RACIAL DISCRIMINATION, HEALTH, AND HEALTHCARE IN HAWAI’I’S CHUUKESO COMMUNITY

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DEDICATION

I dedicate this work to my grandparents, Kayno and Kae Saito and Masao and Pat Inada. Who not only gave me unconditional love, but whose stories of racial discrimination and the Japanese American internment camps during World War II inspired me to do this work.
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ABSTRACT

Purpose: The purpose of this dissertation was to assess the relationship between racial discrimination and health in Hawai‘i’s Chuukese community. Increased experiences with racial discrimination has been found to negatively affect health in other communities. Experts in this field have highlight the importance of tailoring your tool to your specific study population. Anecdotal evidence of racial discrimination towards Chuukese has been documented, however no formal research has been published. This dissertation looks to fill that gap.

Methods: Based off of findings from a review of the peer-reviewed literature (study 1) and interviews with community members (study 2) a culturally appropriate measurement tool was created. Using this tool face-to-face interviews with Chuukese community members were conducted (study 3). Bivariate relationships between racial discrimination and health were explored. Multivariate logistic regression was conducted to test if these relationships were still significant after controlling for demographic characteristics, access to appropriate healthcare, and tobacco use.

Results: Major findings from study 1 include: 1) the majority of studies done with other indigenous and Asian Pacific Islander groups only measured individual rather than collective racial discrimination; and 2) tools created specifically for these study populations included unique examples of racial discrimination for their particular group. In study 2 examples of racial discrimination experienced by the Chuukese community were identified, along with methods and words to help facilitate Chuukese individuals disclosing experiences with racial discrimination in future quantitative research. Lastly in study 3, 72 face-to-face interviews were conducted with Chuukese community members. Analysis revealed that: 1) Chuukese in Hawai‘i experienced high levels of both collective and individual racial discrimination; 2) Increased experiences with any type of racial discrimination was significantly associated with bad self-report health outcomes, often times even after controlling for our other variables; and 3) for the Chuukese community collective experiences with racial discrimination may have a stronger impact on their health outcomes compared to individual experiences.

Conclusion: When addressing health inequities in Hawai‘i’s Chuukese community it is important to consider their experiences with racial discrimination. In particular collective racial discrimination may be particularly important when considering health inequities of this group.
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"Of all the forms of inequality, injustice in health is the most shocking and the most inhuman."

- Martin Luther King Jr. (1966, March 25).

CHAPTER 1: INTRODUCTION

1.1 Statement of the Problem

Health inequities across racial and ethnic groups continue to exist in the United States (US), (1-2) and in some cases, have increased over time. (3) Racial and ethnic discrimination (referred to in this manuscript as “racial discrimination”) throughout our society is believed to be one factor contributing to these inequities. (4-5) For the purpose of this study, racial discrimination is defined as the attitudes, actions, and institutional systems that degrade people based on their “phenotypic characteristics or ethnic group affiliation”. (6, pg 805) There is a growing body of literature that supports the theory that an increase in experiencing racial discrimination can lead to an increase in negative mental and physical health outcomes. (4-10)

This dissertation explores how Hawai‘i’s Chuukese community perceives, discusses, and experiences racial discrimination, and if these experiences are associated with their health outcomes. Chuukese are individuals who have originated from the group of islands known today as Chuuk, a state within the Federated States of Micronesia (FSM). Chuukese are often aggregated into the larger category of Micronesian (which include Marshallese, Carolinians, Kosraeans, Palauans, Pohnpeians, and Yapese; all of which have similarities and well as differences in their cultures and languages). (11) Individuals living in the US from the FSM are also referred to as COFA migrants, and their homelands are known as COFA nations. This label references the series of treaties between the US and FSM (as well as two other Micronesians nations – the Republics of Palau and the Marshall Islands), known as the Compact of Free Association (COFA). (12) The compact agreement is part of the unique relationship (explained in more depth below) between the Chuukese and the US.

Pacific Islanders, in which Micronesians (and Chuukese) are included, have some of the largest health inequities of all minority ethnic groups living in the US. (13) Micronesians living in their home nations and in the US have a high burden of both infectious and chronic disease including tuberculosis, Hansen’s disease, diabetes, and certain types of cancer. (14-16) A recent study looking at all non-pregnancy related hospitalizations in the state from 2010 to 2012, found that Micronesians in Hawai‘i were hospitalized significantly younger, and more often with a higher severity of illness in several disease categories compared to Native Hawaiians, Japanese, and whites. (17) This suggests that Micronesians in Hawai‘i are either dying younger or living
longer with less healthy years of life. This data coincides with anecdotal stories from Chuukese community members that it seems like they are going to funerals every weekend. These health inequities are especially pertinent to Hawai‘i as an assessment completed by the Department of Native Hawai‘i an Health at the John A. Burns School of Medicine found that Micronesians are the fastest growing ethnic group in the state. (18)

Researchers have cited a multitude of reasons for these health inequities suffered by citizens of COFA nations. (19-20) Of particular relevance to this dissertation is the proposal that these health inequities are largely a result of US geopolitical involvement in this region. This involvement can be viewed as a string of discriminatory actions, including replacing islanders’ traditional subsistence culture with a wage-based cash economy (19) and forcing them to change from a self-sufficient clan-based society into a nation with a centralized government dependent on US subsidies. (20) Not only has the historical trauma of colonization and radiation from US nuclear testing in the region negatively affected their health, (21) but unequitable policies, both at the US national and Hawai‘i state level, have intensified the situation by decreasing COFA migrants’ access to health services and Medicaid. (12, 22-23) All of these actions by the US government can be interpreted as examples of a lack of respect for Micronesian culture and beliefs, as well as a devaluation of Micronesians lives. In addition to these institutional failures and discriminations, two articles have documented anecdotal evidence of interpersonal discrimination towards Micronesians, both from the general public, (24) as well as healthcare providers. (25)

As researchers working with other communities have found that racial discrimination is significantly associated with healthcare utilization, (26-27) it is possible these discriminatory actions have affected COFA migrants’ healthcare utilization behaviors. Their utilization may also be partial explain by Choi’s (28) finding that Marshallese have low adherence to Westernized medicine, and wait to seek care until they are late in the course of their illness. It is also plausible that exposure to racial discrimination could contribute to COFA migrant’s health inequities in similar ways seen in other ethnic minorities (which will be detailed in following sections). (4-10)

This dissertation examines the understudied experiences Micronesians have with discrimination in Hawai‘i and the potential linkages between discrimination and their physical and mental health outcomes. First is a literature review of the issues introduced above, followed by a description of this dissertation’s three research studies presented within a unifying conceptual framework. The three studies are then explained in more detail, including additional background information, methods, results, and conclusion. Lastly, overall conclusions and
recommendations for future research, policy, and programs with by documented based on findings from all three studies.

