particular, Gee, Ro, Gavin, and Takeuchi (2008) conducted an analysis that only included multiethnic, U.S-born and immigrant AAPI participants recruited from a community sample, who endorsed experiences of discrimination due to race, ethnicity, or
skin color. Using regression analyses, they investigated whether the self-reported racial discrimination experiences of respondents were predictive of body mass index (BMI) and obesity.

Gee et al. (2008) found that BMI was significantly higher among participants reporting high rather than low experiences of racial discrimination, thus suggesting that there may be a relationship between racial discrimination and higher BMI. Moreover, among immigrants reporting high discrimination, length of U.S. residency was associated with higher BMI, suggesting that racial socialization was related to racism experiences and health. The positive relationship between length of U.S. residency and poorer health also supports the premise that U.S.-born AAPIs may experience race-related stress differently from some immigrants due to a longer history of racial socialization within the U.S. However, it should also be noted that Gee et al. (2008) asked participants about experiences of discrimination due to race, “nationality, ethnicity, and/or skin color,” (p. 494). Such wording may have been confusing for participants who viewed their ethnicity (e.g., being Vietnamese American) and racial group (e.g., being AAPI) as eliciting different experiences.

**Psychological Distress.** Psychological distress is defined as emotional and psychological symptoms that occur as a result of environmental and intrapersonal stressors that a person is unable to manage on his or her own. Studies have found that AAPIs do report psychological distress that seems to be related to anti-Asian racism. For example, one study with a focus on cultural racism found that AAPIs internalized the premise that their culture was inferior, and subsequently struggled to assimilate to White
cultures or felt pressured to fulfill AAPI stereotypes (Lee, 1994).

Specifically, Lee investigated Asian American identity development by interviewing high school students (Lee did not report how many students she interviewed). Disregarding ethnicity and nativity status, she found that AAPI youths self-imposed academic pressure to succeed and experienced shame when they felt they failed to live up to the expectations of the model minority myth. Thus, there may be a relationship between cultural racism and psychological distress for AAPIs. Yet no studies have explored whether exposure to cultural racism is related to a combination of physical and psychological symptoms or how cultural racism experiences may inform internalized racial stereotypes that AAPIs hold about themselves.

Evidence suggesting that individual experiences of discrimination are related to psychological distress has further supported the relationships between racism and health. Such data are somewhat limited due to their reliance on definitions of discrimination that confound racial and ethnic discrimination; however, findings do support the premise that experiencing bias is stressful for AAPIs. For example, Yip et al. (2008) used a sample of ethnically diverse immigrant and U.S.-born AAPI adults (N = 2,047) and conducted several analyses of variance and linear regressions to link experiences of individual ethnic and racial discrimination to general psychological distress. Disregarding ethnicity, racial and ethnic discrimination were significantly predictive of psychological distress for the total sample.

Moreover, for U.S.-born participants, Yip et al. found that the relationship between racism and psychological distress was dependent on age and ethnic identity.
Here, the authors defined *ethnic identity* as how close participants “felt in their ideas and feelings about things, to other people of the same racial and ethnic descent” (Yip, et al., 2008; p. 790). Participants responded to a quantitative scale ranging from “not at all close” to “very close” to other people of the same racial and ethnic descent. Specifically, for U.S.-born participants between 31 and 40 years old, ethnic identity exacerbated the relationship between racial discrimination and psychological distress, wherein stronger ethnic identities predicted more psychological distress related to racism experiences. Conversely, for U.S.-born participants who were 41 to 50 years old, ethnic identity buffered the relationship between experiences of racism and health outcomes, such that strong ethnic identities were associated with weak relationships between psychological distress and racism.

Thus, despite the fact that the authors did not differentiate between ethnic/racial discrimination or racial/ethnic identity and they did not compare ethnic groups, Yip et al.’s (2008) results are informative for the present study as they highlight that for U.S.-born AAPIs, discrimination experiences are related to health. Their results also suggest that, depending on age, psychological variables such as ethnic or racial identity may be associated with racism experiences and distress.

Further, to assess whether experiences of racism contribute to psychological distress, some research has focused on White American clinical criteria for psychological illness used in counseling psychology and psychiatry. For example, Gee et al. investigated whether experiences of everyday discrimination were related to psychological illness criteria established by the American Psychiatric Association in the
Diagnostic and Statistical Manual of Mental Disorders (DSM) (APA, 1994) (Gee et al., 2007a). The authors collected data from multiethnic, immigrant and U.S.-born AAPI adults (N = 2,095) about their discrimination experiences and DSM defined psychological symptoms. Gee et al. used a series of logistic regression analyses to investigate whether frequency of experiencing individual discrimination events was predictive of participant scores that met DSM criteria for one or more disorders.

Supporting the idea that bias and health are related, Gee et al. found that a one-unit increase in participants’ everyday discrimination scores was associated with 1.9 greater odds of meeting criteria for a DSM diagnosis within the last 12 months (Gee et al., 2007a). Specific to anxiety and depression, participants reporting median levels of discrimination were 93% more likely to meet criteria for an anxiety disorder and 169% more likely to meet criteria for a depressive disorder than participants reporting low discrimination levels. The researchers also found that discrimination was associated with a higher risk of meeting criteria for co-occurring disorders.

The results of Gee et al.’s analyses are informative for the proposed study because they support the likelihood that there is a relationship between racism and psychological symptoms of distress. However, because the researchers did not differentiate experiences of discrimination due to race-based experiences from non race-based discrimination events (e.g., ethnic, age, gender), their study may have no direct application to the question of how racism influences health symptoms. Moreover, it is unclear whether U.S.-born AAPIs differed from immigrant AAPIs, or whether ethnic groups differed from each other, since no group comparisons were conducted.
Summary

Collectively, studies support the premise that AAPIs experience several types of individual, institutional and cultural racism, and that individual racism experiences in particular are predictive of physical or psychological distress. However, few racism studies have focused on the experiences of U.S.-born AAPI samples or ethnic groups.

AAPI Health Orientations

Given the evidence that AAPIs experience pervasive racism and are psychologically and physically affected by racist experiences, it is striking that AAPIs have been previously assumed to be in better health than other racial minority groups (U.S. DHHS, 1999). One possible reason why the health status of AAPIs has been incorrectly assessed is because researchers typically have used a White American health paradigm to assess the symptoms of AAPIs as a collective socioracial group, as opposed to a paradigm informed by AAPI ethnic cultures. Contrasting the White Western and Asian health paradigms conceptually might provide insight about which aspects of AAPI health may be differentially affected by racism. Thus, the next section of the literature review will describe (a) some AAPI cultural conceptualizations of health (b) U.S.-born AAPI health orientations, and (c) empirical evidence relating holistic orientations to symptom presentation.

Comparisons of Asian and White American Health Paradigms

In the White American world, health has historically been conceptualized according to a dualistic model that views physical and psychological health as discrete categories (Lin & Cheung, 1999). Within this paradigm, psychological health distress is
thought to exist in one realm, where diagnoses and treatments are formulated based on emotions and cognitive processing (Fabrega, 1990). In contrast, Lin and Cheung argue that Asian cultures traditionally refer to psychological and physical systems as parts of an integrated unitary health construct, which regards mind and body as parts of one system (1999).

Based on philosophies where harmony should exist between *yin* and *yang* forces, traditional Asian health practitioners view distress as signifying an imbalance between systems (Chan, Tan, Xin, Sudarsanam, & Johnson, 2010; Wong & Lien-Teh, 1936). Specifically, distress in the mind is conceptualized as being linked to distress in the body (Ladhani & Lee, 2009). Thus, AAPIs experiencing emotional distress are expected to also experience physical discomfort. Likewise, AAPIs experiencing physical symptoms are expected to experience anxiety and depression as well. Restoring balance will consist of applying holistic interventions, such as herbal remedies with hot and cold properties, meditation, acupuncture, and massage (Constantine, et al., 2004; Ladhani & Lee, 2009).

Asian holistic health conceptualizations are argued to consciously and unconsciously influence AAPIs’ experiences of distress, wherein AAPIs are less likely to separate their psychological and physical health symptoms (Hahm, Ozonoff, Gaumond, & Sue, 2010). As a result, after experiencing a racist event, AAPIs may experience both psychological and physical health symptoms, conceptualizing both as interrelated.

**U.S.-born AAPI Health Orientation.** Endorsement of an Asian health paradigm may be shaped by where an AAPI grew up because developmental experiences can be indicative of racial and cultural socialization and thus contribute to how an AAPI relates
to Asian and U.S. culture. Specifically, due to prolonged socialization in a predominantly White American culture, U.S.-born AAPIs may support cultural features that are more representative of White American culture (Portes & Rumbaut, 2001). Although nativity status itself is not what shapes cultural orientation, it may serve as a proxy for the extent to which an AAPI is socialized within a cultural system. Thus, it is possible that U.S.-born AAPIs have internalized more White American values through lifetime U.S. cultural socialization relative to immigrant AAPIs. As a result, they may endorse some aspects of a separated, dualistic health paradigm (e.g., experiencing either psychological or physical symptoms) in response to race-related stress.

However, it is also conceivable that U.S.-born AAPIs have internalized both dualistic and holistic health paradigms, due to bicultural socialization in the U.S. (LaFromboise, Coleman, & Gerton, 1993). Indeed, an AAPI person’s health orientation possibly depends on the extent to which he or she has integrated Asian and White American cultural values (Tummala-Narra, 2004). Ultimately, variations in the way U.S.-born AAPIs have been socialized to experience distress may impact how or whether racism experiences are related to whether some AAPIs experience either psychological or physical symptoms in response to distressing events, whereas others experience a combination of both symptom types.

**Empirical Evidence Relating Holistic Orientations and Symptom Presentation**

If AAPIs do conceptualize and experience symptoms according to a holistic, Asian paradigm of health, there may be a relationship between racism and health, whereby symptoms occur through manifestations consistent with an Asian paradigm.
Supporting the concept that AAPIs conceptualize symptoms according to a holistic health paradigm, some research suggests that AAPIs perceive psychological health symptoms as having physical counterparts (Ying, 1988). For example, to explore how an AAPI community conceptualized features of depression, Ying conducted a factor analysis of responses to the *Center for Epidemiological Studies Depression Scale* (CES-D) (Radloff, 1977), collected from a sample of immigrant and U.S.-born Chinese American adults (N = 360) living in San Francisco.

Ying found that somatic items (e.g., having trouble getting going, distractibility), loaded on the same factor as depressive affect items (e.g., feeling lonely, feeling depressed) suggesting that physical symptoms were as focal to depression as feeling sad. Such alignment of symptom categories differs from Radloff’s White American conceptualization of depression and structure of the CES-D, wherein depressive affect and somatic symptoms are considered to be separate factors (Radloff, 1977). Thus, Ying’s findings suggest that AAPIs who use an Asian health paradigm may conceptualize depression differently from AAPIs who use a White, American model(s) of depression, where somatic and affective symptoms are separate.

Also, evidence that AAPIs experience a high prevalence of somatic symptoms has been used to support the premise that AAPIs experience distress through interrelated psychological and physical symptoms. *Somatic symptoms* are defined as physical symptoms experienced with no explicit medical rationale and that physical and psychological health practitioners view as an expression of psychological distress (Ladhani & Lee, 2009; Lin & Cheung, 1999). In one example of AAPIs’ somatic
presentation, Lin et al. conducted phone interviews with a Los Angeles based community sample of U.S.-born and immigrant Korean American adults ($N = 109$), and asked participants about their experiences of depressive and somatic symptoms by using quantitative scales and open-ended questions.

Lin and Cheung (1999) found that 12% of participants reported suffering from “hwa-byung,” a Korean folk illness characterized by chest pains, heart palpitations, flushing, headaches, dysphoria, anxiety, irritability and difficulty concentrating. All participants experiencing hwa-byung also met DSM-III criteria for major depression (APA, 1980). Such physical symptom components suggested that hwa-byung participants’ experiences of depression were characterized by several physical factors, in conjunction with affective features, and in accordance with holistic health orientations.

Lin et al.’s (1992) findings suggest that various physical components may accompany AAPI affective depressive experiences. Extending these results to experiences of racism, Lin et al.’s results suggest that experiences of racism and related psychological processing constructs may be related to both psychological health symptoms (e.g., dysphoria, anxiety, irritability, difficulty concentrating) and physical health symptoms (e.g., headache, chest pains, flushing, palpitations).

Further supporting the idea that AAPIs experience distress according to a holistic, Asian paradigm, Zheng et al. (1997) used the *Composite International Diagnostic Interview* (CIDI) (Robbins, Wing, Wittchen, & Helzer, 1988) to investigate how various DSM disorders were manifested in a sample of immigrant and U.S.-born Chinese American adults ($N = 1,747$). They found that a subsample of participants ($N = 112$) met
criteria for “neurasthenia,” a condition characterized by feelings of physical or psychological weakness, dizziness, muscle pains, gastrointestinal distress, and irritability (World Health Organization, 1992). Neurasthenia is a diagnosable and widely recognized condition in Asia, but is no longer listed in the Americanized *Diagnostic and Statistical Manual* (APA, 2000; Lin & Cheung, 1999).

Although only 6.4% of participants met criteria for neurasthenia, neurasthenia was the most frequently diagnosed psychological disorder for the sample, exceeding diagnoses of major depression, phobia, dysthymia, and anxiety (Zheng et al., 1997). Of note, the majority of the neurasthenia participants were immigrants. Thus, it is possible that neurasthenia and other holistic symptom phenomena are more salient for immigrants than U.S.-born AAPIs.

Overall, like Lin et al.’s results (1999), Zheng et al.’s (1997) study suggests that some AAPIs experience distress consisting of physical and psychological symptom combinations. By relying on a holistic paradigm that views AAPI distress as a mixture of physical and psychological symptoms, researchers might develop more accurate measures of distress, including distress related to racism experiences and racial identity processing.

**Summary**

Ying’s (1988) research supports the premise that some AAPIs conceptualize psychological and physical health as interrelated, and Zheng et al. (1997) and Lin et al.’s (1999) studies support the premise that AAPIs experience distress characterized by holistic combinations of physical and psychological symptoms. In spite of such symptom
presentation, most AAPI race-related stress studies have investigated psychological rather than psychological and physical health outcomes, thereby relying on dualistic health conceptualizations.

**Racial Identity and Health**

If racism and health are related, it is also possible that they are both related to underlying psychological processes that facilitate management of racism distress (Helms, 1997). After a racist event occurs, psychological processes may elicit cognitive, affective, and/or behavioral response(s) that depend on a person’s coping mechanisms and information processing strategies. Specifically, one set of psychological processes that has been hypothesized to affect how AAPIs perceive and react to racist events is Helms’s (1997) People of Color racial identity schemas.

In Helms’s theory, *schemas* are the cognitive, affective, and behavioral information processing strategies and coping mechanisms that AAPIs use when experiencing racism. By investigating how racial identity schemas are related to health outcomes as well as different types of anti-Asian racism events, it may be possible to obtain a better understanding of how racism experiences are or are not internalized by AAPIs. Therefore, in the following section, I discuss (a) Helms’s People of Color racial identity theory as it pertains to schemas; (b) ethnic group and nativity status group differences in racial identity; and (c) empirical evidence concerning relationships among racial identity, AAPI health, and anti-Asian experiences of racism.

**People of Color (POC) Racial Identity Schemas**

According to Helms’s (1997) People of Color Racial Identity model, racial
identity is essentially the manners by which a person potentially overcomes internalized anti-AAPI racism by rejecting societal messages about one’s inferior status. Optimally, AAPIs replace such negative societal messages with a positive identity rooted in the capacity to engage in sophisticated or cognitively complex analyses of the group’s and, therefore, the person’s racial experiences.

Helms posits that analysis of the personal effects of anti-AAPI racism occurs by means of some combination of five schemas, Conformity, Dissonance, Immersion-Emersion, Internalization, and Integrative Awareness (Alvarez & Helms, 2001; Helms, 1997). AAPIs may use each of the five schemas to some extent, but the person’s strongest or preferred schema is considered dominant in Helms’s theoretical framework, and the person heavily relies on it for providing a lens for interpretation of racial events. Depending on one’s dominant schema, interpretations, perceptions, and experiences of racism will vary.

**Conformity.** The Conformity racial identity schema is the least sophisticated manner of adjusting to racism and is the dominant schema for an AAPI who devalues his or her own racial group, aligns with White social norms, and has little or no understanding of his or her racial group’s sociohistorical background (Helms, 1997). When Conformity is dominant in an AAPI’s racial identity constellation, the person may seem unaware of societal implications of racial dynamics as they pertain to AAPIs, and oblivious to experiences of racism.

It is possible that AAPIs, dominant in Conformity, will experience distress resulting from racism, but may not recognize their distress as racism related. For
example, they may have some awareness that they are treated differently from their White peers, but not have an awareness of how their racial and cultural history is presented as inferior in society (Helms, 1997). As a result, they could be distressed by interpersonal interactions (e.g., being frequently mistaken for another person of AAPI heritage), but not recognize that such events are related to their race. Moreover, it is unlikely they will recognize subtler examples of cultural racism or will have knowledge or awareness of institutional racism. Also, they may reject Asian cultural orientations, including health paradigms, in favor of White American orientations.

**Dissonance.** Dissonance, the second schema in Helms’ People of Color model, is characterized by ambivalence and confusion about the AAPI racial group and the White racial group, as well as the imbalance of power between the two. When Dissonance is dominant, an AAPI individual will repress anxiety-evoking information regarding racial stimuli.

Moreover, it is possible that AAPIs dominant in Dissonance will recognize racism within their interpersonal interactions, and may identify experiences of cultural and institutional racism. As a result, they will likely experience anxiety about the meaning of such racist events, but have few coping mechanisms for managing their distress. They may also have some understanding of Asian health paradigms, but be confused and distressed about how to integrate Asian and White American cultural orientations.

**Immersion-Emersion.** The next schema in Helms’s model is Immersion-Emersion, where AAPIs may reject White cultural norms and embrace idealized AAPI culture. AAPIs may be mainly using the Immersion-Emersion schema if they prefer
being around other AAPIs exclusively, and/or if they psychologically withdraw from
White people. They may also actively respond to racial stimuli in a politicized manner,
based on an understanding of the imbalance of racial power in society. Also, they may be
hypervigilant to racial stimuli and engage in dichotomous thinking.

As a result, AAPIs dominant in Immersion-Emersion likely easily recognize and
become distressed by individual (e.g., microaggressive), cultural (e.g., perpetual
foreigner), and institutional racism events. However, they may also rely on more coping
mechanisms for understanding and recognizing their racism-related distress, compared to
their peers who are dominant in Dissonance or Conformity. It is also possible that they
are aware of Asian cultural paradigms and may exhibit both psychological and physical
symptoms.

**Internalization.** This second most sophisticated schema may be dominant for
AAPIs when they embody internalized attributes of the AAPI racial group, have a
positive investment in the well being of other AAPIs, and also are objective in their
interactions with White Americans. They are thus able to integrate a positive AAPI
identity and also acknowledge the non-racist aspects of White people and culture, while
considering the complexity of systems of privilege introspectively. Predominance of the
Internalization status’s schema is marked by flexibility and analytic thinking.

Moreover, AAPIs dominant in Internalization likely recognize individual,
cultural, and institutional racism events. However, in contrast to their peers who are
dominant in Immersion-Emersion, they may experience less related distress due to
increased analytic coping skills and less hypervigilance to racial stimuli. They also likely
are able to integrate both White American and Asian cultural orientations, possibly exhibiting interrelated or dualistic orientations to health.