1.2 Literature Review

1.2.1 Racial Discrimination and Health

Health inequities exist across racial groups, with higher disease incidence and mortality rates in minority groups compared to whites. (9, 29-30) A growing body of literature supports the theory that these health inequities cannot be explained by biological or economic status alone, and that they exist as a result of complex interactions between many social factors including race, social status, and discrimination. (9, 8, 31) It is believed the effects of racial discrimination can accumulate over a person’s life course, in some cases referred to as “weathering” (32) or across generations. (33-34) Racial discrimination is pervasive throughout many different contexts, including employment, education, neighborhoods, and healthcare. (35) This can have profound impact on a person’s access to power, services, and knowledge, which can affect their daily life experience (32, 36) as well as their health. (4-10)

In a literature review which including 138 studies assessing self-reported racial discrimination and health, Paradies (7) found that an increase in racial discrimination led to poorer physical health outcomes including; increased blood pressure/ hypertension, low infant birth weight, heart disease, diabetes, and increased body mass index. Increased racial discrimination was also associated with poorer mental health outcomes including depression, psychological/ emotional distress, anxiety, and stress. The majority of these studies were done with African Americans (n=95 studies), other groups represented included Asians (n=27), Latinos (n=26), immigrant/refuges (n=11), and indigenous populations (n=5).

1.2.1.1 Pathways of racial discrimination to unequal health: healthcare

It has been argued that racial discrimination can lead to negative health outcomes through several pathways including affecting one utilization of healthcare services and compliance with health recommendations by their healthcare providers. (26, 37) Healthcare discrimination is particularly relevant when examining health in the US as the US healthcare system has historically mistreated minority populations. (38) This includes segregated care, (38) forced quarantine of Native Hawaiians with leprosy, (39) the Tuskegee Syphilis Trials, (40) and coercion by physicians of Native American women to undergo sterilization. (41)

It has been found that minorities continue to endure discrimination when trying to obtain healthcare. For example, a study done by Todd, Samaroo, and Hoffman (42) found that Hispanic
patients entering the UCLA Emergency Medicine Center with isolated long-bone fractures, were twice as likely than non-Hispanic whites to receive no pain medication. This inequity was significant even after controlling for patients’ sex, language, and insurance status, as well as the physicians’ ethnicity, sex, and specialty. Another study reported that Black children were less likely to be waitlisted on kidney transplant lists than white children, even after controlling for patient age, gender, socioeconomic status, and the incident year of end-stage renal disease. (43) These current examples of racial discrimination in the healthcare system are especially disturbing as it’s been found that an increase in experiencing racial discrimination can lead to decreased overall access to healthcare, (26) decreased quality of and satisfaction with healthcare, (44-45) and decreased trust in healthcare providers (29, 33): all of which can decrease an individual’s ability to effectively manage their disease, “especially for diseases that require collaboration between patient and provider”. (46, pg. 382)

For example, Gonzalez et al.’s (26) found that after controlling for insurance status, American Indian women who perceived discrimination when accessing healthcare services were significantly less likely to have utilized cancer screening services than American Indian women who perceived little or no discrimination. The women who perceived discrimination also exhibited more suboptimal health seeking behaviors, had lower adherence medical advice, and were less engaged with their healthcare providers; suggesting that discrimination can lead to detachment from the healthcare system.

1.2.1.2 Pathways of racial discrimination: participation in risky health behaviors

It has also been theorized that increased racial discrimination may negatively affect health through other pathways including increased participation in risky health behaviors. (7) The review of the literature examining self-reported racial discrimination and health mentioned earlier (7) included several studies (n=21) that found that increases in racial discrimination was significantly associated with increased cigarette smoking, alcohol misuse, and substance misuse. A study done with 105 African American adolescent girls found that racial discrimination was highly correlated with cigarette smoking. (47) When they controlled for stress, this relationship was reduced (although still significant). This led the authors hypothesize that stress caused by racial discrimination is what leads to smoking. Another study done with 381 Aboriginal adults in Canada (an indigenous population to the area) found that experiencing racial discrimination was a risk factor for having a gambling problem and using gambling as a means to escape. (48) Researchers hypothesize that gambling maybe a coping response the negative emotions attached to experiencing racial discrimination.
1.2.1.3 Levels of racial discrimination

When exploring racial discrimination in the Chuukese community it may be important to consider different aspects of racial discrimination. Jones (36) conceptualized three levels of racial discrimination, internalized, interpersonal, and institutional, which I will describe in the context of health.

Internalized racial discrimination refers to the process of stigmatized racial groups believing in the negative stereotypes placed upon them. It can manifest in many ways, including personal rejection of one’s ancestral culture and an eroding sense of self-worth, both of which can undermine collective action. (36) In the specific context of health, internalized racism may affect stress levels (49) and engagement in risky health practices. (36)

Several articles have suggested that internalized racism can affect a person’s health by influencing how they perceive and respond to acts which are considered to be discriminatory. Chae, Lincoln, Adler, & Syme’s (50) national study of 1216 African American men found that cardiovascular disease risks for African American men included; 1) reporting racial discrimination; as well as 2) believing in the negative stereotypes place upon their racial group. They found that poor cardiovascular health was related to individuals who reported experiencing racial discrimination, as well as individuals who reported no racial discrimination but showed signs of internalizing racial discrimination. Another study found a similar relationship between internalized racial discrimination and hypertension in African Americans. (49) More specifically, they found that among individuals who reported increased incidences of racial discrimination, the prevalence of hypertension was greater in those who internalized the discrimination compared to those with who did not believe in the negative stereotypes placed upon their group. (49) The authors postulated that those who internalized racism may interpret acts of discrimination as their own fault, causing more stress and leading to decreased health outcomes. They also suggested those who had not internalized racism may attribute the negative experiences to external causes, protecting them from some of the negative effects of racial discrimination. In either case, internalized racism can have a complex effect on health.

Interpersonal racial discrimination refers to both the conscious and unconscious differential treatment of people based on their race. This differential treatment is the result of the assumptions we make about other people’s abilities and intentions based on their race. (46) Interpersonal racial discrimination can lead to decreased access to services and power, increased stress levels of those who are being discrimination against, as well as directly affect physical health when discrimination leads to violence. Since this is such a broad area, we will illustrate how interpersonal racial discrimination, when perpetrated by healthcare providers, can lead to
negative health outcomes. It has been found that healthcare providers are not immune to making assumptions about a person based on their race. For example, a study conducted with 193 physicians (84% White, 11% Asian, 3% Hispanic, 1% AA, and 1% other) regarding 618 cardiac patients (57% white, 43% AA) found that after controlling for several characteristics such as patient’s age, gender, and severity of illness physicians regarded African Americans as less intelligent, less compliant, and more likely to engage in risky health behaviors than whites. (51) It has been found that this type of stereotyping can cause healthcare providers to unequally communicate medical options to relevant patients based on their race or ethnicity. (52) The non-disclosure of medical knowledge may lead to racial minorities having less access to and receiving a lower quality of healthcare than whites. A study looking at found that transplant-eligible patients (53) found that those who reported experiencing discrimination were less likely to be put on kidney transplant list than those who reported none. Another study analyzing Behavioral Risk Factor Surveillance System (BRFSS) data (54) found that ethnic minorities perceived by healthcare providers as being white were more likely to receive preventative vaccinations and perceive less discrimination when obtaining healthcare than minorities who were perceived as non-white. This illustrates that the ethnic appearance of a person may elicit differential treatment by healthcare providers, which can lead to differences in individuals’ access and utilization of life saving health services, which in turn can affect their overall health outcomes.

Lastly, institutional racism refers to the policies and procedures of governments and organizations that lead to inequities based on race. Jones (36) explains that institutional racism can be difficult to identify because it is integrated into our institutions and collective culture. Institutional racial discrimination can be mistaken as truth or perceived as the social norm, oftentimes leading to no one feeling responsible for the situation. (55) Even the concept of race has racist implications. (36, 56-57) Researchers studying racial inequities continue to debate over the use of the abstract notion of race, which historically has been used by the majority group to oppress anyone different than themselves. (56) For the purposes of this dissertation, the term and categories of race are used to represent the embodiment of social factors that have historically been connected to America’s cultural racialization of humans. (57)

It has been shown that racial segregation of neighborhoods, a measurement of institutional racism, is associated with an individual’s health outcomes, including infant mortality, adult mortality, and tuberculosis. (58) A literature review on the effects of racially segregated neighborhoods found that they create inequitable exposure to healthy social and physical environments. (59) The authors concluded that a person’s environment can affect their health in many different ways, including differential exposure to hazardous waste, access to adequate
healthcare, and support for healthy behaviors such as physical activity. This is consistent with findings from another study which found that segregated African American neighborhoods compared to integrated and all-White neighborhoods had fewer supermarkets, fewer available pain medications at drug stores, and had more liquor stores and tobacco advertisements. (58)

Institutional racial discrimination in our healthcare system also contributes to the existence of health inequalities by affecting people’s ability to access health resources of equivalent quality. (4) Belcourt-Dittloff and Steward (33) explain that inadequate health services available for Native Americans, despite their high burden of morbidity and mortality, is an example of institutional racial discrimination. When this situation is coupled with their high rates of poverty, it has led to lower life expectancies for Native Americans compared to other US ethnic groups.

In light of their experiences with colonization and other indignities (explained in more detail in the next section), another form of racial discrimination that may be relevant to the Chuukese experienced is intergenerational or historical racial discrimination. This is the concept that racial discrimination can have a ripple effect across generations through shared historical events and traumas, and has been connected with decreased well-being. (33-34) For example researchers have documented that broken treaties and attempted genocide have made Native Americans mistrust the government and non-Native American peoples. The authors explain, when this mistrust is transferred to non-Native American healthcare providers it can lead to poor health outcomes for Native Americans.

1.2.2. COFA Migrants, the US, and Health

This section of the literature review provides a brief picture of the historic and present-day relationship of Micronesians and the US. It provides context for the observation that Micronesians have some of the greatest health inequities in comparison to any other population in the US today. (13,60)

After World War II, the US took administrative responsibility for the majority of Micronesian Islands, including the Northern Marians, Palau, FSM, and RMI. Shortly after this, from 1946 to 1958, the US military detonated 66 nuclear weapons in the RMI, which had the equivalent nuclear force of 8,580 Hiroshima atomic bombs. (61) As a direct result, the citizens of RMI and those of neighboring islands have suffered radiation-associated death and disease, including cancer, birth defects, and still births. (62-63) These health consequences continue decades after the nuclear testing was ended. (62)
The nuclear testing also destroyed the land, (16) poisoned the food source, (62) and in some cases it forced residents to relocate from their ancestral homeland. (20) By rendering the land infertile and poisoning the waters, citizens were unable to grow their own food or fish; directly affecting the foods they ate and decreasing their ability to participate in traditional physical activities. As a result, many had to live more sedentary lifestyles, and have developed a reliance on canned and processed food for sustenance. (60) As noted by a Yapese woman in a focus group on health conducted in 2006, “We used to die of old age and accidents, now we die of diabetes and cancer…..It’s because we used to work in our gardens and fish, but now we eat white rice”. (Inada, Megan. Community conversation with: Yapese women 2006)

This disengagement from the land has significantly contributed to individuals losing their traditional responsibilities, identities, and self-worth, and it has affected the overall structure of their families, clans, and communities. It also led to a collective loss of self-sufficiency for government, food production, conflict resolution, and healthcare. (20) This drastic change in their ability to practice their traditional culture is an effect from which community members are still working to recover and redefine.