**Integrative Awareness.** Finally, Integrative Awareness is the last and most sophisticated racial identity schema that Helms posited; when it is dominant, AAPIs have the ability to hold personally meaningful understandings of their intersecting identities, and also collaborate with members of other oppressed groups to resist discrimination as a collective. AAPIs with racial identity profiles dominant in Integrative Awareness rely on information processing strategies that are both complex and flexible.

Similar to AAPIs dominant in Internalization, AAPIs dominant in Integrative Awareness typically recognize individual, cultural and institutional racism events. However, they may not experience as much distress as their peers who are dominant in other statuses due to their complex understandings of their own identities and larger systems of oppression and privilege. They might exhibit integrated health paradigms that consist of both dualistic and holistic features.

**Ethnic Group Differences**

Comparisons of how ethnic groups use racial identity schemas might reveal between-group differences with respect to their perceptions and internalizations of such events (M. Liu, Helms, & Chen, 2011). For example, AAPI ethnic groups may rely on different schemas when processing racial events, because of historical variations in their racism experiences. Individual members of some groups may feel kinship with the aggregate AAPI socioracial group if they recognize similarities between the various ethnic groups’ conditions of oppression. Such individuals might rely on Immersion-
Emersion as the dominant schema to process information and cope when they are exposed to racial stimuli. Comparatively, other ethnic group members might foster more ambivalence about belonging to the larger AAPI group, and as a result, they may rely more on Dissonance as the dominant schema during stressful racism events. Thus, as a result of individuals’ using different psychological styles to process racist events, the same racism experiences might elicit different health symptoms from individuals depending on their ethnic groups.

**U.S.-born AAPI Racial Identity**

Many racial socialization experiences may affect how or whether AAPIs think of themselves as members of the AAPI racial group, including whether they are immigrants or natives of the U.S. Consequently, similar to ethnic group racial identity variations, U.S.-born AAPIs may differ in their racial identity from immigrants because of differences in racial socialization (Kim, Brenner, Liang, & Asay, 2003; LaFromboise, Coleman, & Gerton, 1993; Tummala-Narra, 2009; Yoo et al., 2010).

To date, no research has explored whether endorsement of specific racial identity schemas differs based on whether the AAPI respondent is an immigrant or native to the U.S. However, unlike immigrant AAPIs, U.S.-born AAPIs have been socialized to participate in the American system of racism. Therefore, they may recognize and think about their racial status from within the racial hierarchy more frequently than immigrants, depending on the age that an immigrant moves to the U.S. Specifically, relative to immigrants, U.S.-born AAPIs are unique, in that the racial term “Asian American” has been used to refer to their demographic group for all of their lives (Perry, 2008).
Maturing from childhood to adulthood bearing this label may affect how AAPIs construct their understanding of themselves as both Asian and American, and potentially has affected their feelings about belonging to the AAPI racial group.

Indeed, previous research has suggested that, unlike immigrants, U.S.-born AAPIs may prefer to be referred to as a “hyphenated American,” that is, Asian American, rather than simply “Asian” (Rumbaut, 1994), implying a bicultural sense of belonging to the Asian racial group. However, no research has sought to examine how specific schemas might be related to racism experiences for U.S.-born AAPIs specifically or to how schemas might be related to differing experiences of distress.

**Empirical Study of Racial Identity with AAPI samples**

**Racial Identity Aggregate Studies.** Some studies have examined racial identity development using AAPI samples, however few studies have accounted for ethnic and/or nativity group differences. Of direct relevance to the present study is the extent to which racial identity schemas were related to racism or racism reactions and/or physical or psychological symptoms in previous studies. For example, Alvarez and Helms (2001) conducted a regression analysis with a college sample of multiethnic, U.S.-born and immigrant AAPIs ($N = 188$). They found that participants’ Immersion scores (i.e., idealized in-group racial views) were positively associated with awareness of individual and institutional racism, and Dissonance scores (i.e., confusion about race) were associated with low levels of awareness of individual racism.

Thus, their results suggest that Dissonance and Immersion may be differently related to how AAPIs understand and acknowledge racism events. Specifically, their
research may indicate that use of less sophisticated racial identity schemas is related to less sophisticated recognition of racism related stimuli, which may be related to limited ability to cope with related psychological distress. Conversely, more sophisticated racial identity schemas may be related to more sophisticated recognition of racism related stimuli, and thus denote better coping mechanisms for recognizing and managing related psychological distress.

Iwamoto and W. Liu (2010) examined the interactions among three types of variables of relevance to the present study: racial identity, as measured by Helms’s People of Color Racial Identity Scale (PRIAS, Helms, 1995); race-related stress, as measured by Liang et al.’s Asian American Race Related Stress Index (AARRSI, Liang, Li, & Kim, 2004); and psychological well-being, as measured by Ryff’s Subjective Psychological Well-Being scale (SPWB, Ryff, 1989). Their sample consisted of multiethnic, immigrant and U.S-born AAPI college and graduate students (N = 402).

Iwamoto and Liu found that some racial identity statuses moderated relationships between stressful racism experiences and psychological well being. Specifically, Conformity and Dissonance significantly moderated relationships between participants’ racism experiences and well-being, such that high levels of both schemas were associated with lower levels of psychological well-being. However, they did not measure how particular types of anti-Asian racism (i.e., institutional, cultural, or individual) might be differentially related to racial identity and psychological health.

Importantly, Iwamoto and W. Liu conducted an additional moderation analysis for U.S.-born AAPI participants (N=257), wherein they found the same results as those
from the analysis that aggregated nativity status groups. These findings thus support that racial identity statuses may interact with both race-related stress and general psychological symptoms for U.S.-born AAPIs specifically.

**Ethnic Specific Racial Identity Studies.** To address the questions of whether ethnic groups differ with respect to racial identity schemas and racism events, one study has explored whether the racial identity profiles of AAPI ethnic groups were differently related to psychological distress. M. Liu et al. (2011) used criterion pattern analyses (Davison & Davenport, 2002) to investigate how racial identity profiles differentially predicted racism-related psychological distress for a group of immigrant and U.S.-born Chinese \(N = 101\) and Pilipino American \(N = 70\) adults.

The researchers used the PRIAS (Helms, 1995) and Harrell’s (1997) *Racism and Life Experiences Scale*, and found that different racial identity profiles predicted racism distress for both ethnic groups. Specifically, for Pilipino Americans, profiles dominant in Dissonance predicted how frequently such events had occurred as well as how stressful the experiences of racism were; whereas for Chinese Americans, profiles dominant in Immersion predicted frequency of racism experiences and related distress.

M. Liu et al.’s results suggest that although AAPI subgroups are often thought to internalize their AAPI racial group membership in similar ways, ethnic groups may internalize racial identity schemas differently, especially when interpreting anti-Asian racism events. In particular, as an ethnic group, Pilipino Americans immigrated to the U.S. more recently than Chinese Americans, and thus may internalize their belonging to the larger AAPI group differently than their Chinese American peers. These differences
may inform different recognition of anti-Asian events, as well as how those encounters are experienced as distressing.

Thus, there may be different relationships between racial identity statuses and health for different AAPI ethnic groups, but health outcomes have not been investigated directly. In considering how or whether racial identity, racism and psychological and physical health symptoms are related, it is important to consider whether certain racial identity schemas are related to particular symptoms, depending on ethnic group identification.

**Statement of the Problem**

Past research has suggested that AAPIs are the targets of racial bias, and that such experiences may be related to health (Carter, 2007; Gee et al., 2007a, 2007b). Moreover, some research has found that racial identity moderates AAPIs’ experiences of racism-related psychological distress (Iwamoto & Liu, 2010), though not physical distress. However, no study has explored relationships between racial identity schemas and different types of racism (i.e., anti-Asian institutional, cultural, and individual). Moreover, no study has assessed whether and how racial identity is itself related to psychological and physical health symptoms.

In the present study I investigated intersections among race-related experiences, racial identity, and physical and psychological symptoms. Given that these concepts have never been investigated together, no theoretical model exists for speculating about how they should be related as a whole. Thus, my exploratory investigation generalizes from previous theoretical and empirical literature in which at least two of the concepts have
been used to study either AAPI samples aggregated across ethnic groups or specific ethnic groups. Moreover, in the present study, I added the element of investigating the three sets of concepts as they pertain to two AAPI ethnic groups.

**Group Differences**

Past theories have proposed group differences in racism experiences based on AAPI ethnicity (Nadal, 2004; Ngo, 2006), and empirical research supports the premise that ethnic groups differ in their experience and psychological processing of racism (M. Liu et al., 2011). For this study, ethnic groups were analyzed separately to capture ethnic specific relationships among the variables of interest.

Moreover, U.S.-born AAPIs represent a growing and understudied demographic, differing in racial and cultural socialization from their immigrant peers, but their specific experiences have rarely been investigated (Perry 2008; Portes & Rumbaut, 2001; Tummala-Narra, 2009; U.S. Census Bureau, 2011). This study focused on U.S.-born AAPI experiences specifically.

**Experiences of Racism and Physical and Psychological Health**

In the study, I investigated the relationships between experiences of anti-Asian institutional, cultural and individual racism and psychological and physical health symptoms. Previous studies of relationships between anti-Asian bias and health symptoms indicate that such biases may be related to physical and psychological symptoms (Carter, 2007; Gee et al., 2007a, 2007b; Sue et al., 2007). However, many studies of bias have employed measures that broadly define “everyday discrimination,” rather than focusing on anti-Asian racial bias in particular.
To gain a better understanding of how AAPIs in particular experience the three types of racism (institutional, individual and cultural racism) events and how such events might be related to health, I used a racist events measure designed to assess self-reported experiences of anti-Asian individual, institutional, and cultural racism events called the Asian American Race-Related Stress Index (AARRSI, Liang et al., 2004). The scale measures both frequencies of experiencing the events and distress related to the events.

**Hypothesis 1: Self-reported frequency of and distress due to anti-Asian racism experiences, regardless of type (i.e., institutional, cultural, and individual), will be positively related to physical and psychological symptoms.**

The hypothesized relationships are based on previous research suggesting that AAPI experiences of discrimination are distressing and may be related to physical and psychological health outcomes (Carter, 2007; Gee et al., 2007a, Gee et al., 2007b; Sue et al., 2007). Consistent with such research, I expected that more frequent and more distressing experiences of institutional, cultural and individual racism would be related to high levels of physical and psychological symptoms.

**Racial Identity Schemas and Physical and Psychological Health Symptoms**

Previous research has suggested that racial identity is related to AAPI racism experiences. Specifically, Helms’ (1997) People of Color theory of racial identity has been applied in the past to better understand how racial experiences are internalized by AAPIs (Iwamoto & W. Liu, 2010). Iwamoto and W. Liu’s (2010) findings suggest that certain racial identity schemas moderate the relationship between experiencing racism and psychological distress. In this study, I investigated how and whether Conformity,
Dissonance, Immersion, and Internalization schemas were differentially related to self-reported experiences of the three types of racism (i.e., institutional, cultural and individual) and to physical and psychological symptoms.

**Hypothesis 2:** Racial identity statuses (i.e., Conformity, Dissonance, Immersion, and Internalization) will be related to physical and psychological symptoms. Specifically, Conformity and Dissonance will be related to more symptoms, and Immersion and Internalization will be related to fewer symptoms.

The hypothesized relationships are based on previous theory and empirical evidence suggesting that racial identity schemas are related to how AAPIs cope with racial stimuli, and, therefore, how AAPIs’ manage distress (Helms, 1997; Iwamoto & Liu, 2010). I expected that the internalized racism schemas, Conformity and Dissonance, would be related to more physical and psychological symptoms, and the more sophisticated schemas, Immersion and Internalization, would be related to fewer physical and psychological symptoms.

**Hypothesis 3:** Self-reported racism experiences (i.e., institutional, cultural and individual racism experiences) will be related to racial identity schemas (i.e., Conformity, Dissonance, Immersion, and Internalization). Specifically racism experiences will be positively related to Immersion and Internalization, and negatively related to Conformity and Dissonance.

The hypothesized relationships are based on Helms’s (1997) theory that experiences of racism experiences serve as catalysts for racial identity development. Additionally, previous research suggests that Immersion is related to high awareness of
anti-Asian racism and that Dissonance is related to low awareness of anti-Asian racism (Alvarez & Helms, 2001). Thus, I expected that frequencies and distress from racism experiences would be positively related to the more sophisticated Immersion and Internalization statuses, and negatively related to the internalized racism statuses, Dissonance and Conformity.
Chapter 3

Method

Participants

Participants in this study were self-identified U.S.-born Asian American adults of Chinese or Korean heritage. The sample consisted of 203 participants, including 152 Chinese American and 51 Korean American participants. Although some Japanese Americans (n = 26) responded to the survey, these participants were not included in analyses because they were too small a sample. Participants were recruited through online efforts targeting Chinese, Korean, and Japanese affiliated colleges, professional, and community organizations. Participants were given the opportunity to enter a raffle for one of two $150 Visa Gift Cards.

Table 1 provides a summary of the respondents’ self-described demographic characteristics. Mono-racial Asian American participants (n = 192) represented the largest racial group (94.6%), whereas 11 participants identified as being multiracial (5.4%). Participants of Chinese heritage (n = 152) represented the largest ethnic group (74.9%) in the sample, which is consistent with the proportion of Chinese Americans within the AAPI population in the U.S. (U.S. Census Bureau, 2010 Census). The sample was predominantly women (69.0%) and the mean age was 28.13 years (SD = 7.51). A majority of participants identified as a child of immigrant parents (93.6%).
Table 1

Participants’ Self-Reported Demographic Characteristics (N = 203)

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Racial Classification</strong></td>
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<td></td>
</tr>
<tr>
<td>Asian American/ Pacific Islander</td>
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<td>94.6</td>
</tr>
<tr>
<td>Biracial/Multiracial</td>
<td>11</td>
<td>5.4</td>
</tr>
<tr>
<td><strong>Ethnic Classification</strong></td>
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<td></td>
</tr>
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<td>Chinese</td>
<td>152</td>
<td>74.9</td>
</tr>
<tr>
<td>Korean</td>
<td>51</td>
<td>25.1</td>
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<td><strong>Gender</strong></td>
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<td></td>
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<tr>
<td>Men</td>
<td>63</td>
<td>31.0</td>
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<tr>
<td>Women</td>
<td>140</td>
<td>69.0</td>
</tr>
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<td><strong>Parent Immigration Status</strong></td>
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<td>180</td>
<td>88.7</td>
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<tr>
<td>One of Two Parents Is An Immigrant</td>
<td>10</td>
<td>4.9</td>
</tr>
<tr>
<td>All Parents are U.S.-born</td>
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<td>6.4</td>
</tr>
<tr>
<td><strong>Socioeconomic Status of Family of Origin</strong></td>
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<tr>
<td>Middle Class</td>
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<tr>
<td>Upper Middle Class</td>
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<td>28.1</td>
</tr>
<tr>
<td>Upper Class</td>
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<td><strong>Highest Degree Earned</strong></td>
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<tr>
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<td>5.4</td>
</tr>
<tr>
<td>Some College</td>
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<td>11.8</td>
</tr>
<tr>
<td>College Graduate</td>
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<td>31.0</td>
</tr>
<tr>
<td>Some Graduate Courses</td>
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<td>8.9</td>
</tr>
<tr>
<td>Masters Degree (e.g., M.B.A., M.A.)</td>
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<td>36.5</td>
</tr>
<tr>
<td>Doctoral Degree</td>
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<td>5.9</td>
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<tr>
<td><strong>Current Location</strong></td>
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<td>Northeastern U.S.</td>
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<tr>
<td>Midwestern U.S.</td>
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<td>8.9</td>
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<td>Mid-Atlantic U.S.</td>
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<td>Western U.S.</td>
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<td>27.6</td>
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<td>Southern U.S.</td>
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<td>5.4</td>
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<tr>
<td>Hawaiian</td>
<td>4</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Note: All Parents Are Immigrants = Participants raised by single parents had an immigrant parent, Participants raised by two parents had two immigrant parents; All Parents Are U.S.-born = Participants raised by single parents had a U.S.-born parent; Participants raised by two parents had two U.S.-born parents.
Measures

Respondents were asked to complete the following measures: (a) a demographic questionnaire; (b) the People of Color Racial Identity Attitudes Scale (PRIAS) (Helms, 1995); (c) the Asian American Race-Related Stress Index (AARRSI) (Liang, Li, & Kim, 2004); (d) the Kessler Psychological Distress Scale (K10) (Kessler et al., 2002); and (e) the Pennebaker Inventory of Limbic Languidness (PILL) (Pennebaker, 1982).

Demographic Questionnaire. I designed a questionnaire to collect data about participants’ age, gender, education level, and current geographic location, as well as the socioeconomic status of their family of origin and their parents’ immigration status. A sample of the demographic measure can be found in Appendix A.

People of Color Racial Identity and Attitudes Scale (PRIAS; Helms, 1995). The PRIAS is a 50-item self-report measure based on Helms’s People of Color racial identity theory (1990) (Appendix B). It measures four types of strategies that People of Color rely upon when engaging with race-related stimuli. For the present study, the PRIAS served as an assessment of participants’ Asian American racial identity attitudes. The four subscales assess attitudes associated with four schemas, specifically: (a) Conformity, 12 items measuring the extent to which participants embrace White American superiority and reject AAPI values (e.g., “I feel more comfortable being around Whites than I do being around people of my own race”); (b) Dissonance, 14 items that measure attitudes of ambivalence toward other AAPIs and AAPI values (e.g., “I am not sure where I really belong”); (c) Immersion, 14 items that measure the extent to which participants reject White American racial superiority and prefer AAPI values (e.g.,
“My most important goal in life is to fight the oppression of my people”); and, (d) Internalization-Integrative Awareness, 10 items that evaluate participants’ integration of humanistic and multidimensional racial socialization, and personally meaningful AAPI socialization (e.g., “Every racial group has some good people and some bad people”). Participants responded to items using 5-point Likert-type scales, ranging from 1 (strongly disagree) to 5 (strongly agree), to indicate how much they agreed with each of the scales’ items. Scores for each scale were summed, where high scale scores indicate strong use of each schema. Descriptive statistics (i.e., means, standard deviations, and range of responses), reliability coefficients for the aggregate group, and the two ethnic subsamples’ PRIAS responses can be found in Table 2.