After being criticized by the United Nations for failing to carry out its administrative responsibilities, the US began to increase its support to Micronesian nations. (20) Eventually, in 1986, the US entered a relationship of free association with three nations (Palau, the FSM and the RMI) through a series of treaties known as Compacts of Free Association (COFA). Migrants of these countries were classified as non-immigrants, a term usually reserved for short-term visitors and tourists. Despite this classification, COFA migrants were, and still are, legally eligible to work and live in the US without a visa, labor certification, or limits on length of stay. The compact also gave the US the responsibility to develop Micronesia’s infrastructure to support a viable health and education system, with the ultimate goal of creating self-reliant nations. Up until the present day the US had failed to achieve this goal. For example, outbreaks of cholera, which have long been eradicated from the US, still occur on the islands due to unsafe water and sanitation infrastructures. (64) Furthermore, by introducing a wage-based cash economy, US grants, and subsidies system, we have rendered the islands dependent on US federal monies to support their nations. (65)

This administrative failure is reflected in the disparities between average life expectancies of those living in the COFA nations and the US; in 2000 the average life expectancy is 67 years in the FSM, 65 years in the RMI, and 77 years in the US. (66) Determining the immediate cause of death is hard to ascertain in Micronesia due to limitations in data collection. (14) Population based health data for this group also continues to be limited in Hawai‘i due to
inadequate state and national surveillance systems. (14) However, data suggest COFA citizens living in the US and in their native homelands, have a high prevalence of multiple conditions, including: 1) malnutrition and infectious disease, including tuberculosis, Hansen’s disease and sexually transmitted diseases; 2) lifestyle dependent chronic disease, including diabetes, obesity, and heart disease (63); 3) certain types of cancers; 4) engagement in risky health behaviors, including smoking, alcohol consumption, and unprotected sex (67); and 5) suicide. (68)

Many COFA migrants come to the US with great healthcare needs, and in some cases individuals have gone directly from the airport to the emergency room. (63,69) This is partially a result of the lack of secondary and tertiary services in the RMI and FSM. (63) A large portion of the COFA nations’ healthcare budgets are dedicated to off-island healthcare. Despite this resource, many migrants must try to find their own financial support to travel to the US in hopes of obtaining lifesaving care.

Traveling to the US is just one hurdle. Despite promises made in the COFA compacts, it can still be difficult for COFA migrants to access appropriate healthcare once they arrive in the US. As mentioned above, this is partially due to the federal Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA). PRWORA changed COFA migrants’ eligibility status, disqualifying them for federal benefits which they were once eligible, including funding for non-emergency medical assistance via Medicaid (69; H.R. 3734 of the 104th Congress). Under this act, COFA migrants, unlike any other group of immigrants, are allowed to stay indefinitely but cannot establish residency. This makes them ineligible for federal benefits indefinitely.

Essentially PWOWRA shifted the responsibility of providing care to non-qualifying immigrants without other forms of insurance, from the federal to the state government. From 1996 to 2009, Hawai‘i provided COFA migrants living in the state with the same level of healthcare coverage as other legal immigrants and citizens who depended on public assistance through QUEST, the state’s Medicaid plan. This changed when the Hawai‘i Department of Human Services (DHS), in response to a growing state deficit, implemented Basic Health Hawai‘i (BHH), a severely restricted coverage plan specifically for COFA migrants. (70) Then DHS Director Lillian Koller, argued that these costs should be the responsibility of the federal, government, claiming the state only received 10 cents to every dollar they spent on services for COFA migrants. (70) This policy targeted Micronesians at a time when tensions over the impact of COFA migration were increasing in Hawai‘i. (23) The mainstream local media covering this story, chose to only highlight the costs of COFA migrants, while ignoring the contributions of Micronesians. This includes Micronesians contributing fiscally to the state through taxes and
volunteering to serve in the U.S. Armed Forces at approximately double the per capita rate as Americans. (15)

In 2010, after an intense legal battle, BHH was found to be illegal citing: 1) lack of adequate notice given to the public about the cuts in coverage; and 2) violated equal protection laws. (23) However the issue over healthcare coverage continued to be argued in court. Eventually in April 2015 the majority of COFA migrants were forced to sign up for a health insurance plan through the Affordable Care Act (ACA) via the Hawai‘i Health Connector. One issue with this is that the plans through ACA are meant for people 130% over the federal poverty line, which many COFA migrants fall beneath. Therefore many health and community advocates foresee issues with this population being able to afford to pay the premiums and co-payments attached to these plans. (23) An additional issue was that soon after this transition, in January 2016, COFA migrants were again forced to re-enroll onto a healthcare plan through the Federal Health Connector’s website as the state connector went bankrupt.

Continued efforts are being made by Micronesian community members, social justice lawyers, and health advocates to ensure COFA migrants are afforded the healthcare they deserve. COFA-Community Action Network (COFA-CAN), an ad hoc community group advocating for equitable polices, collected stories from community members regarding these changes in healthcare coverage. They found that it has contributed to confusion for both COFA migrants and healthcare providers on migrant’s healthcare eligibility and coverage. Community members shared that this confusion led them to: 1) not get the care that they need; or 2) be forced to wait until they can no longer bare the pain and seek more expensive care in the emergency room. (COFA-CAN unpublished, 2015) Based on these conversations with Micronesian community members I believe these unequitable healthcare policies has led to an increase in COFA migrants’ mistrust of the US healthcare system. This is in line with research evaluating the immediate effects of other inequitable health and immigration policies, (71) and is concerning as mistrust can lead to decreased access and utilization of needed healthcare, which can negatively affect health (as documented earlier).

In addition to this type of institutional racism, there is documentation of anecdotal stories of interpersonal discrimination toward COFA migrants by healthcare providers. (25) Yamada described the hardships that Micronesians have encountered in Hawai‘i’s healthcare system, explicitly citing negative stereotypes physicians hold toward this community. Others have shared instances where COFA migrants were wrongly turned away from proper care leading to their deaths. (63,72)
Throughout the process of conceptualizing this research, Chuukese community leaders and experts in the field of racial discrimination and Pacific Islander research have continually been conferred. Both researchers and community members have supported this research and view it as an important issue for the Chuukese community.

In conclusion, I believe the evidence presented above, supports the hypothesis that investigating racial discrimination may help further our understanding of the underlying causes of health inequities experienced by Chuukese in Hawai‘i. It has been shown that in other communities, increased racial discrimination is associated with decreased health outcomes. We believe racial discrimination is just one of several factors (others being financial, logistical, and cultural) affecting the health outcomes of Chuukese migrants. It is not my goal to prove that racial discrimination is any more important than the other factors. Rather, I believe that many of these issues are interconnected, and all must be addressed to rectify health and healthcare inequities between racial groups. However, as stated earlier, there is very little work published on racial discrimination and health related to Micronesians. (7,10) I believe that if we do not consider this social justice issue, we will be missing an important piece of the solution towards reaching health equity. For example, imagine a scenario where we solve all the cultural, logistic, and financial barriers for an individual accessing healthcare, but they feel their healthcare provider looks down upon them because of their race. It is highly likely this patient will delay seeking care until their situation worsens and they are in dire need. In this scenario, the patient suffers needlessly, and the cost of healthcare has risen greatly. This dissertation aims to help close the gap in research concerning racial discrimination and health outcomes for Chuukese living in Hawai‘i.

1.3 Community Partners

An important process in public health transitional research is to engage with the community of interest. Community participation is an integral and necessary portion of this dissertation’s research. Below is a list of community partners we worked with throughout the three studies (Table 1.1). These relationships will be explained in more detail in the description of the individual studies.
Table 1.1: Community Partners by Study

<table>
<thead>
<tr>
<th>Study 1: Literature Review</th>
<th>Study 2: Qualitative</th>
<th>Study 3: Quantitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chuukese Community Members via community liaisons</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Community Liaison – Max Ifenuk</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Community Liaison – Innocenta Sound-Kikku</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Community Liaison – Auntie Evelyn Sowes</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Health providers via Dr. Seiji Yamada</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Chuukese and health provider communities via contacts from working with Kokua Kalhi Valley Comprehensive Family Services</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Experts in the field of racial discrimination, Micronesian/ Pacific Islander, immigrant health, qualitative, and quantitative research</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

1.4 Framework

Public health advocates have ascertained that the person’s individual health is not only determined by their access to care and the quality of the healthcare they receive, but also by numerous interacting social issues. (2,73) For example, when evaluating issues surrounding a person’s health, one should not only evaluate their need for technical medical interventions, but should also consider the possible influences of racism, bias, and prejudice. (36,74-75) Several expert researchers in the field of discrimination, social justice, and health support the idea that the effects of discrimination must be examined in the context in which it is occurring, including historical and political climates, institutional racism, and historically oppressive systems of race, gender, and class. (8,29,31)

The conceptual framework for this dissertation is also informed by an interview conducted in Fall 2013 with a Chuukese community leader, Max Ifenuk. He explained that the issue of racial discrimination and health in the Chuukese community is “like the five fingers of a hand. You can’t just deal with one thing because if you just cut off one finger it still has roots to grow back.” Although we know a finger will not spontaneously grow back if dismembered, his analogy was very poignant. It references the importance of acknowledging all the intertwined factors which affects one’s health. This sentiment is along the lines of the social ecological model, which illustrates that there are individual, interpersonal, organizational, community, and political factors which can affect a person’s health.

Thus, the framework for this dissertation reflects the Social Ecological Model, (76) input from the Micronesian community, and Jones’s three levels of racial discrimination. (36)
fingers and thumb of the hand represent categories of the Social Ecological Model: policies, organizations/healthcare system, community/neighborhood, interpersonal influences, and individual factors. The outline of the hand, which encompasses everything represents historical context and culture. Overlaid on the hand are the three levels of racial discrimination described by Jones. Institutional racial discrimination connected to historical context, policies, organizations, and communities and neighborhoods. Interpersonal racial discrimination is connected to interpersonal relationships and internalized racial discrimination is attached to the individual.

Figure 1.1: Framework to Study the Health of Chuukese living in (Hand Framework) - adapted from Social Ecological Model, (76) Jones, (36) and community member’s input.

The palm of the hand represents the health of Chuukese living in Hawai‘i. This embodies the idea that the collective health of the community is more important than individual health, a common belief in Pacific Islander and other collectivist cultures. (77) One study done in New Zealand, (77) found that out of four ethnic groups, Pacific Islanders had the most collective preferences, meaning their self-identities and goals were highly connected to their “family, tribal group, or some other definably collective set”. (pg 6) In this study Pacific Islanders had the least distinction between family, friends, and strangers. This cultural identity trait may be important to consider when trying understanding Chuukese beliefs surrounding health and healthcare, and therefore is represented by placing the health of the whole community in the center of the figure.

This framework illustrates the interconnectivity of the different “fingers” or categories. The creation of this framework, and in essence this whole dissertation, is an attempt to implement
the suggestions of Palafox et al. (13, pg. 279) to try and “understand and apply indigenous peoples’ paradigms of health, knowledge, research, and science”. This framework also illustrates that there are many factors, including the different forms of racial discrimination, which can affect the health of the Chuukese community.

For the purpose of data analysis and variable specification, a more focused and detailed conceptual model was needed. Williams and Mohammed’s (31) Framework Figure 1.2 (Figure 1.2) for the Study of Racism and Health illustrates how racial discrimination interacts with societal institutions and biological and geographical origins to cause inequities in social status, and ultimately health outcomes.

Although Williams and Mohammed’s (31) framework is comprehensive, attempting to address all its constructs in this dissertation was not feasible. Instead, this dissertation focuses on five of their constructs or sub-constructs: racial discrimination, medical care, participation in risky health behaviors, and mental and physical health. (Figure 1.3)

Figure 1.2: “Framework for the study of racism and health” Williams & Mohammed (31)

Concentrating on these five items a model was created illustrating that racial discrimination had a direct relationship with health as well as an indirect effect through two pathways: 1) access to appropriate healthcare; and 2) participation in risky health behaviors.
Although the basic structure of this model (illustrated in Figure 1.3) remained the same, the specific variables included to represent these constructs and pathways evolved informed by the peer reviewed literature (STUDY 1) as well by Chuukese community members and healthcare providers that serve them through face-to-face interviews (STUDY 2). The specific variables used in this model, and how they were identified, will be discussed in detail throughout the three studies.