Helms, Henze, Sass, and Mifsud (2006) cite Ferketich (1990) as the source of their recommendation that theta be used to estimate the internal consistency of item responses for multidimensional scales rather than Cronbach alpha coefficients. Thus, for this study, theta was computed to assess the reliability of participants’ responses to the four PRIAS schema scales. Theta was computed separately for the total sample, as well as for the Chinese and Korean subsamples. The resulting coefficients indicated that between 74% and 86% of the variability in participants’ responses to the subscale items could be attributed to consistent responding for the Chinese American sample, between 73% and 81% for the Korean American sample, and between 73% and 84% for the aggregate sample (See Table 2). Previous studies of AAPI samples have reported similar reliability estimates. For example, Kohatsu et al. (1992) used Cronbach alpha coefficients
Table 2
Means, Standard Deviations, Ranges, and Theta Coefficients for the People of Color Racial Identity Scales, Asian American Race Related Stress Index, Kessler 10, and the Pennebaker Inventory of Limbic Languidness by Ethnic Group (N = 223)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>Obtained Range</th>
<th>Possible Range</th>
<th>θ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sample (N = 223)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>PRIAS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conformity</td>
<td>27.05 (5.59)</td>
<td>14.00-43.00</td>
<td>12.00-60.00</td>
<td>.73</td>
</tr>
<tr>
<td>Dissonance</td>
<td>36.81 (8.13)</td>
<td>17.00-58.00</td>
<td>12.00-60.00</td>
<td>.83</td>
</tr>
<tr>
<td>Immersion</td>
<td>33.95 (7.48)</td>
<td>15.00-52.00</td>
<td>12.00-60.00</td>
<td>.84</td>
</tr>
<tr>
<td>Internalization</td>
<td>43.64 (4.04)</td>
<td>32.00-50.00</td>
<td>12.00-60.00</td>
<td>.80</td>
</tr>
<tr>
<td>AARRSI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institutional Events - Distress</td>
<td>43.40 (10.56)</td>
<td>19.00-66.00</td>
<td>14.00-70.00</td>
<td>.90</td>
</tr>
<tr>
<td>Institutional Events - Frequency</td>
<td>41.32 (11.35)</td>
<td>17.00-67.00</td>
<td>14.00-70.00</td>
<td>.88</td>
</tr>
<tr>
<td>Individual Events – Distress</td>
<td>16.38 (5.04)</td>
<td>8.00-30.00</td>
<td>14.00-70.00</td>
<td>.83</td>
</tr>
<tr>
<td>Individual Events – Frequency</td>
<td>19.72 (6.34)</td>
<td>8.00-36.00</td>
<td>14.00-70.00</td>
<td>.77</td>
</tr>
<tr>
<td>Cultural Events – Distress</td>
<td>17.35 (5.03)</td>
<td>8.00-34.00</td>
<td>14.00-70.00</td>
<td>.83</td>
</tr>
<tr>
<td>Cultural Events – Frequency</td>
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<td>9.00-35.00</td>
<td>14.00-70.00</td>
<td>.76</td>
</tr>
<tr>
<td>Kessler 10</td>
<td>18.67 (6.96)</td>
<td>10.00-50.00</td>
<td>10.00-50.00</td>
<td>.92</td>
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<tr>
<td>PILL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digestive Symptoms</td>
<td>20.25 (6.27)</td>
<td>9.00-45.00</td>
<td>9.00-45.00</td>
<td>.85</td>
</tr>
<tr>
<td>Dizziness Symptoms</td>
<td>5.99 (2.54)</td>
<td>3.00-15.00</td>
<td>3.00-15.00</td>
<td>.82</td>
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<tr>
<td>Chest Pain Symptoms</td>
<td>3.22 (1.58)</td>
<td>2.00-10.00</td>
<td>2.00-10.00</td>
<td>.79</td>
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<tr>
<td>Headache Symptoms</td>
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<td>2.00-10.00</td>
<td>2.00-10.00</td>
<td>.88</td>
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<tr>
<td>Flushing Symptoms</td>
<td>7.55 (2.53)</td>
<td>2.00-10.00</td>
<td>4.00-20.00</td>
<td>.55</td>
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<td>Chinese American Sample (n = 165)</td>
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<tr>
<td>Conformity</td>
<td>26.78 (5.68)</td>
<td>14.00-43.00</td>
<td>12.00-60.00</td>
<td>.75</td>
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</table>

(Continued on Next Page)
TABLE 2 (continued)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Obtained Range</th>
<th>Possible Range</th>
<th>θ</th>
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</thead>
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<tr>
<td>Dissonance</td>
<td>36.43</td>
<td>(8.43)</td>
<td>17.00-58.00</td>
<td>12.00-60.00</td>
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<tr>
<td>Immersion</td>
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<td>Internalization</td>
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<td>AARRSI</td>
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<td>Institutional Events - Distress</td>
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<td>14.00-70.00</td>
<td>.78</td>
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<td>Cultural Events – Distress</td>
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<td>(5.84)</td>
<td>3.00-10.00</td>
<td>2.00-10.00</td>
<td>.83</td>
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<td>2.00-10.00</td>
<td>.78</td>
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<tr>
<td>Kessler 10</td>
<td>18.47</td>
<td>(6.80)</td>
<td>10.00-47.00</td>
<td>10.00-50.00</td>
<td>.92</td>
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<tr>
<td>PILL</td>
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<td>Digestive Symptoms</td>
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<td>(5.87)</td>
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<td>Chest Pain Symptoms</td>
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<td>(1.77)</td>
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<td>.77</td>
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<td>Flushing Symptoms</td>
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<td>Internalization</td>
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<td>21.57</td>
<td>(6.30)</td>
<td>14.00-66.00</td>
<td>14.00-70.00</td>
<td>.76</td>
</tr>
<tr>
<td>Cultural Events – Distress</td>
<td>16.75</td>
<td>(5.84)</td>
<td>14.00-66.00</td>
<td>14.00-70.00</td>
<td>.82</td>
</tr>
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</table>

(Continued on Next Page)
<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Obtained Range</th>
<th>Possible Range</th>
<th>θ</th>
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<tbody>
<tr>
<td>Cultural Events – Frequency</td>
<td>21.73</td>
<td>(4.93)</td>
<td>12.00-33.00</td>
<td>14.00-70.00</td>
<td>.69</td>
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<tr>
<td>Kessler 10</td>
<td>19.78</td>
<td>(7.80)</td>
<td>10.00-50.00</td>
<td>10.00-50.00</td>
<td>.93</td>
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<tr>
<td>PILL</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Digestive Symptoms</td>
<td>22.08</td>
<td>(7.07)</td>
<td>9.00-42.00</td>
<td>9.00-45.00</td>
<td>.88</td>
</tr>
<tr>
<td>Dizziness Symptoms</td>
<td>6.37</td>
<td>(2.70)</td>
<td>3.00-15.00</td>
<td>3.00-15.00</td>
<td>.84</td>
</tr>
<tr>
<td>Chest Pain Symptoms</td>
<td>3.20</td>
<td>(1.82)</td>
<td>2.00-10.00</td>
<td>2.00-10.00</td>
<td>.84</td>
</tr>
<tr>
<td>Headache Symptoms</td>
<td>5.16</td>
<td>(1.82)</td>
<td>3.00-10.00</td>
<td>2.00-10.00</td>
<td>.88</td>
</tr>
<tr>
<td>Flushing Symptoms</td>
<td>8.26</td>
<td>(2.45)</td>
<td>5.00-15.00</td>
<td>4.00-20.00</td>
<td>.41</td>
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</tbody>
</table>

Note: PRIAS = People of Color Racial Identity Attitudes Scales; AARRSI = Asian American Race-Related Stress Index; PILL = Pennebaker Inventory of Limbic Languidness.
and reported that between 67% and 76% of variability in participant responses could be attributed to consistent responding in the aggregate multiethnic sample.

**Asian American Race-Related Stress Index** (AARRSI; Liang, Li, & Kim, 2004). Participants responded to this 29-item questionnaire assessing both the “frequency of” and “distress related to” three types of anti-Asian racism experiences: (a) institutional racism (14 items) (e.g., “You hear that Asian Americans are not significantly represented in management positions”), (b) cultural racism (7 items) (e.g., “Someone tells you that all Asian people look alike”), and (c) individual racism (8 items) (e.g., “Someone tells you that your Asian American friend looks just like a famous Asian celebrity”) (Appendix C). In the present study, the three subscales were used to operationally define the frequency that participants experienced institutional, cultural, and individual anti-Asian racism events, as well as the extent to which they found these events distressing.

In the original version of the AARRSI, the scale combined frequency and distress scores, wherein participant responses ranged from 1 (“this event has never happened to me or someone I know”) to 5 (“this event happened and I was extremely upset”). With permission from the AARRSI’s authors, the scoring procedures were modified so that participants first rated how frequently an event had occurred in the past year, ranging from 1 (“this event never happened to me or someone I know”) to 5 (“this event has happened frequently to me or someone I know”). Then, participants separately rated how distressing the event was, ranging from 1 = “this event did not distress me at all,” to 5 = “this event was extremely distressing.” Frequency items were summed separately from
Distress items for the institutional, cultural, and individual subscales, and higher scores indicated greater levels of respondents’ frequency of exposure to racism experiences and respondents’ related distress. Using separate measures of frequency and related distress has been common in past studies on AAPI experiences of racism (Liu et al., 2011), and was the procedure used in Harrell’s (2000) development of the *Racial and Life Experiences Scale (RaLES)*, the measure on which the AARRSI was initially modeled (Liang et al., 2004).

In the present study, theta reliability estimates were computed separately for the aggregate group and the Chinese and Korean American ethnic groups’ responses to the AARRSI subscales. Responses suggest that between 75% and 90% of variability in responses could be attributed to consistent responding for the Chinese American sample, between 68% and 88% for the Korean American sample, and between 75% and 90% for the aggregate sample (See Table 2). Similarly, in Liang et al.’s (2004) scale development study, they reported Cronbach alpha coefficients accounting for between 84% and 93% of the inter-item response variance for a sample consisting of multiple AAPI ethnic groups (i.e., an aggregate sample) for the three AARRSI subscales.

**Kessler Psychological Distress Scale** (K10; Kessler et al., 2002). Kessler et al.’s 10-item measure was used to assess non-specific psychological distress experienced in the past 30 days by means of 5-point frequency scales (1 = none of the time, 5 = all of the time) (See Appendix D). Responses were summed to create a single index score of psychological distress, with high scores indicating high psychological distress. Items included, “In the last four weeks, about how often did you feel depressed,” and “In the...
last four weeks, about how often did you feel nervous?”

To determine whether the K10 symptoms reflected a unidimensional psychological health construct or clusters of psychological symptoms, a Principal Axial Factor Analysis with varimax rotation was conducted on the 10 K10 items for the aggregate sample. A single factor emerged, suggesting that every item on the K10 characterized a general depressive symptom.

To estimate reliability, thetas were computed for the aggregate group, as well as for the ethnic subsamples. Analyses suggested that from between 92% and 93% of variability in participants’ scores could be explained by consistent responding for each ethnic group and for the aggregate group (See Table 2). In a previous study, Yip and colleagues (2008) used the K10 to measure AAPI distress in relation to anti-Asian racism. They found that 83% of K10 responses could be attributed to consistent responding for their multiethnic AAPI sample.

**Pennebaker Inventory of Limbic Languidness** (PILL, Pennebaker, 1982). The PILL consists of 54 items that measure several physical symptoms and complaints including coughing, insomnia, upset stomach, and headaches. For the present study, the PILL was used to operationally define health symptoms (See Appendix E). Participants responded on a 5-point frequency scale, ranging from 1 = “have never or almost never experienced the symptom” to 5 = “more than once every week.” Item responses were summed to create an overall index of physical health distress, where high scores indicated more physical distress. The PILL does not consist of subscales; rather, one obtains a score for the total scale.
In the interest of brevity, a subset of twenty items was taken from the 54-item PILL for use in the present study. Specifically, items reflecting symptoms that AAPI samples have previously endorsed in empirical studies were selected (see Gee et al., 2007b; Lin, 1983, 1992; Zheng et al., 1997) (See Table 3 for a list of included items).

Table 3

PILL Factor Loadings

<table>
<thead>
<tr>
<th>PILL Symptom</th>
<th>Factor 1 Digestive</th>
<th>Factor 2 Dizziness</th>
<th>Factor 3 Chest Pains</th>
<th>Factor 4 Headaches</th>
<th>Factor 5 Flushing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face flushes</td>
<td>0.07</td>
<td>-0.02</td>
<td>0.04</td>
<td>0.24</td>
<td>0.24</td>
</tr>
<tr>
<td>Tightness in chest</td>
<td>0.16</td>
<td>0.17</td>
<td>0.77</td>
<td>0.12</td>
<td>0.13</td>
</tr>
<tr>
<td>Sweat even in cold</td>
<td>0.09</td>
<td>0.12</td>
<td>0.13</td>
<td>0.07</td>
<td>0.29</td>
</tr>
<tr>
<td>Headaches</td>
<td>0.32</td>
<td>0.29</td>
<td>0.18</td>
<td>0.69</td>
<td>0.17</td>
</tr>
<tr>
<td>Feeling pressure in</td>
<td>0.27</td>
<td>0.29</td>
<td>0.20</td>
<td>0.76</td>
<td>0.23</td>
</tr>
<tr>
<td>Hot flashes</td>
<td>0.06</td>
<td>0.12</td>
<td>0.07</td>
<td>0.10</td>
<td>0.69</td>
</tr>
<tr>
<td>Racing heart</td>
<td>0.11</td>
<td>0.13</td>
<td>0.41</td>
<td>0.21</td>
<td>0.43</td>
</tr>
<tr>
<td>Dizziness</td>
<td>0.27</td>
<td>0.75</td>
<td>0.13</td>
<td>0.21</td>
<td>0.21</td>
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<tr>
<td>Leg cramps</td>
<td>0.33</td>
<td>0.26</td>
<td>0.21</td>
<td>0.26</td>
<td>0.15</td>
</tr>
<tr>
<td>Feeling faint</td>
<td>0.24</td>
<td>0.74</td>
<td>0.24</td>
<td>0.17</td>
<td>0.11</td>
</tr>
<tr>
<td>Insomnia or difficulty</td>
<td>0.26</td>
<td>0.21</td>
<td>0.22</td>
<td>0.21</td>
<td>0.20</td>
</tr>
<tr>
<td>Upset stomach</td>
<td>0.73</td>
<td>0.17</td>
<td>0.11</td>
<td>0.21</td>
<td>0.25</td>
</tr>
<tr>
<td>Indigestion</td>
<td>0.84</td>
<td>0.05</td>
<td>0.07</td>
<td>0.21</td>
<td>0.07</td>
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<tr>
<td>Heartburn or gas</td>
<td>0.65</td>
<td>0.19</td>
<td>0.14</td>
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<td>0.03</td>
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<tr>
<td>Abdominal pain</td>
<td>0.58</td>
<td>0.25</td>
<td>0.34</td>
<td>0.16</td>
<td>0.10</td>
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<tr>
<td>Sore muscles</td>
<td>0.35</td>
<td>0.11</td>
<td>0.29</td>
<td>0.13</td>
<td>0.04</td>
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<tr>
<td>Diarrhea</td>
<td>0.45</td>
<td>0.27</td>
<td>0.08</td>
<td>0.13</td>
<td>0.17</td>
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<tr>
<td>Constipation</td>
<td>0.49</td>
<td>0.25</td>
<td>0.32</td>
<td>0.01</td>
<td>0.06</td>
</tr>
<tr>
<td>Nausea</td>
<td>0.43</td>
<td>0.46</td>
<td>0.20</td>
<td>0.14</td>
<td>0.21</td>
</tr>
<tr>
<td>Chest pains</td>
<td>0.35</td>
<td>0.18</td>
<td>0.65</td>
<td>0.17</td>
<td>0.29</td>
</tr>
</tbody>
</table>

Note: High loadings are underlined, denoting the factor to which each symptom was assigned.

Moreover, to determine whether the PILL symptoms reflected a unidimensional
health construct or clusters of physical symptoms, a Principal Axial Factor Analysis with varimax rotation was conducted on the 20 selected PILL items. Five factors emerged (see Table 3). The first factor consisted of mostly digestive symptoms, the second factor consisted of dizziness symptoms, the third consisted of chest pain symptoms, the fourth consisted of headache symptoms, and the fifth consisted of flushing symptoms.

Item loadings for each factor were above .30 with the exception of three items: insomnia (item loading = .26), sweating (item loading = .29), and face flushes (item loading = .24). Although these loadings were weak, I decided to include the items since (a) this was an exploratory study, and (b) the Korean American sample was much smaller than the Chinese American sample, and thus omitting items would have weakened reliability estimates and power to detect relationships between variables.

Additionally, the item “face flushes” had equally high loadings (.24) on both the headaches factor and the flushing factor. The flushing factor was most strongly characterized by “hot flashes”, whereas the headache factor was most strongly characterized by “feeling pressure in the head.” Subsequently, “face flushes” was included on the flushing factor, since it was more consistent with the physiological experiences of hot flashes rather than headaches. Moreover, after comparing reliability estimates for the aggregate and ethnic group samples, theta estimates were higher when “face flushes” was included on the flushing factor, relative to when it was included on the headaches factor.

As is the case with other frequency measures, internal-consistency reliability analyses typically have not been conducted for the PILL in the past. However, the PILL
has been shown to have two-month test-retest reliability coefficients ranging between 79% and 83% of the explained variance when tested on a sample of college students (no racial/ethnic information for the sample was reported) (Pennebaker, 1982).

Although reliability coefficients are often not computed for frequency measures, theta analyses were conducted for each of the five PILL symptom clusters in the present study. Analyses were conducted separately for the Chinese and Korean American samples, and for the aggregate sample. Coefficients for the PILL subscales suggest that for the aggregate sample, between 79% and 88% of variability in the item responses could be attributed to consistent responding (See Table 2). For the Chinese American group, between 61% and 87% of variability in item responses could be attributed to consistent responding, and for the Korean American group, between 41% and 88% of variability in item responses could be attributed to consistent responding. Thus, the Korean American group had the lowest theta for the Flushing subscale (theta = .41). Despite the low theta coefficient, I decided to use the subscale in the analyses because of the (a) exploratory nature of the present study, (b) the small number of Korean Americans relative to Chinese Americans in the sample, and (c) the sufficient theta obtained for the Chinese Americans and the aggregate sample.

**Procedure**

Before the survey was administered, the Boston College Institutional Review Board approved the study. To recruit AAPI adults of Chinese, Korean, and/or Japanese heritage, I electronically contacted college associations (e.g., the Boston College Asian Caucus), mental health organizations (e.g., the Asian American Psychological
Association), and professional organizations (e.g., the National Association for Asian American Professionals). Moreover, a printed advertisement was posted within *Asian Fortune*, a community news publication targeting Asian Americans.

Emails and recruitment announcements introduced the study, stated criteria for participation, and provided a link to the Qualtrix website hosting the survey. As an incentive to complete the survey, participants were given the opportunity to enter a raffle to win one of two $150 gift cards. After reviewing informed consent information (See Appendix F), participants consented to participate in the study by clicking on an arrow signifying “Yes, I agree to the above information.” Then, participants were directed to the demographic questionnaire and the four previously described measures in the following order: PRIAS, AARRSI, PILL, and K10.

After completing the survey online, participants were debriefed electronically about the goals of the study, and given the researcher’s contact information in case they had questions or wanted referrals to health resources. Participants interested in entering the raffle clicked on a link that brought them to a separate survey website. They were then asked to provide an email address at which they could be contacted should they win the raffle. Thus, email information was kept separate from the participants’ survey data to maintain anonymity. Finally, participants’ personal information was destroyed after the drawing was completed.

Ultimately, for reasons described subsequently, the final sample used for the main data analyses (*N* = 203) consisted of approximately 51.8% of the originally consenting participants (*N* = 392). Some participants were excluded because of (a) ambiguities in
their ethnicity or because they were not born in the US, (b) insufficient samples sizes, and (c) not completing the measures.

**Ethnic/Nativity ambiguities.** Four participants (1%) were excluded because they did not specify their ethnic heritage and 26 (6.6%) were excluded because they self-identified as immigrants. Thus, a total of 30 potential participants were eliminated because they did not meet ethnicity or nativity inclusion criteria.

**Insufficient sample size.** Moreover, 6 participants (1.5%) identified as bi-ethnic (i.e., being of Chinese and Korean heritage, or Korean and Japanese heritage), and 26 identified as Japanese Americans (6.6%). Both bi-ethnic and Japanese American participants were excluded because they did not comprise large enough groups to permit valid statistical comparisons. Additionally, gender was added to the main analyses as a predictor variable, wherein gender groups were compared. Because only two participants identified as transgender, both of these participants were also excluded since they did not comprise a large enough group for valid comparisons with females and males. Thus, a total of 34 potential participants were eliminated due to insufficient sample size.

**Incomplete data.** Incomplete data occurred in several ways. Some participants \((N = 105; 26.8\%)\) were excluded from analyses because they did not complete any of the measures. Also, 20 (5.1%) dropped out after completing the PRIAS. To determine whether these 20 participants’ PRIAS data should be included in the PRIAS reliability analyses, t-tests were conducted to determine whether the 20-person “PRIAS Only” sample significantly differed in demographic characteristics or PRIAS data from the larger sample that had provided complete scale data. Results indicated there were no
significant differences, and thus the 20 participants’ PRIAS data were included in the PRIAS reliability analyses.
Chapter 4

Results

Preliminary Analyses

In the present study, the primary variables of interest were the participants’ four racial identity statuses as measured by the PRIAS, frequency and distress ratings related to three types of racism experiences as measured by the AARRSI, physical health symptoms as measured by the PILL, and psychological symptoms as measured by the K10. Prior to conducting the canonical correlation analyses to investigate the main hypotheses, the data were assessed for missing responses and outliers. Additionally, analyses were conducted to test for violations of multivariate assumptions.

Linearity. The assumption of linearity is that predictor and criterion variables are related to each other such that paired comparisons of them reveal shared regression lines and significant correlations. Scatterplots of predictor-outcome variable pairs and correlations between predictor-outcome pairs indicated that all predictors were linearly related to criterion variables (See Table 4 for correlations between predictor and criterion variables).
Table 4

Pearson Correlations Among the Predictor and Criterion Variables \((N = 203)\)

<table>
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<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
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<td>-.05</td>
<td>.07</td>
<td>-.15*</td>
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<tr>
<td>16. FLU</td>
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<td></td>
<td>-.24**</td>
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<tr>
<td>17. AGE</td>
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</tr>
</tbody>
</table>

Note: CON = Conformity attitudes, DIS = Dissonance attitudes, IME = Immersion / Emersion attitudes, INT = Internalization Attitudes. IF = Institutional Racism - Frequency, IS = Institutional Racism - Distress, MF = Individual Racism - Frequency, MS = Individual Racism – Distress, CF = Cultural Racism - Frequency, CS = Cultural Racism - Distress, K10 = Psychological Symptoms, DIG = Digestive Symptoms, DIZ = Dizziness Symptoms, CHE = Chest Pain Symptoms, HEA = Headache Symptoms, FLU = Flushing Symptoms, and AGE = Participant Age in Years. * = Significant at the .05 level, ** = Significant at the .01 level.
**Homoscedasticity.** The assumption of homoscedasticity is that there is similar variability among predictor variable scores. To test whether predictors met this assumption, regression analyses of pairs of predictor and criterion variables were conducted. Scatterplots of residuals (i.e., indicators of error) and predictor values were used to assess for systematic patterns of error variance, and revealed residuals to be randomly distributed, with no relation to independent variables, thus indicating homoscedastic relationships between predictor and outcome variables.

**Normality.** The assumption of normal distributions of the independent variables was assessed by evaluating the shapes of the histograms of the independent variables, as well as by examining levels of skewness. The scores for six out of ten independent variables were roughly normally distributed. However, the PRIAS Internalization subscale score was slightly negatively skewed, which indicated a tendency for the aggregate sample to agree with the subscale items. Additionally, the frequency score for individual types of racism events and the distress score for cultural types of racism events were both moderately positively skewed and the distress score for individual types of racism events was severely positively skewed. Positive skewness in all three cases indicates a tendency for participants to report low levels of these variables.

Outliers for the problematic predictor variables were analyzed to assess whether they were contributing to skewness. However, after moving outliers toward the scores in the distribution that they were closest to (i.e., winsoring outliers), their skewness statistics did not improve. Subsequently, four transformations were conducted on the winsored
data in an effort to create normal distributions for the four independent variables. However, after using the transformed variables in the main analyses, results were found to be difficult to interpret, as the meaning of the transformed data was conceptually ambiguous. As a result, I decided to use the winsored dataset, rather than the transformed data, despite potential bias from skewness.

**Multicollinearity.** The assumption of multicollinearity posits that independent variables are not too strongly correlated with each other, which would make it difficult to interpret each predictor’s individual variance contribution. Multicollinearity was examined by using the variance inflation factors (VIF) and tolerance levels, which indicated how and whether independent variables were too strongly correlated with each other. VIF for the race-related stress frequency and distress scores ranged between 3.07 and 4.31, and tolerance ranged from 0.23 to 0.33. VIF for the four PRIAS subscales ranged from 1.34 to 1.77, whereas tolerance ranged from 0.56 to 0.75. Moreover, Pearson correlations between independent variables were not excessively high. Therefore, VIF and Tolerance level as well as Pearson correlations indicated that relationships between predictors would not suppress contributions of variance for each predictor.

Additionally, Pearson correlations were used to assess relationships between the one continuous demographic variable, age, and the independent variables (See Table 4). Age was not strongly correlated with any of the AARRSI distress or frequency subscale scores or with the PRIAS subscale scores. Thus, I determined that the relationships found between predictor and criterion variables sets were not due to participants’ ages.
A series of one-way between-groups analyses of variance (ANOVAs) was also conducted to assess whether there were any between-group differences among categorical demographic variables when PRIAS scores and AARRSI frequency and distress subscale scores were the criterion variables. No significant mean differences were found with respect to parental immigration status (i.e., U.S.-born parents vs. immigrant parents), or by geographic region in which participants currently resided. Thus, I determined that relationships between predictor and criterion variables could not be explained by underlying group differences between parental immigration status or current geographic residence.

However, group differences in PRIAS and AARRSI scores were found with respect to gender and social class. Specifically, participants who grew up in low-income households differed from middle class, upper middle class, and upper class groups with respect to Immersion scores \( F(3, 198) = 4.83, p < .01 \). Also, males differed from females with respect to distress related to institutional racism events \( F(1, 201) = 15.20, p < .001 \), frequency of institutional racism events \( F(1, 201) = 4.02, p < .05 \), cultural racism related distress \( F(1, 201) = 7.31, p < .01 \), frequency of cultural racism events \( F(1, 201) = 3.83, p < .05 \), Dissonance scores \( F(1, 201) = 4.49, p < .05 \), and Immersion scores \( F(1, 201) = 9.65, p < .01 \). Hence, gender and social class were both dummy-coded and entered into the predictor variable set to assess for demographic effects.

Since gender groups differed with respect to male and female participants, gender was dummy coded such that 0=men and 1=women. Similarly, since social class groups differed with respect to having been raised in a low-income household, or having been
raised in higher income households (including middle class, upper middle class and upper class households), social class was dummy coded such that 0=participants raised in low-income households and 1=participants raised in middle class to upper class households.

Tests of Hypotheses and Research Questions

**Hypothesis 1.** Self-reported frequency of anti-Asian racism experiences and distress, regardless of type (i.e. institutional, cultural, and individual) will predict high levels of physical and psychological symptoms.

To test this hypothesis, a canonical correlation analysis was performed in which gender (dummy coded: 0=men, 1=women), social class (dummy coded: 0=low-income, 1=not low-income), ethnicity (dummy coded: 0=Chinese, 1=Korean), and the six race-related event scores (i.e., frequency and distress scores for the three types of anti-Asian racist events) were the predictor set, and the six health scores (i.e., digestive distress, dizziness, chest pains, headache symptoms, flushing symptoms, and psychological distress) were the criterion set of variables.

The full model across all functions was statistically significant using the Wilk’s lambda ($\lambda = .556$) criterion, $F (54, 963.21) = 2.18, p < .001$. Because Wilk’s $\lambda$ represents the unexplained variance in the model, $1- \lambda$ indicates the effect size or amount of explained variance for the full model. Six canonical correlations were found. Thus, the full model with all six functions included explained 44.4% of the shared variance between the predictor and criterion variable sets. Functions were interpreted if they accounted for at least 9% of the variance between predictor and criterion sets and/or the model containing them was significant. The first canonical correlation explained 26.31%
of the overlapping variance, the second explained 12.43% of the overlap of the remaining variance, the third explained 7.41% of the overlap of the remaining variance, the fourth explained 4.59% of the overlap of the remaining variance, the fifth explained 1.33% of the overlap, and the sixth explained 1.04% of the overlap.

With one function removed, the model was still significant. With two functions removed, the model was no longer significant at the \( p < .05 \) level. However, more than 9% of overlapping variance was explained by the successive functions. With three functions removed, the model was no longer significant and less than 9% of overlapping variance was explained by the remaining functions. Therefore, I concluded that Function 1, \( F (54, 963.21) = 2.17, \ p < .001 \), was statistically significant, and that Function 2, \( F (40, 826.63) = 1.38, \ p = .06 \), though not statistically significant, should also be interpreted due to the significant proportion of overlapping variance explained. However, with Functions 1 and 2 removed, Function 3, \( F (28, 686.48) = 1.03, \ p = .48 \), Function 4, \( F (18, 540.71) = .76, \ p = .75 \), Function 5, \( F (10, 384.00) = .46, \ p = .91 \), and Function 6, \( F (4, 193.00) = .51, \ p = .73 \), were not statistically significant, nor did they account for more than 9% of the variance. Hence, the remaining Functions were not interpreted.

A summary of the results for the interpreted canonical functions appears in Table 5. The first column shows standardized canonical function coefficients (analogous to factor loadings) for the predictor and criterion sets of variables. The second column shows structure coefficients \( (r_s) \), which are the correlations between variables and the latent construct underlying the relevant variate (i.e., the predictor or criterion set of variables) contributing to each function. The third column shows canonical correlations (i.e., the
amount of variance shared between the pairs of variates). The fourth column shows the
percentages of variance explained by individual variables within a variable set summed
across functions.

Table 5
Summary of Canonical Analysis for Race-Related Stress Predicting Health

<table>
<thead>
<tr>
<th>Variable</th>
<th>Function 1</th>
<th>Function 2</th>
<th>Function 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef</td>
<td>$r_s$</td>
<td>$r^2_s$%</td>
</tr>
<tr>
<td>Gender</td>
<td>-.75</td>
<td>-.77</td>
<td>59.22</td>
</tr>
<tr>
<td>Social Class</td>
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<td>.06</td>
<td>0.41</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>-.13</td>
<td>-.24</td>
<td>5.57</td>
</tr>
<tr>
<td>Inst-F</td>
<td>-.33</td>
<td>-.52</td>
<td>26.89</td>
</tr>
<tr>
<td>Inst-D</td>
<td>.26</td>
<td>-.50</td>
<td>25.35</td>
</tr>
<tr>
<td>Indiv-F</td>
<td>-.02</td>
<td>-.48</td>
<td>23.50</td>
</tr>
<tr>
<td>Indiv-D</td>
<td>-.50</td>
<td>-.62</td>
<td>38.32</td>
</tr>
<tr>
<td>Cult-F</td>
<td>-.27</td>
<td>-.55</td>
<td>30.12</td>
</tr>
<tr>
<td>Cult-D</td>
<td>.24</td>
<td>-.48</td>
<td>23.33</td>
</tr>
<tr>
<td>Digestive</td>
<td>.23</td>
<td>-.61</td>
<td>36.84</td>
</tr>
<tr>
<td>Dizziness</td>
<td>-.69</td>
<td>-.91</td>
<td>82.79</td>
</tr>
<tr>
<td>Chest Pains</td>
<td>-.08</td>
<td>-.60</td>
<td>35.52</td>
</tr>
<tr>
<td>Headaches</td>
<td>-.34</td>
<td>-.79</td>
<td>63.04</td>
</tr>
<tr>
<td>Flushing</td>
<td>-.18</td>
<td>-.59</td>
<td>35.05</td>
</tr>
<tr>
<td>Psychological</td>
<td>-.16</td>
<td>-.61</td>
<td>36.84</td>
</tr>
</tbody>
</table>

Note: Coef = Standardized Canonical Function Coefficient; $r_s$ = Structure Coefficient; $r^2_s$ = Squared Structure Coefficient; $h^2_s$% = Communality Coefficient; $R^2_c$ = Squared Canonical Correlation. Structure Coefficients greater than 0.30 are underlined; Communality Coefficients greater than 30% are underlined. Inst-F = Institutional Racism – Frequency; Inst-S = Institutional Racism – Distress; Indiv-F = Individual Racism – Frequency; Indiv-D = Individual Racism – Distress; Cult-F = Cultural Racism – Frequency; Cult-D = Cultural Racism – Distress

Structure coefficients are the focus of my interpretations because they are
generally considered to be more stable than function coefficients and less susceptible to
issues of multicollinearity. Moreover, I used a minimum structure coefficient cutoff score of plus or minus .30 to indicate significance. Structure coefficients that share the same sign are positively related to each other.

**Function 1**

**Demographic Variables.** Gender was a significant variable in the predictor set ($r_s = -.77$), indicating that this function characterized the relationships between race-related stress and health and being of male rather than female gender. Gender (59.22%) accounted for the most variance in the predictor variate.

**Race-Related Stress.** All race-related stress variables were significantly negatively correlated ($r_s$) with the predictor variate, but positively related to each other. In descending order, the most strongly related experiences of race-related stress were (a) distress from individual racism encounters ($r_s = -.62$), (b) frequency of cultural racism encounters ($r_s = -.55$), (c) frequency of institutional racism encounters ($r_s = -.52$), (d) distress from institutional racism encounters ($r_s = -.50$), (e) frequency of individual racism encounters ($r_s = -.48$), and (f) distress from cultural racism encounters ($r_s = -.48$). Thus, the predictor variate seemed to emphasize that being of male rather than female gender was related to experiencing high levels of distress from individual racism encounters (e.g., being told Asians are smarter in math than other racial groups because of their genes) and frequency of cultural racism encounters (e.g., being treated as a perpetual foreigner). Indeed, the squared structure coefficients for Function 1 indicated that distress related to individual racism encounters (38.32%) accounted for the largest
portion of variance in the race-related stress canonical variate, followed by frequency of cultural racism encounters (30.12%).

**Health Outcomes.** For the health outcomes criterion set, all six symptoms were significantly negatively correlated with the variate, but positively correlated with each other. In descending order, (a) dizziness \( r_s = -.91 \) was the most correlated with the variate, followed by (b) headaches \( r_s = -.79 \), (c) digestive distress \( r_s = -.61 \), (d) psychological symptoms \( r_s = -.61 \), (e) chest pains \( r_s = -.60 \), and (f) flushing symptoms \( r_s = -.59 \). The squared structure coefficients for this criteria canonical variate revealed that dizziness (82.79%) and headaches (63.04%) accounted for the most variance in this pattern.

**Relationships between the predictors and criteria.** Together, the canonical variates (i.e., Function 1) indicated that high levels of distress resulting from individual racism events \( r_s = -.63 \) and more frequent experiences of cultural racism \( r_s = -.56 \), were related to being of male rather than female gender \( r_s = -.77 \) and to high levels of dizziness \( r_s = -.88 \) and headaches \( r_s = -.87 \), although all of the race-related stresses and physical and mental health outcomes were significantly related to the function. Thus, Function 1 does appear to provide support for hypothesis 1, in that all types of race-related stress were related to health outcomes, though the pattern of relationships was related to being of male rather than female gender.

**Function 2**

**Demographic Variables.** Social class and ethnicity were significant variables in the predictor set, indicating that this function was related to being Korean American and
being raised in low-income households. Ethnicity (47.75%) accounted for the most variance of the two demographic variables in the predictor variate.

**Race-Related Stress.** None of the six race-related stress variables was significantly correlated ($r_s$) with the predictor variate. Thus, this Function described relationships between the demographic predictor variables and the criterion variate excluding the other predictors.

**Health Outcomes.** For the health outcomes criterion set, the canonical variate reflected significant positive correlations with digestive distress ($r_s = .41$) and flushing ($r_s = .33$) and significant negative correlations with chest pains ($r_s = -.34$). Therefore, when symptoms of chest pain were high, digestive distress and flushing were low, and, conversely, when symptoms of digestive distress and flushing were high, symptoms of chest pains were low. The squared structure coefficients for this criterion canonical variate revealed that digestive distress (16.77%) accounted for the most variance in the pattern.

**Relationships between the predictors and criteria.** Together, the canonical variates (i.e., Function 2) indicated that being raised in a low-income household ($r_s = -.38$) and being Korean American ($r_s = 0.69$) was related to fewer chest pains, and higher levels of flushing and digestive symptoms. Thus, Function 2 does not provide support for hypothesis 1, as race-related stress was not related to health outcomes. However, it does suggest some evidence for group differences in symptomatology between social class and ethnic groups, though indirectly.

**Summary**
The overall canonical correlation analysis for hypothesis 1 revealed two functions: “Individual Racism Distress and Health,” and “Ethnic and Social Class Differences in Health.” The Individual Racism Distress and Health Function suggested that experiencing all types of distressing and/or frequent race-related events, particularly individual racism events, were related to experiencing several types of physical and psychological distress and being of male rather than female gender. The second function suggested that social class and ethnic group membership were related to particular health experiences. Being raised in a low-income household and being Korean American were related to low levels of chest pains, and high levels of flushing and digestive symptoms.

Across the two functions, the percent of variance explained ($h^2$) indicated that the most important variables were dizziness (83.43%), headaches (71.44%), gender (62.61%), digestive distress (53.62%), ethnicity (53.32%), and Individual Racism distress (39.21%). Therefore, I concluded that individual racism, physical health, gender differences, and ethnicity most strongly characterized the sample’s responses.

Overall, results from the canonical correlation analysis supported Hypothesis 1. As predicted, all six types of race-related stress were associated with more psychological and physical distress symptoms, though this function was related to being of male and not female gender. Thus, my results also revealed an added dimension with regard to how gender contributes to the race-related stress and health relationship, as well as the possible salience of ethnic group and social class in symptom presentation.

**Hypothesis 2.** Racial identity statuses (i.e., Conformity, Dissonance, Immersion, and Internalization) will predict physical and psychological symptoms. Specifically,
Conformity and Dissonance will be related to more physical and psychological health symptoms, and Immersion and Internalization will be related to fewer physical and psychological health symptoms.

To test hypothesis 2, a canonical correlation analysis was performed in which the same dummy codes used in hypothesis 1 for gender, ethnicity, and social class were included in the predictor set. Also, the four PRIAS racial identity scores were included in the predictor set, whereas the six types of health outcomes again served as the criterion set. The racial identity scores consisted of the Conformity, Dissonance, Immersion, and Internalization subscales. The criterion set consisted of the six health scores (i.e., digestive distress, dizziness, chest pains, headaches, flushing, and psychological distress) that were also used for hypothesis 1.

The full model across all functions was statistically significant using the Wilk’s lambda ($\lambda = .50$) criterion, $F (342, 894.63) = 3.33, p < .001$. Six canonical functions were found. Thus, the full model with the six functions included explained 50.0% of the shared variance between the predictor and criterion variable sets. The first canonical correlation accounted for 31.12% of the overlapping variance, the second explained 16.10% of the overlap of the remaining variance, the third explained 8.21% of the overlap of the remaining variance, the fourth explained 3.30% of the overlap of the remaining variance, the fifth explained 1.17% of the overlap, and the sixth explained .23% of the overlap.