Figure 1.3: Model to Study the Relationships between Racial Discrimination and the Access of Healthcare and Health Outcomes of COFA Migrants

1.5 Overview of Three Studies

Using a mix of qualitative and quantitative methods to collect data, this dissertation will address the issue of racial discrimination and its association with health in Hawai‘i’s Chuukese community. This is in consideration of a literature review conducted by Williams, Neighbors, & Jackson (10) which found that often an incomplete picture of discrimination is captured through quantitative research approaches alone.

The first study is a systematic literature review of studies measuring racial discrimination in indigenous or Asian Pacific Islander communities. The aim of this study was to identify culturally appropriate methods and items to assess racial discrimination in the Chuukese community. Each article was analyzed using five domains of interest: 1) collection methods; 2) use of race salient or neutrally worded items to assess discrimination; 3) timeframe; 4) examples
of measurements to assess collective experiences with racial discrimination; and 5) unique examples of racial discrimination to study population.

Next study 2 employed qualitative methods to conduct interviews with Chuukese community members and healthcare providers serving this community, with the overall goals to 1) identify information to create a culturally appropriate measurement tool to assess racial discrimination in the Chuukese community; and 2) better understand the Chuukese experience with healthcare in Hawai‘i. Open-ended questions were used to answer three questions: 1) What are the barriers, including racial discrimination, to obtaining needed healthcare for Chuukese in Hawai‘i?; 2) What methods, concepts, words, and phrases can be utilized to help facilitate Chuukese individuals disclosing experiences with racial discrimination in future quantitative research?; and 3) What are possible solutions to barriers to healthcare, including identifying assets of the Chuukese community?

The third study was the quantitative study. A draft measurement tool to assess the constructs and pathways in the model; racial discrimination, access to healthcare, participation in risky health behaviors, and health was created based on information collected in studies 1 and 2. The draft tool was evaluated on its cultural appropriateness, relevance, readability, and ability to measure racial by: 1) collecting informal input from experts in the field of racial discrimination, Pacific Islander, and quantitative research; and 2) conducting cognitive interviews with three Chuukese community members. After making appropriate changes, the finalized measurement tool was utilized with 72 Chuukese community members. Multivariate analysis was used to test the hypotheses: 1) Chuukese community members experience racial discrimination throughout different facets of their lives; 2) Increased experiences with racial discrimination is significantly associated with worse health outcomes; and 3) This relationship can be partially explained by racial discrimination’s association with access to healthcare and participation in risky health behaviors.
CHAPTER 2: STUDY 1

A systematic literature review of studies measuring racial discrimination in indigenous and Asian Pacific Islander: Identifying items and methods to create a measurement tool for the Chuukese community

2.1 Abstract

Purpose: Our study aim was to determine the most appropriate way to measure racial discrimination for Micronesians living in the United States (US). Due to the lack of publications in this area, this study reviewed research measuring racial discrimination in populations with similar cultural preferences; indigenous and Asian Pacific Islander (API) communities.

Methods: All studies were analyzed on five areas: 1) collection methods, 2) use of race salient or neutral wording, 3) timeframe, 4) collective experiences with racial discrimination, and 5) examples of unique experiences with discrimination.

Results: 1,890 articles were identified, based on our inclusion criteria 53 were included in our analysis. Interesting findings were identified in each domain. The majority of studies in this utilized face-to-face interviews with many citing that this methodology honored the cultural protocols and values of indigenous populations. Race salient items were most often used to assess experiences with racial discrimination, however one study with included both race salient and neutrally worded items in their measurement tool concluded that it is important to include both as they may measure different aspects of racial discrimination. The majority of studies in this review did not measure collective experiences with racial discrimination, those that did most often used one item to assess the participants’ friends’, family’s or ethnic group’s experiences with racial discrimination.

Conclusion: These findings provided helpful information to create a culturally appropriate measurement tool to assess racial discrimination in the Chuukese community and may be of interest to those measuring discrimination among Micronesians, other API, indigenous, or other similar cultural communities.

Key words: review, racial discrimination, Micronesian, Asian Pacific Islander, Indigenous, measurement tool
2.2 Introduction

Experiencing racial discrimination—defined as the attitudes, actions, and institutional systems that degrade people based on their “phenotypic characteristics or ethnic group affiliation” (1)—is associated with negative health outcomes (2-3). Despite strides in racial discrimination research, there is yet no consensus on the most appropriate or valid method to measure discrimination (2-6).

Racial discrimination can be challenging to measure as it can be difficult to identify for several reasons including: 1) it can be outside of the conscious awareness of the participant (3-7); 2) it can be difficult for individuals to assess if unfair treatment should be attributed to racial discrimination (3,7-8); and 3) individuals who have internalized racial discrimination may interpret the unfair treatment as normal or as their own fault (9-10). Recall bias also can affect a person’s ability to accurately report frequency of experiencing racial discrimination. (3,5,7-8) Vigilance bias could lead some individuals to be highly sensitive to discrimination, (3,7) while minimizing bias could manifest as the desire to underestimate experiences of racial discrimination. (3,5,7) Individuals also may deny experiencing racial discrimination as a coping mechanism to avoid feeling helpless or victimized (4-5,8).

Recent reviews highlight the importance of tailoring racial discrimination measurement tools to specific study populations to address differences in language, nativity, culture, and concepts of race (3,5,7-8). These factors may affect both an individual’s unique experiences and his/her interpretations of racial discrimination. Considering cultural relevance is particularly critical among indigenous populations due to their historical experiences with colonization, mistrust of Western research, and cultural etiologies and protocols that are distinct from Western approaches (11). Currently, the majority of validated racial discrimination measurement tools were designed specifically for Black or African American communities, which have distinct cultural protocols as well as unique historical and current experiences of racism (2-5,12). Therefore these scales may not be as relevant to other racial/ethnic groups.