With one function removed, the model was still significant. With two functions removed, the model remained significant. However, with three functions removed, the
model was no longer significant and the percent of variance explained was less than 9%. Therefore, I concluded that Function 1, $F(42, 894.63) = 3.33, p < .001$, and Function 2, $F(3, 766.00) = 2.05, p < .001$, were statistically significant, but Function 3, $F(2, 637.74) = 1.31, p = .17$, Function 4, $F(12, 510.92) = .77, p = .68$, Function 5, $F(6, 388.00) = .46, p = .84$, and Function 6, $F(2, 195.00) = .22, p = .80$, were not statistically significant and did not account for a significant amount of variance. Hence, Functions 3, 4, 5, and 6 were not interpreted.

A summary of the results for the first two canonical functions appears in Table 6, including the standardized canonical function coefficients, structure coefficients ($r_s$), canonical correlations, and percentages of variance explained by each variable within its variable set summed across functions (i.e., the communality coefficients).

**Function 1**

**Demographic Variables.** Gender was a significant variable in the predictor set ($r_s = .56$) indicating that this function characterized relationships between racial identity and health and was related to being of female rather than male gender. Gender accounted for 31.24% of the variance in the predictor variate.

**Racial Identity.** Among the racial identity statuses in the predictor variate, Dissonance ($r_s = .85$) and Immersion ($r_s = .69$) were significantly positively correlated with the variate, suggesting a theme of “Anxiety and Awareness of Racial Stimuli.” The squared structured coefficients for the Function revealed Dissonance (72.53%) accounted for the most variance in the predictor variate, followed by Immersion (47.49%). Thus,
being of female gender was related to reporting high levels of Dissonance (i.e., confusion) and Immersion (i.e., psychological withdrawal).

Table 6
Summary of Canonical Analysis for Racial Identity Predicting Health

<table>
<thead>
<tr>
<th>Variable</th>
<th>Function 1</th>
<th></th>
<th></th>
<th>Function 2</th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>Coef</td>
<td>$r_s$</td>
<td>$r^2_s$%</td>
<td>Coef</td>
<td>$r_s$</td>
<td>$r^2_s$%</td>
</tr>
<tr>
<td>Gender</td>
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<td>.56</td>
<td>31.24</td>
<td>-.64</td>
<td>-.65</td>
<td>42.54</td>
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<td>Social Class</td>
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<td>0.06</td>
<td>.09</td>
<td>.06</td>
<td>0.39</td>
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<td>2.61</td>
<td>-.20</td>
<td>-.18</td>
<td>3.36</td>
</tr>
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<td>Conformity</td>
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<td>.13</td>
<td>1.75</td>
<td>-.10</td>
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<td>7.89</td>
</tr>
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<td>Dissonance</td>
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<td>.61</td>
<td>.41</td>
<td>16.43</td>
</tr>
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<td>Immersion</td>
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<td>.69</td>
<td>47.49</td>
<td>-.29</td>
<td>-.10</td>
<td>1.02</td>
</tr>
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<td>Internalization</td>
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<td>-.48</td>
<td>-.61</td>
<td>37.61</td>
</tr>
<tr>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>Digestive</td>
<td>-.32</td>
<td>.52</td>
<td>26.77</td>
<td>-.10</td>
<td>-.28</td>
<td>7.99</td>
</tr>
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<td>-.70</td>
<td>-.58</td>
<td>33.40</td>
</tr>
<tr>
<td>Chest Pains</td>
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<td>.65</td>
<td>42.35</td>
<td>.04</td>
<td>-.10</td>
<td>1.08</td>
</tr>
<tr>
<td>Headaches</td>
<td>.07</td>
<td>.63</td>
<td>39.69</td>
<td>-.26</td>
<td>-.35</td>
<td>11.91</td>
</tr>
<tr>
<td>Flushing</td>
<td>.22</td>
<td>.63</td>
<td>39.39</td>
<td>-.26</td>
<td>-.25</td>
<td>6.46</td>
</tr>
<tr>
<td>Psychological</td>
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<td>.87</td>
<td>75.66</td>
<td>.98</td>
<td>.42</td>
<td>17.78</td>
</tr>
</tbody>
</table>

Note: Coef = Standardized Canonical Function Coefficient; $r_s$ = Structure Coefficient; $r^2_s$ = Squared Structure Coefficient; $h^2_s$% = Communality Coefficient; $R^2_c$ = Squared Canonical Correlation. Structure Coefficients greater than |.30| are underlined; Communality Coefficients greater than 30% are underlined.

Health Outcomes. In the health outcomes criterion set, all health symptoms were positively and significantly correlated with the criterion variate and with each other. In particular, (a) psychological symptoms were most strongly correlated within the criterion set ($r_s = .87$), followed by (b) dizziness ($r_s = .72$), (c) chest pains ($r_s = .65$), (d) headaches
(r_s = .63), (e) flushing (r_s = .63), and (f) digestive distress (r_s = .52). Thus, the theme of the criterion set seemed to reflect “High Psychological Distress and Physical Distress.” The squared structured coefficients for the Function revealed that psychological distress (75.66%) accounted for the most variance in this canonical variate.

**Relationships between the predictors and criteria.** Together, the pair of canonical variates indicates that Dissonance (r_s = .85) and Immersion (r_s = .69) were related strongly to all health symptoms, and in particular psychological symptoms (r_s = .87), dizziness (r_s = .72), and chest pains (r_s = .65), as well as being of female gender (r_s = .56). Function 1 suggested a theme of “Anxiety and Awareness of Racial Stimuli and Health,” and, therefore, partially supports hypothesis 2. As hypothesized, Dissonance was related to higher levels of health symptoms, whereas contrary to my hypothesis, Immersion was also related to higher levels of such health symptoms. However, both patterns were related to being of female rather than male gender.

**Function 2**

**Demographic Variables.** Of the three demographic variables, gender was significantly negatively correlated with the predictor set for Function 2 (r_s = -.65). Thus, the function was related to being of male rather than female gender, and gender accounted for 42.54% of variance within the predictor variate.

**Racial Identity.** The predictor canonical variate for Function 2 seemed to reflect “Psychologically Distressing Racial Anxiety” in that being of male gender was related to Internalization levels that were significantly low, and Dissonance levels that were significantly high; conversely, when Internalization was high, Dissonance was low.
Internalization accounted for the most (37.61%) variance within the predictor variate, whereas Dissonance followed (16.43%). Thus, lack of racial understanding and introspective processing strategies, accompanied by high racial anxiety and repressive coping strategies, appeared to be the theme of this variate.

**Health Outcomes.** Within the health outcome criterion variate, dizziness and headaches were each significantly negatively correlated with the variate, whereas psychological symptoms were significantly positively correlated with the criterion set. The squared structure coefficients for Function 2 indicated that dizziness (33.40%) and psychological symptoms (17.78%) accounted for the largest portions of variance in this criterion canonical variate. Therefore, when symptoms reflecting dizziness and headaches were low, psychological distress was high.

**Relationships between the predictors and criteria.** Together, the canonical variates in Function 2 indicate that being of male rather than female gender \((r_s = -.65)\), and endorsing high levels of Dissonance attitudes \((r_s = .41)\) in combination with low levels of Internalization attitudes \((r_s = -.61)\), was related to high psychological symptoms \((r_s = .42)\), but low physical symptoms, including dizziness \((r_s = -.58)\), and headaches \((r_s = -.35)\). Thus, Function 2 canonical variates in combination suggest a theme of “Psychologically Distressing Racial Anxiety,” and provide some support for Hypothesis 2, as high levels of Dissonance attitudes were related to psychological symptoms, but not physical symptoms. Moreover, low Internalization levels were associated with less psychological distress as predicted, however they were also associated with physical
distress, contrary to my hypothesis. Also, these patterns were related to being of male gender rather than female gender.

**Summary**

The overall canonical correlation analysis for hypothesis 2 revealed two functions: “Anxiety and Awareness of Racial Stimuli and Health” and “Psychologically Distressing Racial Anxiety.” The first function indicated that racial anxiety and awareness of racial stimuli were related to psychological and physical distress and being of female rather than male gender. The second function indicated that racial anxiety without racial awareness was related to psychological distress and being of male gender, but negatively related to physical symptoms.

Across the two functions, the percent of variance explained ($h^2$) indicated that the most important variables in the solution were psychological symptoms (93.44%), Dissonance (88.96%), dizziness (84.99%), and gender (73.78%). Therefore, I concluded that Dissonance attitudes, psychological distress, dizziness, and gender differences most strongly characterized the responses of the men and women in the sample.

Overall, results from the canonical correlation analysis partially supported hypothesis 2. As predicted, Dissonance was associated with more psychological and physical distress, though for being of female rather than male gender. Additionally, being of female gender was associated with high levels of Immersion attitudes and more psychological and physical distress. Moreover, low Internalization attitudes were associated with more psychological distress and being of male gender, but they were also associated with fewer physical symptoms, unexpectedly.
**Hypothesis 3.** Self-reported racism experiences (i.e., frequency and distress related to institutional, cultural, and individual racism experiences) will predict racial identity statuses (i.e., Conformity, Dissonance, Immersion, and Internalization). Specifically, frequencies and distress from racism experiences will predict Immersion and Internalization, but not Conformity or Dissonance.

To test Hypothesis 3, a third canonical correlation analysis was performed wherein the same dummy codes for gender, ethnicity, and social class were included in the predictor set. The six race-related stress variables were entered in the predictor set as well, whereas the criterion variable set consisted of the four racial identity statuses. The race-related stress variables included frequency and distress measures for experiences of institutional racism, individual racism, and cultural racism. The racial identity variables were Conformity, Dissonance, Immersion, and Internalization.

The full model across all functions was statistically significant using the Wilk’s lambda ($\lambda = .42$) criterion, $F (36, 713.76) = 5.16$, $p < .001$. Four canonical functions were found. Thus, the full model with the four functions included explained 58.0% of the shared variance between the predictor and criterion variable sets. The first canonical correlation accounted for 47.74% of the overlapping variance, the second explained 10.07% of the overlap of the remaining variance, the third explained 7.32% of the overlap of the remaining variance, and the fourth explained 3.51% of the overlap.

With one function removed, the model was still significant. With two functions removed, it was still significant. However with three functions removed, the model was no longer significant and the percent of variance explained was less than 9%. Therefore,
I concluded that Function 1, $F (36, 713.76) = 5.16, p < .001$, and Function 2, $F (24, 554.56) = 1.80, p < .05$, were statistically significant, but Function 3, $F (14, 384.00) = 1.57, p = .08$, and Function 4, $F (6, 193) = 1.17, p = .32$, were not statistically significant and did not account for a significant amount of variance. Hence, Functions 3 and 4 were not interpreted. A summary of the results for the first two canonical functions appears in Table 7, including the standardized canonical function coefficients, structure coefficients ($r_s$), canonical correlations, and communality coefficients ($h^2_s$%).

**Function 1**

**Demographic Variables.** Gender was significantly correlated with the predictor variate ($r_s = -.34$), indicating that the relationships between race-related stress and racial identity described in Function 1 were related to being of male rather than female gender. Gender accounted for the 11.83% of variance in the variate.

**Race-Related Stress.** Of the race-related stress variables, the predictor canonical variate consisted of significant negative correlations among all six race-related stress variables, though the two variables involving institutional racism events accounted for most variance suggesting a theme of “Institutional Racism Encounters.” In descending order of importance, the predictors were (a) distress resulting from institutional racism encounters ($r_s = -.97$), (b) frequency of institutional racism encounters ($r_s = -.85$), (c) distress from cultural racism encounters ($r_s = -.69$), (d) distress from individual racism encounters ($r_s = -.66$), (e) frequency of cultural racism encounters ($r_s = -.51$), and (f) frequency of individual racism encounters ($r_s = -.39$). The squared structure coefficients indicated that distress related to institutional racism encounters accounted for the largest
(93.90%) amount of variance in the pattern. Thus, being of male gender was related to all of the types of race-related stress, in that when one type of race-related stressor was high, so were the other types.

Table 7
Summary of Canonical Analysis for Race-Related Stress Predicting Racial Identity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Function 1</th>
<th></th>
<th></th>
<th>Function 2</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef</td>
<td>$r_s$</td>
<td>$r^2_s%$</td>
<td>Coef</td>
<td>$r_s$</td>
<td>$r^2_s%$</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.12</td>
<td>-0.34</td>
<td>11.83</td>
<td>-0.13</td>
<td>-0.14</td>
<td>1.85</td>
</tr>
<tr>
<td>Social Class</td>
<td>0.16</td>
<td>0.27</td>
<td>7.40</td>
<td>-0.05</td>
<td>-0.09</td>
<td>0.86</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>0.03</td>
<td>-0.11</td>
<td>1.23</td>
<td>-0.17</td>
<td>-0.33</td>
<td>10.96</td>
</tr>
<tr>
<td>Inst-F</td>
<td>-0.15</td>
<td>-0.85</td>
<td>72.59</td>
<td>0.38</td>
<td>-0.04</td>
<td>0.19</td>
</tr>
<tr>
<td>Inst-D</td>
<td>-0.68</td>
<td>-0.97</td>
<td>93.90</td>
<td>0.21</td>
<td>0.04</td>
<td>0.13</td>
</tr>
<tr>
<td>Indiv-F</td>
<td>0.09</td>
<td>-0.39</td>
<td>15.21</td>
<td>-0.43</td>
<td>-0.34</td>
<td>11.63</td>
</tr>
<tr>
<td>Indiv-D</td>
<td>-0.18</td>
<td>-0.66</td>
<td>44.09</td>
<td>0.74</td>
<td>-0.02</td>
<td>0.03</td>
</tr>
<tr>
<td>Cult-F</td>
<td>-0.05</td>
<td>-0.51</td>
<td>26.32</td>
<td>-0.56</td>
<td>-0.74</td>
<td>54.17</td>
</tr>
<tr>
<td>Cult-D</td>
<td>-0.04</td>
<td>-0.69</td>
<td>48.16</td>
<td>-0.73</td>
<td>-0.52</td>
<td>27.04</td>
</tr>
<tr>
<td>$R^2_c$</td>
<td>0.33</td>
<td>0.18</td>
<td>3.31</td>
<td>-1.06</td>
<td>-0.92</td>
<td>83.91</td>
</tr>
<tr>
<td>Conformity</td>
<td>-0.32</td>
<td>-0.58</td>
<td>33.87</td>
<td>0.11</td>
<td>-0.38</td>
<td>14.21</td>
</tr>
<tr>
<td>Dissonance</td>
<td>-0.79</td>
<td>-0.94</td>
<td>87.42</td>
<td>-0.24</td>
<td>-0.22</td>
<td>4.62</td>
</tr>
<tr>
<td>Immersion</td>
<td>-0.13</td>
<td>-0.09</td>
<td>0.81</td>
<td>-0.37</td>
<td>-0.06</td>
<td>0.30</td>
</tr>
</tbody>
</table>

Note: $\text{Coef} =$ Standardized Canonical Function Coefficient; $r_s =$ Structure Coefficient; $r^2_s =$ Squared Structure Coefficient; $h^2_s \% =$ Communality Coefficient; $R^2_c =$ Squared Canonical Correlation. Structure coefficients greater than |.30| are underlined. Communality Coefficients greater than 30% are underlined. Inst-F = Institutional Racism – Frequency; Inst-S = Institutional Racism – Distress; Indiv-F = Individual Racism – Frequency; Indiv-D = Individual Racism – Distress; Cult-F = Cultural Racism – Frequency; Cult-D = Cultural Racism – Distress.

**Racial Identity.** For the racial identity criterion set, the canonical variate reflected significant negative correlations for both Immersion ($r_s = -.94$) and Dissonance ($r_s = -.58$), which were both positively related to each other. Thus, an “Awareness of
Racial Stimuli and Racial Anxiety” dimension characterized the function. Immersion accounted for the most variance in the pattern (87.42%), whereas Dissonance accounted for a weaker 33.87%. Neither Conformity nor Internalization was significant in the pattern.

**Relationships between the predictors and criteria.** Together, the pair of canonical variates suggested that racism events, particularly distressing ($r_s = -.97$) and frequent ($r_s = -.85$) institutional racism events, were positively related to Immersion or psychological withdrawal ($r_s = -.94$) and Dissonance ($r_s = -.58$) or racial anxiety, as well as being of male gender ($r_s = -.34$). Neither Conformity nor Internalization was related to race-related events. Thus, Function 1’s theme seemed to reflect “Institutional Racism Awareness and Anxiety.” Function 1 partially supports Hypothesis 3 in that Immersion levels were related to race-related stress and being of male gender; similarly, high Dissonance levels were related to race-related stress, though not as strongly as Immersion, and Dissonance levels were also related to being of male gender. Moreover, as predicted, Conformity was not related to race-related experiences; however, contrary to my hypothesis, neither was Internalization.

**Function 2**

**Demographic Variables.** Of the three demographic variables in the predictor variate, ethnicity was the only significant variable in the pattern ($r_s = -.33$), signifying that Function 2 was related to being of Chinese ethnic heritage. Ethnicity accounted for 10.96% of variance in the pattern.
Race-Related Stress. Within the predictor set, the canonical variate reflected significant negative correlations most strongly for frequent ($r_s = -.74$) and distressing ($r_s = -.52$) cultural racism encounters, followed by frequent individual racism encounters ($r_s = -.34$). Thus, the variate was characterized by “Perpetual Foreigner Treatment and Individual Racism Encounters.” The squared structure coefficients for this predictor canonical variate revealed that frequency of cultural racism encounters accounted for the most variance (54.17%). Hence, being Chinese American rather than Korean American was related to reporting frequent and distressing encounters with cultural racism events (e.g., being treated as a perpetual foreigner), and also to reporting frequent encounters with individual racism.

Racial Identity. The racial identity criterion variate characterized a strong “Internalized Racism” dimension. Conformity ($r_s = -.92$) and Dissonance ($r_s = -.38$) were both significantly negatively correlated with the variate, whereas Immersion and Internalization were not. Based on the squared structure coefficients, Conformity accounted for the most variance in the pattern (83.91%), followed by Dissonance (14.21%). Thus, when conformity to White culture was high, so was Dissonance.

Relationships between the predictors and criteria. Together, the second pair of canonical variates indicated that frequent ($r_s = -.74$), and distressing experiences of cultural racism ($r_s = -.52$), and frequent experiences of individual racism ($r_s = -.34$), were related most strongly to Conformity ($r_s = -.92$) and Dissonance ($r_s = -.38$) attitudes and to being of Chinese ethnicity ($r_s = -.33$). Thus, Function 2 suggested a theme of “Internalized Perpetual Foreigner Racism,” and did not provide support for Hypothesis 3.
Contrary to my hypothesis, high Dissonance and Conformity were related to race-related stress, whereas Immersion and Internalization were not related to race-related stress.

**Summary**

The overall canonical analysis revealed two functions, “Institutional Racism Awareness and Anxiety” and “Internalized Perpetual Foreigner Racism.” The first indicated that encountering racism events, particularly institutional racism events (e.g., recognizing that few U.S. History books include AAPI history), were significantly positively related to a desire to be with other AAPIs (e.g., Immersion), as well as feelings of confusion and anxiety about being an AAPI (i.e., Dissonance), and also related to being of male gender.

The second function indicated that encountering cultural and individual racism events, and particularly cultural events, was significantly and positively related to Conformity and Dissonance attitudes, and being of Chinese ethnicity. Specifically, reporting treatment as perpetual foreigners was related to reporting internalized racism attitudes and confusion about one’s AAPI group membership and being of Chinese ethnicity.

Across the two functions, the percent of variance explained ($h^2$) indicated that the most important variables were distress resulting from institutional racism (94.03%), Immersion attitudes (92.05%), frequency of cultural racism experiences (80.49%), and Conformity attitudes (87.22%). Thus, I concluded that institutional racism encounters, Immersion attitudes, cultural racism encounters, and Conformity attitudes most strongly characterized the responses of the men and women in the sample.
Overall, results from the analysis provide partial support for Hypothesis 3. The obtained canonical solutions revealed that Immersion attitudes were related to race-related variables as predicted, and being of male gender. Contrary to my prediction, Dissonance attitudes were related to race-related variables, too. Also contrary to my hypothesis, Conformity attitudes were related to race-related events, though this pattern was related to being Chinese American rather than Korean American specifically.
Chapter 5

Discussion

Growing evidence indicates that anti-Asian racism experiences occur and are distressing and likely relate to physical and/or psychological health symptoms (Carter, 2007; Gee et al., 2007a, 2007b; Lee, Wong, & Alvarez, 2009; Sue et al., 2007). Some researchers suggest that due to cultural orientations toward health, AAPIs are more likely to experience both physical and psychological symptoms when distressed (Ladhani & Lee, 2009; Lin & Cheung, 1999) rather than one or the other, but few AAPI racism studies have assessed for both types of symptoms. Additionally, racial identity theory posits that racial identity statuses are shaped by racism and, in turn, affect racism awareness, attitudes, and coping strategies. Thus, different racial identity statuses may be associated with particular types of racism experiences, as well as varying levels of distress (Alvarez & Helms, 2001; Helms, 1997).

Thus, to address the questions of whether and how race-related experiences and racial identity statuses are related to each other, as well as to physical and psychological health symptoms, the current study investigated the relationships between anti-Asian racism events, racial identity statuses, psychological symptoms, and five types of physical health symptoms for U.S.-born East Asian Americans. Responses from a sample of Chinese and Korean American adults were analyzed to assess the following research questions: (a) How are frequent and distressing anti-Asian racism experiences (i.e., institutional, cultural, and individual) related to physical and psychological symptoms?; (b) How are racial identity statuses related to physical and psychological
How are frequent and distressing anti-Asian racism experiences (i.e., institutional, cultural, and individual) related to racial identity statuses? Each research question was investigated with respect to three sociodemographic group variables: ethnicity (Chinese and Korean), gender (men and women), and social class (low-income and not low-income). In the following sections, findings related to these questions are discussed, wherein themes summarizing the relationships between the predictors and criterion variables with the highest correlations are described for each of the three hypotheses. Additionally, methodological limitations of the study, research implications, and clinical implications for psychotherapy and health interventions with AAPIs are also discussed.

**How Frequent and Distressing Anti-Asian Racism Experiences Relate to Health**

One focus of the present investigation centered on the notion that anti-Asian racism exists, is stressful, and therefore is related to poorer health. Poor health was defined in terms of both psychological and physical symptoms, because Asian cultural orientations typically view health as consisting of combined physical and psychological components (Lin & Cheung, 1999). That is, theorists argue that when experiencing distress, AAPIs are likely to experience both psychological and physical symptoms.

Therefore, Hypothesis 1 proposed that experiences of anti-Asian racism, specifically the frequency of encounters and the distress associated with such encounters, would be related to higher levels of physical or somatic symptoms (i.e., digestive symptoms, dizziness, headaches, chest pains, and flushing), as well as psychological
symptoms. Three different types of anti-Asian racism encounters were assessed, though Hypothesis 1 predicted that all types would be related to all health outcomes.

The results summarized in Table 5 and illustrated in Figures 1a and 1b revealed two statistically significant patterns characterizing race-related events and health outcomes. One pattern was labeled “Individual Racism-Related Health” and primarily described the racism experiences and health symptoms of Chinese and Korean American men. The second pattern, “Ethnic and Social Class Differences in Health,” pertained to Korean American men and women who were raised in low-income households.

**Individual Racism-Related Health**

The first pattern (Figure 1a) indicated that being of male rather than female gender and frequent and distressing exposure to race-related events, particularly when the racism events were focused on them as individuals, were related to high levels of all six types of health symptoms.

![Racism Experiences](image)

- Individual
- Institutional
- Cultural

Gender
- Male

![Health Symptoms](image)

- Dizziness
- Headaches
- Psychological
- Digestive
- Chest Pains
- Flushing

*Figure 1a.* Being of male rather than female gender was related to positive relationships between all racism experiences and all health symptoms.
This finding was consistent with the hypothesized relationships, as well as previous studies that have indicated similar results, with regard to the positive relationships between psychological or physical symptoms and experiences of anti-AAPI bias (Gee et al., 2007a, 2007b; Hwang & Goto, 2009). It is also consistent with race-related stress theory, which asserts that the effects of racism are harmful (Carter, 2007; Sue et al., 2007), as this finding indicates that more frequent and more distressing racism events were indeed associated with poorer physical and psychological health.

This first pattern, defined by relationships between racism experiences and related health symptoms, also was related to being of male rather than female gender, suggesting that women may be affected by race-related stress differently. Previous researchers have underscored the necessity for conducting gender-specific racism research, contending that the intersection of racial and gender stereotypes and identities likely affect how men and women perceive and cope with race-related experiences (Chen, 2009; Iwamoto & Liu, 2010). Such intersections may result in certain racist events being more salient for men or women, depending on differences in their underlying gender socialization experiences.

Thus, in the current study, it is possible that the AARSSI items disproportionately elicited AAPI male stereotypes rather than AAPI female stereotypes, and, therefore, were more salient for men. For example, being told “Asians have assertiveness problems,” may elicit feelings about one’s self as an AAPI, and also as an AAPI man, and may be more distressing for men as a result. Comparatively, few AARRSI items would have elicited AAPI female stereotypes (e.g., tiger mothers, exoticization, subservience) (Hall,
2009), perhaps resulting in different (i.e., maybe weaker) relationships between race-related stress and health for women.

Importantly, both psychological and physical symptoms were significantly related to the racism events, supporting the notion that U.S.-born Chinese and Korean American men experience race-related stress through a combination of psychological and physical symptoms, consistent with Asian health orientations (Lin & Cheung, 1999). These findings suggest that although U.S.-born AAPI men are socialized in a predominantly White American cultural system, they may operate from an Asian health orientation when encountering race-related stress.

**Ethnic and Social Class Differences in Health**

The second identified pattern (Figure 1b), “Ethnic and Social Class Differences in Health,” suggested that being raised in low-income households, as well as being of Korean heritage, were related to more digestive and flushing symptoms, and fewer chest pains.

![Figure 1b.](image)

*Figure 1b.* Being Korean American rather than Chinese American, and being raised in a low-income rather than higher-income household, was related to both more and fewer physical symptoms.

These findings did not provide support for Hypothesis 1, but suggest differences in symptom presentation among social class and ethnic groups. Specifically, being a
Korean American woman or man from a low-income background was related to experiencing particular symptoms that were not found for the higher income and Chinese American participants. Thus, by attending to the sociodemographic backgrounds of each AAPI ethnic group, more specific and accurate measurements of symptoms can be found.

Summary

Overall, I found support for Hypothesis 1 through results consistent with previous empirical research as well as Carter’s race-related stress theory (2007) and Sue’s microaggressions theory (2007). Symptom endorsement supported Asian cultural orientations toward health (Lin & Cheung, 1999). Further, I found an unexpected gender dimension, in which AARRSI race-related stress was related to being of male rather than female gender and health symptoms. This finding underscores the necessity of accounting for intersecting gender and racial identities when assessing AAPI racism experiences (G.A. Chen, 2009; Hall, 2009).

How Racial Identity Statuses Related to Health

Another central focus of this investigation was whether AAPIs manifest a racial identity, which instructs racial awareness, racial perceptions, and coping strategies when they encounter race-related stimuli (e.g., racism). Thus, depending on how sophisticated one’s racial identity may be, this identity may be related to different levels of distress (Helms, 1997). For example, if AAPIs cope with racial stimuli through flexible and integrated information processing strategies, they may not experience as much distress, compared to AAPIs who cope using ambivalent, repressive, and avoidant strategies. In Hypothesis 2, I proposed that the less sophisticated racial identity statuses, Conformity
and Dissonance, would be positively related to health symptoms, whereas the more developed and integrated racial identity statuses, Immersion and Internalization, would be negatively related to health symptoms. Health symptoms included the same physical and psychological symptoms investigated in Hypothesis 1.

The results summarized in Table 6 and illustrated in Figures 2a and 2b revealed two statistically significant patterns. Both patterns indicated that racial identity statuses were related to health symptoms, and that relationships differed according to racial identity sophistication level and gender.

**Anxiety, Awareness of Racial Stimuli, and Health**

In the first pattern (Figure 2a), racial identity profiles characterized by high racial confusion (i.e., Dissonance) and high idealization of the AAPI group (i.e., Immersion), were related to high levels of all of the health symptoms, particularly psychological symptoms and dizziness, as well as being of female gender. Thus, this pattern provided partial support for my hypothesis, as high levels of Dissonance were related to all health outcomes, but contrary to my hypothesis high levels of Immersion were related to high levels of symptoms, too. Moreover, these patterns were related to being of female rather than male gender.
Figure 2a. Being of female rather than male gender was related to positive relationships between Dissonance, Immersion, and all health symptoms.

Although I did not hypothesize that high levels of Immersion (i.e., psychological withdrawal into one’s own group) would be related to poorer indicators of health, Helms’s (1997) racial identity theory does posit that Immersion attitudes are characterized by dichotomous thinking and hypervigilance toward racial stimuli, which potentially contribute to distress. Moreover, some other empirical studies have found that AAPI Immersion attitudes were associated with significantly more distress than Conformity and Internalization and less distress than Dissonance, as suggested by the current pattern (Concepcion, Kohatsu, & Yeh, 2012; Iwamoto & Liu, 2010). Thus, although Immersion is a more racially aware and mature racial identity status than Conformity or Dissonance, women endorsing high levels of Immersion in combination with Dissonance continued to experience race-related stimuli as distressing, and manifested such distress through physical and psychological symptoms.

Of additional importance, racial identity profiles high in both Dissonance and Immersion were related to being of female gender, indicating that female participants
endorsed simultaneously ambivalent and idealizing attitudes about AAPIs. This combination of attitudes may suggest that these women were transitioning from ambivalence toward a more idealizing, Immersion-dominant racial identity profile. As a result, the positive relationship between Dissonance and physical and psychological distress may be due to the combination of women’s ambivalence as well as their idealizing, hypervigilance and dichotomous thinking with regard to racial information.

Further, some research suggests that AAPI boys and girls may be socialized differently by their parents and by their school experiences, which may also inform their developing racial identity (Qin, 2009). For example, Qin found that for immigrant Chinese adolescents, girls were often monitored closely after school by their parents, who feared they would “act wildly,” by spending time with their male peers. In contrast, Chinese American girls felt pressure to dress as “Americans” (i.e., in fashionable clothing), and to hide their filial piety values while they were with their peers at school. Thus, it is possible that AAPI women may have been socialized by their parents and their peers to think of themselves as having their parents’ Asian cultural values, as well as their peers’ White American values. As a result, they may have been socialized to foster alternating cultural identities, adhering to cultural values of their Asian parents in some situations and their White peers in others. For the AAPI women in this study, such gendered socialization may have contributed to their holistic health, and possibly to their racial confusion (i.e. Dissonance) as well as their racial pride (i.e. Immersion).

Psychologically Distressing Racial Anxiety
The second pattern was related to being of male gender, and focused on “Psychologically Distressing Racial Anxiety.” Racial identity profiles characterized by low self-actualization with respect to racial dynamics (e.g., Internalization) and high racial anxiety and confusion (e.g., Dissonance), were associated with low physical distress, but high psychological distress, and being of male gender.

Figure 2b: Being of male rather than female gender was related to combinations of low Internalization and high Dissonance, and fewer physical symptoms and more psychological symptoms.

These results suggested that experiencing racial anxiety and confusion about one’s AAPI group membership was not accompanied by flexible or integrative processing strategies or proactive racial awareness, and was related to being of male gender. In other words, AAPI men relied on less sophisticated racial identity coping strategies, wherein they may have attempted to repress racial information rather than processing and understanding stimuli within a sociopolitical context. Without the aid of more integrative and flexible processing, high levels of Dissonance were thus experienced as psychologically stressful, but not physically stressful (Helms, 1997).
This discrepancy between physical and psychological symptoms may indicate that AAPI men with high Dissonance and low Internalization profiles are more likely to experience distress through dualistic health orientations, which are allegedly more typical in White culture, rather than holistic orientations that are said to characterize AAPIs’ health status. Of note, this finding is consistent with previous empirical research suggesting that less sophisticated racial identity statuses are associated with a preference for White American cultural values rather than AAPI cultural values (Yeh, Carter, & Pieterse, 2004). Moreover, the relationship between Dissonance attitudes and preference for non-AAPI cultural values is also consistent with racial identity theory, which posits that Dissonance-dominant AAPIs are characterized by a lack of understanding of the racial dynamics as they pertain to their racial/cultural group (Helms & Cook, 1999).

Furthermore, Qin (2008) suggested that AAPI boys are socialized through adolescence differently from AAPI girls. Specifically, within a sample of Chinese American immigrant adolescent boys, she found that the majority of boys were given more independence with their time after school, and often felt less influence from their parents as compared to their female peers. Moreover, their male peers encouraged them to show masculinity through White American markers of masculinity, including involvement in sports, video games, and other nonacademic activities.

Thus, in the current study, it is possible that AAPI men were socialized with more individual freedom compared to the AAPI women, and that this freedom fostered more adherence to White American rather than Asian cultural values. As a result, AAPI men may have experienced more confusion about what it means to be Asian, rather than racial
idealization, which was more salient for the AAPI women. Moreover, since being of male gender was related to presenting with psychological symptoms and not physical health symptoms, this dualistic health presentation may have been related to male participants’ tendency towards White American cultural values rather than traditionally Asian cultural values, including health orientation.

**Summary**

Overall, I found partial support for Hypothesis 2 in a manner that is consistent with Helms’s racial identity theory and empirical research. As hypothesized, high levels of Dissonance were associated with poorer physical and psychological health (i.e., more symptoms), and also as hypothesized, low levels of Internalization were associated with more psychological distress rather than less. Contrary to hypotheses, low levels of Internalization were related to high levels of physical symptoms, and high levels of Immersion were associated with poorer physical and psychological health. Together, these results suggest that engaging with race-related material continues to be distressing for U.S.-born AAPI individuals, despite their potentially having developed more sophisticated strategies for processing such material.

The results for Hypothesis 2 also illustrate gender differences in distress presentation. Although being of female rather than male gender was related to expressing distress through combinations of psychological and physical symptoms, being male was related to expressing distress through psychological symptoms rather than physical symptoms. These results may be explained by dominant racial identity processing and gender socialization that affect how women and men conceptualize distress. Specifically,
it is possible that women experienced interrelated physical and psychological symptoms because they were more likely to carry traditional Asian cultural orientations that allow women to experience somatic distress, whereas men experienced exclusively psychological symptoms because they carried dualistic health orientations.

**How Frequent and Distressing Anti-Asian Racism Experiences Relate to Racial Identity**

The final premise of this study was that racial identity statuses (e.g., racial awareness, attitudes, and coping strategies) are informed by experiences of anti-Asian racism (Helms, 1997). Specifically, Hypothesis 3 proposed that internalized racism statuses (i.e., Conformity and Dissonance) were not related to frequent and distressing race-related events, but that the more sophisticated statuses (i.e., Immersion and Internalization) would be related to such events.

The results summarized in Table 7 and illustrated in Figures 3a and 3b revealed the two statistically significant patterns that were found. The first was labeled “Institutional Racism Awareness and Anxiety,” and the second was named “Internalized Cultural Racism Experiences.”

**Institutional Racism Awareness and Anxiety**

In the first pattern (Figure 3a), frequent and distressing racism encounters, and in particular institutional events (i.e., racism occurring through agencies that restrict the choices, rights, mobility, and access of AAPIs), were related to high levels of AAPI idealization (i.e., Immersion), high levels of ambivalence about being an AAPI (i.e., Dissonance), and to being of male gender.
Figure 3a. Being of male rather than female gender was related to positive relationships between all racism experiences, especially institutional experiences, and high levels of Dissonance and Immersion.

This pattern was in part consistent with my hypothesis, in that Immersion attitudes were related to race-related events, but contrary to my hypothesis, in that Dissonance was related as well. The positive relationship between Immersion and race-related stress is theoretically consistent with Helms’s racial identity theory (Helms, 1997; Helms & Cook 1999) and, moreover, has been supported by empirical research with AAPIs (Alvarez & Helms, 2001; Concepcion, Kohatsu, & Yeh, 2012). Because Immersion is characterized by a tendency to view racism as a central theme within one’s environment, it is theoretically consistent that high levels of Immersion would be associated with recognizing frequent and distressing racist events. Moreover, according to theory, high levels of Immersion are particularly likely to be related to strong awareness of historical and systemic anti-Asian racism (i.e., Institutional Racism) (Helms, 1997). Thus, it follows that participants who were operating from a race-centric
perspective would be likely to observe racism not only in relational interactions, but the larger sociopolitical context as well.

Contrary to my hypothesis, Dissonance was also related to race-related events. Although not hypothesized, this relationship is supported by Helms’s racial identity theory. Specifically, Helms posits that growing awareness of one’s lack of fit within the White American world and recognition of racism experiences triggers ambivalence about internalized racism attitudes and confusion about being a member of the AAPI group (Helms & Cook, 1999). Thus, it follows that, in the present study, high levels of Dissonance were related to reports of frequent and distressing accounts of racism in the participants’ environments.

Of additional importance, high levels of Dissonance were also accompanied by high levels of Immersion. Thus, it is also possible that although male participants endorsed ambivalence about their racial identity, their racial identity development may have been transitioning toward a more sophisticated, Immersion-dominant profile. Because Immersion is associated with more racial awareness, it thus follows that participants transitioning between Dissonance- and Immersion-dominant profiles would perceive increasingly frequent and distressing racism experiences.

Other empirical studies have examined the relationships between racism experiences and Dissonance and they have reported conflicting results. Some studies suggest no relationship between Dissonance and race-related events, contending that because of limited racial awareness participants for whom Dissonance is dominant do not recognize racist experiences (Concepcion et al., 2012). However, other studies indicate
that Dissonance is related to high race-related stress (Chen et al., 2006), wherein AAPIs recognize increasingly racist environmental stimuli, but lack the processing skills or understanding to facilitate successful coping. The current findings indicate that high levels of Dissonance were associated with frequent and distressing racism events, more so than Conformity or Internalization, but less so than Immersion.

The identified pattern additionally revealed another gender dimension, in that the relationship between experiences of institutional racism and Dissonance and Immersion were related to being of male rather than female gender. These gender specific results suggest that the relationships among Immersion and Dissonance and Institutional Racism may be different for women than for men. This Function thus reflects gender themes that are similar to the results found for Hypothesis 1 and 2, regarding the importance of gender and racial identity intersections; they suggest that the suggested relationship between institutional racism experiences and racial identity attitudes may have been affected by gender salient items on the AARRSI.