The aim of this study was to determine the most appropriate way to measure racial discrimination in a distinct and growing ethnic community - Micronesians living in the United States (US) (13). The term ‘Micronesian’ is a general term for populations originating from thousands of islands and atolls in the western Pacific Ocean with similarities as well as differences in their languages and cultures. Micronesians living in the US have a high burden of both infectious and chronic diseases (14-15) coupled with a unique immigration status which affects their access to healthcare coverage (16). Recently, anecdotal reports of racial discrimination toward this relatively new population to the US have been documented (17-18).
However, to our knowledge no formal research has been published quantifying associations between racial discrimination and health in this population.

Before attempting to measure perceived racial discrimination in the Micronesian population, their experiences, protocols, and concerns must be taken into consideration. Traditionally Micronesians have had an oral-based (19) and collectivist culture (20). Thus, they may have a need for instruments that include an in-person opportunity for story-telling and an assessment of collective, as well as individual, experiences with racial discrimination. Another measurement domain that may be important is the use of race-salient or race-neutral wording. Studies show that the use of race-salient wording can lead to both over and under reporting of exposure, but it is not known how this might manifest in Micronesians (8, 21). It has also been found that the timeframe used to assess experiences with racial discrimination can affect outcomes (2). However, there is currently no consensus on the most appropriate timeframe, for example, in the past month or year or across the lifetime (8). This construct is useful to explore in the context of the Micronesian experience, especially given the fact that many are recent arrivals to the US.

Towards these goals, this study reviewed the literature to better understand which methods, items, and/or scales would be the most appropriate to measure racial discrimination experienced by Micronesians. At the time of the search, no articles published in the peer reviewed literature could be found on formally measuring racial discrimination in the Micronesian community. Therefore, this study reviewed research measuring racial discrimination in indigenous and Asian Pacific Islander (API) communities, with the expectation that these populations have similar cultural preferences and measurement concerns as Micronesians. Like Micronesians, many indigenous populations have had struggles with colonization and negative experiences with Western research (22). Many API populations have cultural beliefs that are relevant to Micronesians, including placing high importance on the collective experience rather than the individual (23).

To the best of our knowledge, no reviews of discrimination measurement have looked specifically at indigenous and/or API populations. However Gee et al. (3) did review studies measuring racial discrimination in Asian American populations. Their findings included the importance of measuring experiences of racial discrimination that are unique to the Asian American community, including those which are not otherwise captured in scales originally created for African American communities or adapted for multiethnic groups. Gee et al. (3) also acknowledged the heterogeneity of the Asian American community and the lack of research with
certain subgroups, including Pacific Islanders, underscoring the value of this current research project.

From the literature, challenges and best practices likely to be relevant in measuring racial discrimination in the Micronesian community are considered. In this paper, an overview of the literature around measuring discrimination in indigenous and API communities is presented to specifically answer both process-oriented and content-oriented questions. The process-oriented question was: What data collection format (e.g., interviews vs. written surveys), wording (e.g., race salient vs. neutral), and timeframe are the most appropriate to use with the Micronesian community to assess experiences with racial discrimination? The content-oriented questions were: 1) How have researchers measured collective experiences with racial discrimination?; and 2) How have researchers incorporated examples of experiences with racial discrimination unique to their study population’s culture?

2.3 Methods

This study was approved as part of a larger study by the University of Hawai‘i Committee on Human Studies. PubMed MEDLINE and Academic Search Premier were searched to identify relevant articles measuring racial discrimination in the indigenous and API populations. To be eligible for inclusion in this review, the article had to be peer-reviewed, available in English, and measure racial discrimination experienced by API and/or indigenous populations. All study designs were eligible, and there were no limitations regarding the location or sample size of the study. If a complete copy of the instrument could not be found, one was requested from the corresponding author by email.

A combination of search terms were used including: racial discrimination, racism, measuring, Micronesian, indigenous population, indigenous peoples, Native Americans, Native Hawaiians, and Asian Pacific Islanders. In addition to using the indicated search terms, citation chasing was completed considering relevant references of included articles. Articles suggested by experts in the field of racial discrimination were also included.

We followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to conduct our review. (24) PRISMA includes 27 evidence-based items to conduct systematic reviews and meta-analyses. We followed all PRISMA items that were relevant to our review, including providing our rational, inclusion criteria, and limitations. However, we did not check items regarding meta-analysis or risk of bias for individual studies, as
we were not interested in analyzing study outcomes, but rather focused on methods and specific
items used to assess racial discrimination.

Each study was assessed to answer our process- and content-oriented questions including:
1) collection methods, 2) use of race salient or neutral wording, 3) timeframe, 4) collective
experiences with racial discrimination, and 5) examples of experiences unique to the study
populations’ culture.

2.4 Results

Using our search terms, 1,890 articles were identified (Figure 1) through academic
databases, and four were identified through other sources. After compiling all articles, we
excluded 591 duplicates. The remaining 1,303 articles were screened, after which 1,206 more
were excluded: 899 because they were not about racial discrimination, 279 because they were not
published in peer-reviewed journals, 23 because they were not published in English, and five
because the study was not conducted with indigenous peoples or Asian and Pacific Islanders. The
remaining 97 articles were read in full, after which 44 more were excluded: 23 did not use a racial
discrimination measurement tool (the majority were summaries, concept papers, or editorials
about racial discrimination), nine were not about racial discrimination (topics including income
discrimination, interventions addressing racial discrimination but not measuring racial
discrimination, and racial disparities in victimization), seven focused on discriminatory attitudes
towards indigenous populations in non-indigenous populations, three were not completed with
our target populations, and two measured reverse racial discrimination. This left 53 articles for
analysis. Later, only one study representing multiple studies using the same items to measure
racial discrimination from the same database (detailed below) were used, reducing the number of
studies in the main analysis from 53 to 46.