**Internalized Perpetual Foreigner Racism**

The second pattern, “Internalized Perpetual Foreigner Racism,” indicated that for Chinese Americans, disregarding gender, frequent and distressing racism experiences, particularly cultural racism experiences, were related to internalized racism attitudes (i.e., Conformity and Dissonance).
Figure 3b. Being Chinese American rather than Korean American was related to positive relationships between Individual and Cultural Racism Experiences, and high levels of Conformity and Dissonance.

As noted earlier, theoretical and empirical evidence does support the relationship between Dissonance and racism experiences (G.A. Chen et al., 2006; Helms & Cook, 1999). However, the positive relationship between Conformity and race-related experiences is somewhat more ambiguous. Theoretically, high levels of Conformity should be associated with obliviousness to socioracial concerns, including examples of anti-AAPI racism in one’s environment (Helms, 1997). However, AAPIs dominant in Conformity are theorized to maintain this obliviousness by minimizing and distorting racial experiences that disfavor White groups (Helms & Cook, 1999).

In this function, Conformity was strongly correlated with experiences of cultural racism in particular. The Cultural Racism scale consisted of items that reflected examples of AAPIs being treated as less American than their White peers (e.g., being asked where one is “really” from) (Liang et al., 2004). Thus, one explanation for the unexpected
strong positive relationship between Cultural Racism events and Conformity attitudes is that participants recognized that they were often treated as foreigners and differently from their White peers. To cope with this perceived difference in treatment, they rejected AAPI values to create more distance from foreign and exotic stereotypes. Indeed, Kibria (1999) described East Asian AAPIs, who in their quest to be seen as less foreign, rejected and avoided interactions with other AAPIs, preferring White values instead (i.e., Conformity).

Kibria (1999) also added that without a meaningful AAPI identity, Conformity-dominant participants associated being AAPI with exoticism and “foreignness.” With respect to the present study, participants who were dominant in Conformity may have chosen to distance themselves from other AAPIs, whom they perceived as “foreign”, and “other.” Instead, they may have preferred to surround themselves with White Americans and to conform to White American values. Specifically, Kibria noted that many of the Conformity dominant AAPI women that she interviewed were distressed by the traditional patriarchal roles that reportedly characterize Asian ethnic cultures. As a result, these women sought out peer groups whom they perceived to engender more egalitarian gender roles (i.e., White Americans). Thus, in the present study, participants with high levels of Conformity and Dissonance may have negatively associated AAPIs with “foreign and exotic” Asian cultural values, including collectivism, filial piety, and patriarchal systems (Ladhani & Lee, 2009; Lau, Lum, Chronister, & Forrest, 2006; Markus & Kitayama, 1991; Suh, 2007). In contrast, these participants may have been
attracted to their White American peers’ presumed cultural values of individualism, somewhat egalitarian gender roles, and Judeo-Christian values.

Also important to note is that the pattern between Conformity and Dissonance and race-related events was specific to Chinese American men and women, rather than Korean American men and women. Ethnic differences in racial identity have been supported by theoretical research, which posits that phenotypic and sociohistorical differences foster different meanings of being AAPI (Nadal, 2004; Sue et al., 1999). However, empirical research has not yet explored whether there are differences in how Chinese and Korean Americans perceive Perpetual Foreigner racism.

One possible explanation of the differences between Korean and Chinese American racism experiences in the present study is that nuances in immigration histories and acculturation processes have resulted in different experiences participants relative to being perceived as a foreigner (Takaki, 1989). Chinese Americans, who immigrated to the U.S. in the early 19th century, were the first American immigrants to arrive from Asia; and therefore, they may be particularly vigilant about being considered foreign relative to Korean Americans. Moreover, the U.S.’s involvement in the Korean War in the 1950s has fostered a different experience of racial, ethnic and acculturative socialization for Korean Americans, unique from Chinese American experiences (Norris, 2013; Takaki, 1989). Thus, because of differing socio-historical backgrounds, Chinese and Korean Americans may encounter different racism experiences, as well as different ideas of themselves as Asian Americans.
In addition, it is also possible that Chinese American participants endorsing high levels of Conformity were particularly vigilant of perpetual foreigner racism because they themselves harbored internalized perpetual racism stereotypes about their own Chinese heritage. Although non-AAPIs have long stereotyped Korean and Chinese cultures, the content of such stereotypes has differed in nature, which has ostensibly carved out ethnic-specific experiences of anti-AAPI racism. Korean culture, for example, has often been negatively associated with U.S. military dependence pertaining to the Korean War, pop music, as well as international adoption (Chace, 2012; Lee & Miller, 2009; Norris, 2013). Alternatively, Chinese culture has been associated with xenophobic stereotypes of communism, human rights violations, gender inequality, and economic competition, which usually are amplified by changing political trends (Lee, Wong, & Alvarez, 2008). In particular, anti-Chinese sentiment is often related to changing U.S. economic viability, and allegedly has served as the impetus for violent acts of racism, including the murder of Vincent Chin in 1982 (Lee, Wong, & Alvarez, 2009; W. Liu, Murakami, Eap, & Hall, 2009; Takaki, 1989). Thus, it is possible that the U.S.’s current financial dependence on China may have augmented long-held stereotypes of Chinese Americans as foreign and exotic (U.S. Department of the Treasury, 2012), not only for non-AAPIs, but for those Chinese Americans themselves who harbor internalized racism attitudes.

Finally, it is again important to note that cultural racism experiences were related to Chinese American profiles high in Conformity, as well as Dissonance. It is thus also possible that although Chinese American participants endorsed preference for elements of White culture rather than AAPI culture, they may have also endorsed ambivalence about
increasingly salient racial oppression. Therefore, Chinese Americans endorsing high levels of both Conformity and Dissonance may have recognized subtler experiences of cultural racism, because of growing awareness of racial stimuli.

Overall, I found partial support for Hypothesis 3. Consistent with racial identity theory and empirical evidence, Dissonance and Immersion were related to experiences of Institutional Racism for Korean and Chinese American men. Unexpectedly, Conformity attitudes were related to Cultural Racism experiences for Chinese American men and women and these results suggest one explanation for how internalized racism is dealt with. Thus, my results suggested that race-related encounters are related to Conformity, Dissonance, and Immersion, but not Internalization.

**General Summary of Results**

For the three hypotheses I investigated, there was mixed evidence concerning the models on which I based my hypotheses. The models were (a) racism experiences would be related to increased psychological and physical health symptoms; (b) less sophisticated racial identity statuses would be related to increased psychological and physical symptoms, whereas more sophisticated statuses would be related to fewer psychological and physical symptoms; and, (c) racism experiences would be related to more sophisticated racial identity statuses.

Evidence in support of the model of racism experiences suggested that such experiences were positively related to poorer health outcomes and being of male gender. Mixed evidence was in support of the model of racial identity and health, in that being of female gender was related to combinations of more and less sophisticated racial identity
attitudes, which were related to health distress. In contrast, being of male gender was related to high levels of less sophisticated racial identity attitudes in combination with low levels of more sophisticated racial identity attitudes, as well as more psychological symptoms and fewer physical symptoms. There was mixed evidence in support of the model of racism experiences relating to racial identity attitudes as well. Being of male gender was related to patterns of racism experiences, in particular institutional events, relating to combinations of less sophisticated (i.e., Dissonance) and more sophisticated racial identity attitudes (i.e., Immersion). Additionally, being Chinese American rather than Korean American was related to racism experiences, particularly cultural events, and higher levels of less sophisticated racial identity attitudes (i.e., Conformity and Dissonance), contrary to my model.

Thus, in support of my first model and AAPI health theory, all of the racism experiences were revealed as being stressful and related distress was experienced through holistic symptom expression, though this pattern was related to being of male rather than female gender. Moreover, racial identity sophistication did implicate differing levels of health outcomes and racism experiences; however, my second and third models assigning relationships according to “more sophisticated” and “less sophisticated” levels of racial identity development was not consistently reflected in my results. Instead, combinations of “more sophisticated” and “less sophisticated” attitudes were often together related to racism experiences or health symptoms. Moreover, participants with high levels of “less sophisticated” racial identity attitudes (i.e. Conformity and Dissonance combinations) did recognize and experience stress related to racism experiences, contrary to my third
model. These findings suggest that racial identity profiles are dynamic and complex and that AAPIs physical and mental health may be characterized by simultaneous and contradicting racial attitudes. Finally, several patterns were related with demographic variables, including ethnicity, gender, and income level, suggesting salient group differences.

**Methodological Limitations**

Several methodological limitations should be considered when interpreting the findings from the present study. These limitations concern (a) research design, (b) measurement concerns, and (c) sample size.

**Research design**

Research design issues pertain to the structure of the way in which my survey was administered. The specific design problematic issues pertain to (a) administration of measures and (b) sociodemographic characteristics of participants.

**Administration of measures.** First, the manner in which the measures were administered may have influenced participants’ responses. Specifically, after completing the demographic questionnaire, participants were administered the remaining measures in the following order: (a) PRIAS, (2) AARRSI, (3) PILL, and (4) K10. The order that measures were administered was somewhat consistent with theoretical assumptions in that racism experiences are supposed to precede physical and psychological symptoms. However, because of priming effects, participants’ responses on the PRIAS possibly raised awareness of racism events, which then aroused physical and psychological distress. Thus, health symptoms might have been manifested differently had they been
assessed first, though the manner in which they were administered was aligned with my theoretical model (i.e., that racism experiences would precede symptoms). Future studies of AAPI racial identity, race-related stress, and health symptoms should include attempts to account for possible testing effects, perhaps by counterbalancing the administration of measures (Heppner, Kivlghan, & Wampold, 1999).

**Unexplored participant characteristics.** No data were collected with respect to participants’ sexual orientations. Considering the multiple levels of oppression that AAPI sexual minorities encounter, this is an important group difference that was not accounted for within the current analyses (Chung & Singh, 2009). Specifically, it is possible that, similar to gender, race-related experiences and racial identity are affected by intersections with sexual identity. Thus, future studies should account for multiple identities by investigating various aspects of individuals’ sociodemographic self-perceptions and life experiences.

**Measurement Concerns**

All measures used in this study were based on participants’ self-reports. As a result, responses were subject to response bias, wherein participants may have responded in manners consistent with confirmation/disconfirmation of the hypotheses that they assumed the researcher was investigating (Heppner et al., 1999). For example, participants may have guessed that the research hypotheses proposed a positive relationship between racism distress and health symptoms, and, consequently, responded with overly high ratings of racism experience distress and recent health symptoms. In
addition to these general concerns, there were concerns about specific aspects of the measures or measurement process that merit some comment.

PRIAS. The PRIAS Internalization scale had a positively skewed distribution, wherein participants were likely to agree with attitudes assessing integrated and flexible racial identity attitudes. Previous AAPI research has likewise reported positively skewed Internalization distributions on the PRIAS (Alvarez et al., 2004; Chen et al., 2006), suggesting that AAPIs may find the Internalization items to be socially desirable, and as a result, endorse these items more positively than other attitudes. Because of the skewed data, Internalization might not have been related to other variables as hypothesized, because there was little variability in participants’ responses (Tabachnik & Fidell, 2007).

AARRSI. The measure used to assess participants’ race-related experiences (i.e., the AARRSI) asked them to respond with respect to events that occurred at any point in the participant’s lifetime. However, recollections of such experiences may be less accurate over time as compared to if they had been assessed immediately after an event occurred (Liang et al., 2004). As a result, AARRSI responses might have reflected lower or higher distress levels than were experienced during the actual racism encounters. Therefore, the relationships that were found between racism experiences and health, and racism experiences and racial identity, may be somewhat stronger or weaker than actual relationships between these constructs, depending on how participants’ recollections of the events exaggerated or minimized their actual experience.

The K10. Furthermore, in the current study, the K10 was used as a proxy for general psychological distress. Although it has been theorized and empirically validated
as a non-specific measure of psychological distress for AAPIs (Kessler et al., 2002; Yip et al., 2008), a factor analysis, conducted for the present study suggested that the K10 was a unidimensional measure of depression for this sample. Previous research using other measures of psychological distress have suggested that discrimination is related to a broad range of DSM symptoms including post-traumatic stress, anxiety, and substance dependence, as well as depressive symptoms (Gee, Spencer, Chen, Yip, & Takeuchi, 2007; Yoo et al., 2010).

Although my findings suggest that there were relationships among racism experiences and racial identity development and depressive symptoms, they do not provide information about race-related variables and other DSM symptoms. To explore such relationships further, future studies of AAPI psychological symptoms as related to anti-Asian racism and racial identity should use more extensive measures of psychological distress. For the present study, it seems reasonable to conclude that when the racial variables (i.e., racial identity and experiences of racist events) were related to psychological distress, they were related to a specific kind of symptom—depression.

The PILL. Finally, use of the PILL in published research with AAPIs has been limited; hence, more information is necessary regarding the validity of scores on the scale for AAPI samples. In particular, the PILL consists of no theoretical subscales, nor has a factor analysis been used with AAPI groups in previous racism research. The current study used factor analysis to determine whether the physical symptoms were unidimensional and found five factors for the aggregate sample, which indicated that it was not. The total sample and the Chinese Americans reliably responded to the items
comprising each of the five identified factors. However, the Korean American sample was less consistent, though also much smaller in size. Because the findings of this study indicate that using PILL factors does indicate more specific relationships with racism variables, future investigation should also check for underlying symptom factors, as they likely are associated with racial constructs.

**Sampling Bias**

In the present study, disproportionately sized subgroups of the sample were compared to determine whether there were between-group differences that might have affected the obtained results. For example, the aggregate sample was majority female ($N=140$), raised in higher income households ($N=176$), and Chinese American ($N=152$). Although gender, social class, and ethnic group differences were investigated, it is possible results may have been affected by sampling bias, wherein the larger groups’ characteristics were better represented by the obtained results. If the results were sample-size dependent, then perhaps different relationships would have been found for each demographic group if each sample had been larger. Particularly for Korean Americans and male participants, different relationships may have been found given a larger participant pool. However, the canonical correlation is likely to have been robust to sample size differences depending on variability of subgroups, and, therefore, may have protected against such bias to some unknown extent.

Of note, the majority of the sample also consisted of college graduates and Mid-Atlantic residents. However, analyses of variance indicated that education level and geographic residence did not differ with regard to any of the racism experience or racial
identity variables. It is thus likely that recruitment efforts disproportionately targeted AAPIs with higher education, and who were living in the Mid-Atlantic region, rather than a more balanced sample. Altogether, the study results may be biased toward women regardless of ethnicity, and college educated Chinese Americans, who grew up in higher or at least not lower income households, and were currently living in the Mid-Atlantic.

Such homogeneity of sample characteristics limits the generalizability of the results with respect to Korean American men, who grew up in low income households, who did not graduate from college, and who are currently living outside of the Mid-Atlantic. The current results are likely influenced by participants’ race-related experiences and racial identity socialization in several ways that are determined by such demographic variables (Heppner et al., 1999). For example, geographic residence may influence racial identity socialization because of racial climate, and gender may influence race-related experiences through gendered types of racism encounters. Further, social class seemingly affects the types of racism experiences one encounters. Enduring multiple layers of racial and social class disadvantage may affect how one feels about belonging to the AAPI group. Finally, differences in college education may determine how an AAPI perceives and recognizes racism in his or her academic environment, as well as how racial identity is elicited in one’s career context.

Another form of sampling bias occurred in the form of participant recruitment. Because the participants self-selected into the study, their responses may be biased due to interest in the study constructs (Chen et al., 2006). Specifically, after reading the informed consent, participants were informed that the study was about racism
experiences, racial attitudes, and health. Thus, those participants who felt anxious about these topics may have been dissuaded once they knew the study content, whereas participants who felt engaged by the constructs may have been motivated to participate. Moreover, volunteer participants are often “better educated, have a higher need for social approval, are more intelligent, are less authoritarian, appear to be better adjusted, and seek more stimulation than non-volunteers” (Heppner et al., 1999, p. 323; Rosenthal & Rosnow, 1969). Thus, the study’s results may not have adequately reflected the racial discrimination and health experiences of more diverse community samples.

Research Implications

Future researchers should continue to explore how individual, institutional, and cultural racism experiences relate to physical and psychological health for AAPI groups, noting how specific events may be more or less salient for different subgroups. In particular, the relationship between race-related experiences and health remains ambiguous for AAPI women. Although some research has started to investigate gender-specific racism (Hall, 2009; Iwamoto & Liu, 2009; Liang, Rivera, Nathwani, Dang, & Douroux, 2010), racism and health researchers should continue to explore how intersections of gender and race influence race-related perceptions, attitudes, and associated distress processing and help-seeking.

Also, the study revealed that racism experiences and racial identity attitudes were related to combinations of psychological and physical symptoms. It would thus be prudent for future studies to measure distress related to racism using inventories that assess for both physical and psychological symptoms, as holistic assessments may reflect
a more accurate and comprehensive measure of AAPI distress experiences. Furthermore, to ensure comprehensive symptom assessment, such studies should measure psychological symptoms using broad measures of psychological distress rather than unidimensional measures of depression.

Moreover, future research should explore how racial identity attitudes are influenced by racism awareness and events. In this study, racism experiences were related to Conformity, Dissonance, and Immersion, but not Internalization. Further exploration of Internalization attitudes could shed light as to the variables instructing racial identity development and facilitating self-awareness and introspection. Moreover, the unexpected relationship between Conformity and Cultural Racism suggests that Conformity-dominant AAPIs may be aware of being treated differently. Research exploring the determinants of Conformity may provide insight as to how these attitudes are impacted by social variables, including peer and family relationships, social environment, and self-esteem, which may interact with racial awareness as well as a preference for White values.

Another major finding of this study was that combinations of more sophisticated and less sophisticated racial identity statuses were simultaneously related to racism experiences, as well as with physical and psychological health. Further research should continue to investigate how racial identity statuses present together, and how such blends may be related to more and less distress. In particular, combinations of somewhat contradictory racial identity attitudes may signify racial identity development transitions,
and deeper understanding of how these schemas occur together may provide insight as to the complexity and dynamic nature of evolving racial identity processes.

Also, the results from this study offer some insight as to the shared experiences of U.S.-born AAPIs. Further research could extend this investigation by exploring bicultural competence, specifically focusing on U.S.-born AAPIs with immigrant parents. For example, U.S.-born AAPIs with immigrant parents are often socialized within their parents’ culture of ethnic origin, as well as the dominant White American culture (Kim, et al., 2003). As a result, their perceptions of being both Asian and American may be particular to their bicultural experience in the U.S. Further qualitative research that examines the intersections of familial immigration history, racial socialization, and bicultural identity development for U.S.-born AAPIs with immigrant parents might build more understanding of the racial and psychological experiences of this growing demographic.

Also, given that theoretical and empirical evidence indicates that race-related experiences and racial identity development are related to each other, it is also possible that each construct either mediates or moderates the other’s relationship with health symptoms. Thus, it is possible that racism experiences explain why Dissonance was associated with high psychological distress, and conversely, levels of Dissonance attitudes might explain why individual racism experiences were so strongly associated with various physical and psychological symptoms for U.S.-born AAPIs. Continued research in to the nature of the relationships between health, racism, and racial identity might grow our understanding of the continued power of race in our society, as well as
psychological components that protect AAPIs from distressing race-related microaggressions.

Perhaps most importantly, however, health research must disaggregate AAPI groups to gain a more accurate understanding of health disorder prevalence. Large institutions such as the Pew Research Center (2012) have promoted large-scale reports about AAPIs as a collectively healthy racial group; however, such reports have neglected to account for critical differences by ethnicity, gender, sexual orientation, and immigrant groups. Because of these differences, policy makers often regard AAPIs as healthy, in accordance with model minority assumptions, and thereby assume AAPIs do not require health funding or focused interventions (Lee et al., 2009). Such aggregation thus disregards important health disparities and leaves vulnerable AAPI subgroups underserved.

**Implications for Clinical Work with U.S.-born East Asian AAPIs**

The AAPIs who participated in this study identified differing experiences of institutional, cultural, and individual racism, and varying levels of racial identity sophistication. Both racism experiences as well as racial identity development were associated with each other and with psychological and physical symptoms. Specifically, being of male gender was related to racism experiences, and particularly individual racism events, which were also related to experiencing more of every type of physical and psychological symptoms. Similarly, being of female gender was related to patterns of Dissonance and Immersion being associated with every type of physical and psychological symptom. Moreover, being of male gender was related to high Dissonance
and low Internalization, which were also related to less dizziness and fewer headaches, but more psychological symptoms.

Moreover, group differences with regard to gender, ethnicity, and social class were found throughout the analyses. Specifically, being of male rather than female gender was related to patterns between racism experiences and health, relationships between Dissonance and Internalization attitudes and health, as well as patterns between institutional racism experiences and Dissonance and Immersion attitudes. In contrast, being of female gender was related to relationships between Dissonance and Immersion attitudes and health. Moreover, being Chinese American was related to relationships between cultural racism experiences and Conformity and Dissonance attitudes. And further, differences between flushing, dizziness, and chest pain symptoms were only found for low-income and Korean American participants. Such relationships between psychological experiences, identity constructs, as well as physical and psychological health thus provide several implications for mental health clinicians working with U.S.-born AAPIs.

First, the suggested relationship between racism experiences and health indicate that mental health clinicians should be aware of how race-related experiences, especially individual experiences, are related to poorer health outcomes for Chinese and Korean American men. In order to fully comprehend what this phenomenon entails, clinicians should have an understanding of how AAPI stereotypes are elicited through individual interactions, and thus, how these interactions may be related to increased physical and psychological symptoms.
Second, clinicians should be knowledgeable about Asian cultural orientations to health. Some AAPI clients may experience distress through either psychological or physical symptoms, whereas some clients may experience a combination of both types. As a result, clinicians should be aware of blends and patterns of combined psychological and physical symptoms that may affect their clients. They should assess for physical and psychological symptom types, as well as racial identity attitudes, to gain an accurate understanding of how their clients experience distress.

Furthermore, although they are often not considered mental health practitioners in White American health facilities, medical physicians faced with Chinese or Korean clients presenting with symptoms of dizziness, headaches, flushing, digestive distress and chest pains should also be aware that such symptoms may be related to racism experiences and/or racial identity development. Thus, to gain a more comprehensive understanding of AAPI patient health, it would be optimal for physicians to additionally assess for psychological distress, and collaborate with mental health clinicians.

Third, results of the present study emphasized the importance of attending to diversity within the AAPI population with respect to gender, ethnicity, and social class groups. Specifically, results imply that men and women may experience different race-related experiences, of which are differentially associated with health symptoms. Moreover, racial identity development may be distressing for women, in perhaps different ways from men. Further, Chinese Americans may relate cultural racism events with different racial identity attitudes than Korean Americans, and low-income Korean Americans may experience different physical symptom clusters than higher income,
Chinese Americans. Therefore, clinicians should gain knowledge about intersecting racial, gender, ethnic group, and social class identities, as well as differing experiences between AAPI subgroups. Although AAPI clients are often stereotyped as culturally similar (Sue et al., 2007), the current study suggests that subgroups often experience different phenomena that may be overlooked if they are aggregated across groups.

Finally, considering that racial identity development itself may be associated with physical and psychological symptoms, it is crucial for clinicians to develop the skills necessary to foster racial identity maturation. First, as the present study suggests, clinicians should be cognizant of how Conformity can elicit avoidance and isolation for Chinese Americans, how Dissonance can elicit confusion and ambivalence for women, how Immersion can elicit dichotomous thinking and hypervigilance for men and women, and finally how Internalization can elicit intellectualizing and flexibility for men (Helms, 1997). Then, by asking about race-related experiences and perceptions, clinicians can assess their clients’ racial identity development, recognize how it informs symptom presentation, and engage with clients about their evolving beliefs about themselves as AAPIs, about the AAPI group as a whole, as well as about the White people with whom they interact (Alvarez & Kimura, 2001; Kwan, 2001).

In particular, this study revealed several relevant suggestions about racial identity development. First, for both AAPI men and women, racial identity profiles high in Dissonance were related to more health distress. This finding emphasizes the necessity for clinicians to help AAPIs work through this increasingly confusing, and painful racial identity status. In addition, although Immersion may be a more sophisticated racial
identity status, it still may be accompanied by high distress and indicate necessary clinical support. Furthermore, Chinese American men and women with profiles consisting of high Conformity and high Dissonance were revealed to recognize and experience painful insinuations of being considered perpetual foreigners, though they may not associate such events with racial hierarchies in America. Optimally, such experiences could be contextualized and explored through clinical intervention, as well.

To help AAPI clients cope with these painful racial identity development processes, Alvarez and Kimura (2001) advise using the therapeutic space by allowing for support and validation of AAPI clients’ racial experiences. They add that by challenging clients to evaluate their existing racial identity attitudes, they can help foster introspective and analytical processing about their internal experiences, as well as the larger sociopolitical system.

In particular, Alvarez and Kimura emphasize the necessity of providing support for AAPIs dominant in Dissonance, as they grow in their awareness of themselves as AAPIs. Normalizing racial experiences and providing a safe space for dialogue and exploration will be crucial as AAPIs dismantle their “color-blind” notion of America. Thus, through thoughtful dialogue, clinicians can help thwart some of the distress that accompanies racial identity development, and fortify clients’ maturing information processing strategies.
References


Appendix A
Demographic questionnaire.

Please answer the following questions.

1. What is your age in years? _________

2. What is your gender?
   ___ Male
   ___ Female
   ___ Transgender
   ___ Intersex

3. How would you identify yourself? (You can pick multiple categories)
   ___ Asian, Asian-American
   ___ Pacific Islander (e.g., Samoan)
   ___ African American, African Descent, or Black (non-Hispanic)
   ___ Hispanic or Latino (e.g., Puerto Rican, Mexican, Central/South American)
   ___ Native American, American Indian, or Indigenous American
   ___ White (non-Hispanic)
   ___ Other (please specify) ______________________________

4. How would you identify your ethnic heritage?
   ___ Chinese, Taiwanese, Hong Kong
   ___ Japanese
   ___ Korean
5. Where were you born?

____ United States of America

____ Other (please specify) ___________________

6. Where were your parents born?

____ United States of America

____ Other (please specify) ___________________

7. What is the highest level of formal education you completed?

____ Some High School

____ High School Graduate

____ Trade/Technical School Graduate

____ Some College

____ College Graduate

____ Some Graduate Courses

____ Master’s degree (e.g., J.D., MBA, MA, MS)

____ Doctoral degree (e.g., Ph.D., Psy.D.)

8. What is the estimated socioeconomic status of your family of origin?

____ Low Income

____ Middle Class

____ Upper Middle Class
___ Upper Class

Appendix B

People of Color Racial Identity Attitudes Scale (PRIAS)

Instruction: This questionnaire is designed to measure people’s social and political attitudes concerning race and ethnicity. Since different people have different opinions, there are no right or wrong answers. Use the scale below to respond to each statement according to the way you see things. Be as honest as you can. Beside each item number, circle the number that best describes how you feel.

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<td>Strongly Disagree</td>
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1. In general, I believe that Whites are superior to other racial groups.
2. I feel more comfortable being around Whites than I do being around people of my own race.
3. In general, people of my race have not contributed very much to White society.
4. I am embarrassed to be the race I am.
5. I would have accomplished more in life if I had been born White.
6. Whites are more attractive than people of my race.
7. People of my race should learn to think and act like Whites.
8. I limit myself to White activities.
9. I think racial minorities blame Whites too much for their problems.
10. I feel unable to involve myself in Whites' experiences and am increasing my involvement in experiences involving people of my race.
11. When I think about how Whites have treated people of my race, I feel an overwhelming anger.
12. I want to know more about my culture.
13. I limit myself to activities involving people of my own race.
14. Most Whites are untrustworthy.
15. White society would be better off if it were based on the cultural values of my people.
16. I am determined to find my cultural identity.
17. Most Whites are insensitive.
18. I reject all White values.
19. My most important goal in life is to fight the oppression of my people.
20. I believe that being from my cultural background has caused me to have many strengths.
21. I am comfortable with people regardless of their race.
22. People, regardless of their race, have strengths and limitations.
23. I think people of my culture and the White culture differ from each other in some ways, but neither groups is superior.
24. My cultural background is a source of pride to me.
25. People of my culture and White culture have much to learn from each other.
26. Whites have some customs that I enjoy.
27. I enjoy being around people regardless of their race.
28. Every racial group has some good people and some bad people.
29. Minorities should not blame Whites for all of their social problems.
30. I do not understand why Whites treat minorities as they do.
31. I am embarrassed about some of the things I feel about my people.
32. I am not sure where I really belong.
33. I have begun to question my beliefs.
34. Maybe I can learn something from people of my race.
35. White people can teach me more about surviving in this world than people of my own race can, but people of my race can teach me more about being human.
36. I don't know whether being the race I am is an asset or a deficit.
37. Sometimes I think Whites are superior and sometimes I think they're inferior to people of my race.
38. Sometimes I am proud of the racial group to which I belong and sometimes I am ashamed of it.
39. Thinking about my values and beliefs takes up a lot of my time.
40. I'm not sure how I feel about myself.
41. White people are difficult to understand.
42. I find myself replacing old friends with new ones who are from my culture.
43. I feel anxious about some of the things I feel about people of my race.
44. When someone of my race does something embarrassing in public, I feel embarrassed.
45. When both White people and people of my race are present in a social situation, I prefer to be with my own racial group.
46. My values and beliefs match those of Whites more than they do people of my race.
47. The way Whites treat people of my race makes me angry.
48. I only follow the traditions and customs of people of my racial group.
49. When people of my race act like Whites I feel angry.
50. I am comfortable being the race I am.
Appendix C

Asian American Racism-Related Stress Inventory (AARRSI)

Instructions: Please read each item and choose how often you have experienced this event, and how distressed you were by this event.

FREQUENCY:
1 = This event has never happened to me.
2 = This event happened once in my life.
3 = This event has happened a few times in my life.
4 = This event has happened several times in my life.
5 = This event has happened frequently in my life.

DISTRESS:
1 = This event has never happened to me.
2 = This event did not distress me.
3 = These events made me slightly distressed.
4 = These events made me upset.
5 = These events were extremely distressing.

1) You hear about a racially motivated murder of an Asian American man.
   F___ D____

2) You hear that Asian Americans are not significantly represented in management positions.
   F___ D____

3) You are told that Asians have assertiveness problems.
   F___ D____

4) You notice that Asian characters in American TV shows either speak ad or heavily accented English.
   F___ D____

5) You notice that in American movies, male Asian leading characters never engage in physical contact (kissing, etc.) with leading female characters even when the plot would seem to call for it.
   F___ D____
6) Someone tells you that the kitchens of Asian families smell and are dirty. 
F___  D____

7) You notice that U.S. history books offer no information of the contributions of 
Asian Americans. 
F___  D____

8) You see a TV commercial in which an Asian character speaks bad English and 
acts subservient to non-Asian characters. 
F___  D____

9) You hear about an Asian American government scientist held in solitary 
confinement for mishandling government documents when his non-Asian 
coworkers were not punished for the same offence. 
F___  D____

10) You learn that Asian Americans historically were targets of racist actions. 
F___  D____

11) You learn that most non-Asian Americans are ignorant of the oppression and 
racial prejudice Asian Americans have endured in the U.S. 
F___  D____

12) At a restaurant you notice that a White couple who came in after you is served 
before you. 
F___  D____

13) You learn that, while immigration quotas on Asian peoples were severely 
restricted until the latter half of the 1900s, quotas for European immigrants were not. 
F___  D____

14) Someone tells you that it’s the Blacks that are the problem, not the Asians. 
F___  D____

15) A student you do not know asks you for help in math. 
F___  D____

16) Someone tells you that they heard that there is a gene that makes Asians smart. 
F___  D____

17) Someone asks you if you know his or her Asian friend/coworker/classmate. 
F___  D____
18) Someone assumes that they serve dog meat in Asian restaurants.

19) Someone tells you that your Asian American friend looks just like a famous Asian American person.
F___ D____

20) Someone you do not know speaks slow and loud at you.
F___ D____

21) Someone asks you if all your friends are Asian Americans.
F___ D____

22) Someone asks you if you can teach him/her karate.
F___ D____

23) Someone tells you that “you people are all the same.”
F___ D____

24) Someone tells you that all Asian people look alike.
F___ D____

25) Someone tells you that Asian Americans are not targets of racism.
F___ D____

26) Someone you do not know asks you to help him/her fix his/her computer.
F___ D____

27) You are told that “you speak English so well.”
F___ D____

28) Someone asks you what your real name is.
F___ D____

29) You are asked where you are really from.
F___ D____
Appendix D

Kessler Psychological Distress Scale (K10)

**Instructions:** The following ten questions ask about how you have been feeling in the last four weeks. For each question, select the response that best describes the amount of time you felt that way.

<table>
<thead>
<tr>
<th>Question</th>
<th>None of the Time</th>
<th>A Little of the Time</th>
<th>Some of the Time</th>
<th>Most of the Time</th>
<th>All of the Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In the last four weeks, about how often did you feel tired out for no good reason?</td>
<td></td>
<td></td>
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<td>2. In the last four weeks, about how often did you feel nervous?</td>
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<tr>
<td>3. In the last four weeks, about how often did you feel so nervous that nothing could calm you down?</td>
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<td>4. In the last four weeks, about how often did you feel hopeless?</td>
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<tr>
<td>5. In the last four weeks, about how often did you feel restless or fidgety?</td>
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<tr>
<td>6. In the last four weeks, about how often did you feel so restless you could not sit still?</td>
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<tr>
<td>7. In the last four weeks, about how often did you feel depressed?</td>
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<tr>
<td>8. In the last four weeks, about how often did you feel that everything was an effort?</td>
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<tr>
<td>9. In the last four weeks, about how often did you feel so sad that nothing could cheer you up?</td>
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<tr>
<td>10. In the last four weeks, about how often did you feel worthless?</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Appendix E

The Pennebaker Index of Limbic Languidness (PILL)

Several common symptoms or bodily sensations are listed below. Most people have experienced most of them at one time or another. We are currently interested in finding out how prevalent each symptom is among various groups of people. On the page below, write how frequently you experience each symptom. For all items, use the following scale:

A = Have never or almost never experienced the symptom  
B = Less than 3 or 4 times per year  
C = Every month or so  
D = Every week or so  
E = More than once every week

For example, if your face tends to feel flushed once every week or two, you would answer "D" next to question #1.

1. Face flushes ____  
2. Tightness in chest____  
3. Sweat even in cold weather____  
4. Headaches____  
5. Feeling pressure in head____  
6. Hot Flashes____  
7. Racing Heart____  
8. Dizziness____  
9. Leg cramps____  
10. Feeling faint____  
11. Insomnia or difficulty sleeping____  
12. Upset stomach____  
13. Indigestion____  
14. Heartburn or gas____  
15. Abdominal pain____  
16. Sore muscles____  
17. Diarrhea____  
18. Constipation____  
19. Nausea____  
20. Chest Pains____
PARTICIPANT INFORMATION AND CONSENT FORM

You are one of 338 people invited to take part in this doctoral dissertation research study being conducted by Marcia Liu, who is a doctoral student in the Counseling Psychology program at Boston College. The purpose of my study is to gain a better understanding of how experiences of anti-Asian racism and identity do or do not contribute to health symptoms. This form will give you information about my study.

You are being asked to participate in this research study because you (a) are at least 18 years old, (b) identify as being at least partly of Korean, Chinese, and/or Japanese heritage, and (c) were born in the United States.

If you agree to participate in this research study:

- You will be asked to provide descriptive information about yourself (such as age, ethnicity, gender, and educational level).

- You will be provided with a survey packet containing four self-report questionnaires designed to collect information about your racial experiences, as well as your current physical and psychological health.

- The amount of time to complete the study will be about 30 minutes. The questionnaires for the study are online.

Participation in this study is completely voluntary. The researcher will make every effort to keep your research records anonymous. This means that there will be no information on the online survey that will identify you personally as you will not be asked to provide your name, email address, school, or any other identifying information, unless you choose to enter the raffle described below. In that case, you will be directed to a second online site, which is not linked to your study responses.

After data collection has been completed, data will be accessed through Boston College’s secure server and downloaded to my personal computer. The data file will be password protected and available to me and my dissertation advisor. Moreover, individuals from such regulatory agencies as the Boston College Institutional Review Board or federal agencies overseeing human subject research may review the data as well. However, no one will ever be able to link your responses to the questionnaires to your identity.
As a thank you for your participation, you will have the opportunity to be entered into a raffle for one of two $100 Visa gift cards. If you wish to enter the raffle, you must provide an email address to which notification of your winning can be sent. On the last page of the questionnaire you will be given the option to enter the raffle. If you choose to enter the raffle you will then be redirected to another website where you will provide your email address. Your email address will not be linked to your study responses in any way. Please note that in order to enter the raffle, you must provide your email address. Only those participants who provide an email address will be eligible for entrance into the raffle. Email address information will be destroyed immediately after the raffle is completed and will remain under password protection until then.

This study is designed so that I may learn more about the experiences and outcomes of anti-Asian racism. This study is not designed to treat any illness or to improve your health. In sharing your experiences, you will be helping to advance the understanding of possible risk factors for race-related stress. You will also possibly be helping in the development of better interventions and health initiatives for clinicians and policymakers.

It is possible that you may experience some emotional distress from recalling events that may have been upsetting to you at the time. If the content of any of the questions is overly stressful and you would like to speak with a professional about either your racial experiences or your health concerns, please contact one of the following for a referral:

For physical health needs you can visit [http://doctor.webmd.com/physician_finder/home.aspx?sponsor=core](http://doctor.webmd.com/physician_finder/home.aspx?sponsor=core) to find a physician, and for mental health needs you can visit [http://locator.apa.org](http://locator.apa.org) to find a mental health provider in your area. These websites are also listed on the last page of the survey.

Everything possible has been done to ensure that your experience participating in this survey will be comfortable. However, if at any time you wish to discontinue the survey, you may do so without any penalty.

The results of this research will be presented at a meeting about my dissertation, and may also be presented at professional meetings or in published articles. Your name will never be used and no one will ever know your identity. Your responses will be grouped with the responses of other participants in the study and will not be analyzed separately.

If you have any questions about the study, would like more information about this study, or are interested to learn about the findings of the study, you may contact me ([liumc@bc.edu](mailto:liumc@bc.edu)). If you have questions regarding your rights as a research subject, please call the Boston College Office for Research Protections at (617) 552-4778 or email them at [irb@bc.edu](mailto:irb@bc.edu).
Please print and keep a copy of this letter, which includes the consent form, for your own records. By selecting the “yes” option below, you are agreeing to the following statement:

I have read this consent information about the study. I am at least 18 years old and I understand the possible risks and benefits of this study. I know that participating in this study is voluntary, and I can stop at any time.

Thank you for helping us with this important research. I very much appreciate your time and your willingness to share your experiences!