2.4.1 General Information

2.4.1.1 Study population

Of the 53 studies, the majority (n=35) measured racial discrimination in indigenous
populations (25-59), including eight conducted with Native Americans or American Indian/
Alaskan Native (AI/AN) in the US (25-32), three with Native Hawaiians in Hawai‘i (33-35), and
24 with indigenous populations outside the US (in Australia, New Zealand, Canada, and Norway)
(36-59). Studies in API populations included five focusing only on APIs, (60-64) and 13 were
conducted with multiethnic populations that explicitly included API populations. (65-77)
Multiethnic studies included varying proportions of API participants, ranging from 2.9 (65) to 44
(71) percent. The sample size of the studies ranged from 15 individuals (62) to 24,988 participants
(49). However one study with a multiethnic study population had as little as five individuals who
Several studies focused in special populations, including gay men or sexual minorities (n=7) (26,28,62,64,68,73-74) youth or young adults (n=9) (25,30,38,39,41,43-44,62,76), families/parents with children (n=3) (31-32,55), members of special occupations such as military or nursing (n=5) (51,58,65,66,75) women (n=2) (25,40), elders (n=1) (27), and patients and staff from an emergency room (n=1) (57).

2.4.1.2 Study methods and measurement tools

Of the 53 studies, 13 were qualitative (25,27,31,36,40,51-52,57-60,71,74). All the qualitative studies used questions created specifically for the community of study. However, one study with indigenous Australians (59) also included the validated Measure of Indigenous Racism Experiences scale (described in more detail below). Over 60% of the qualitative studies (n=8) (25,27,31,36,40,51,58-59) highlighted the importance of pilot testing the instrument with community members and/or having it approved by advisory boards or tribal governments before administration to help ensure cultural appropriateness. The majority of qualitative researchers (n=10) (25,27,31,36,40,51,58-59,62,74) also noted the usefulness of using open-ended questions and semi-structured interviews to allow participants to lead the conversation. In addition to individual interviews, three studies also included focus groups (25,36,74). Baba et al. (36) first conducted focus groups, and then asked participants if they would like to participate in individual interviews with more in-depth questions, and Castagno (25) used focus groups with students and interviews with faculty. However, none of these three studies mentioned any cultural reasoning as to why they implemented both methods. One other study had the unique approach of using a “lifeline interview,” asking Native American participants to share “major life events” sequentially from birth to the present (31). Using a rope to represent their lifeline, Mybra et al. (31) had participants place objects on it denote negative or positive events and gave them note cards to explain more complex feelings.

The remaining 40 were quantitative studies (26,28-30,32-35,37-39,41-50,53-56,60-61,63-70,72-73,75-77) which used questionnaires with one to 131 items. (Table 1) Twenty three of these studies (26,28,30,33-35,38,39,42-44,53-55,60-61,63,65,67-68,72, 76-77) used validated scales or modified versions of validated scales. Validated scales included scales specifically created for indigenous or API populations (n=8) (26,28,38,39,42,53,54,63), scales assessing microaggressions (n=6) (26,28,30,65,72,76) and two widely used scales originally created for African American populations—the Experiences of Discrimination (n=4) (43-44,67,77) and the Everyday Discrimination Scale (n=3) (35,60-61).
Of the scales specifically created for indigenous or API populations, three studies used the Measure of Indigenous Racism Experiences (MIRE) or a modified version thereof (42,53,54). The MIRE was created by an indigenous Australian researcher based on a literature review regarding measuring racial discrimination (2), focus groups with Australian indigenous community members, and items from several previously validated scales (53). Other scales created specifically for indigenous or API populations were the Subtle and Blatant Racism Scale for Asian American College Students (63), the Microaggression Distress Scale created for American Indians and Alaskan Natives (26,28) and the Perceived Discrimination and Multiculturation Scale created for indigenous Australian youth (38-39). Relevant attributes of these scales are discussed in greater detail in other sections.

The remaining 17 quantitative studies (29,32,37,41,45-50,56,64,66,69-70,73,75) used original non-validated items or scales. Although not validated, four of these studies noted that their items were based on items from other studies done with similar populations (37,45,50,64). Over half (n=10) (29,37,42,45-50,69) of the studies using non-validated measurements were part larger national, state, or population based surveys and used a smaller number of items to access racial discrimination, ranging from one to four.

As noted, several articles were excluded (28,39,46,47,48,50,54) from the remaining analysis because they used the same items to assess racial discrimination from the same database as another study; leaving 46 studies. For example only one (37) of the three articles (37,48,50) using data from the 2006/07 New Zealand National Health Survey (NZNHA) and one (45) of the three articles (45-47) reporting findings from the 2003/04 population-based study of indigenous Sami, Kven, and Ethnic Norwegian populations (SAMINOR) were used in our remaining analysis.

2.4.2 Process-Oriented Results

2.4.2.1 Collection methods

Of the 46 unique studies, the majority (n=29), (25-27,29,31-32,35-37, 40-41,49, 51-52,55-60,62,67-70,73-75,77) used interviews, 14 (30,33,34,38,43-45,61,63-66,72,76) used written surveys, and three used both (42,53,71). Of the studies using both formats, Cunningham & Paradies (42) and Kohli & Solozano (71) provided reasons as to why or when each method was used. The former (42) used written surveys instead of computer-assisted interviews as back up for those living in remote areas, but did not explain if they did this to address cultural preferences or for logistical reasons, such as lack of telephones. Kohli & Solozano (71) explained they used interviews to get additional in-depth information from participants.
The 29 studies only utilizing interviews used different methods, including face-to-face interviews (n=15) (27,31,32,37,40,49,51,52,55,56-59,62,70,74), computer-assisted interviews (n=5) (26,41,62,68,73), telephone interviews (n=5) (29,35,69,75,77), and multiple interview methods (n=4) (25,36,60,67). Chae et al. (60) explained that, in their study with Asian Americans, researchers used face-to-face interviews unless a phone interview was requested by the participant or a face-to-face interview was not possible. They did not provide examples as to why. Burgess et al. (67) also used multiple formats, explaining they used telephone interviews with their multiethnic populations, but used face-to-face interviews for their harder-to-reach African-born Black and American Indian populations. Again, they did not explain why they were hard to reach, i.e. if this was due to participants feeling uncomfortable answering questions over the phone or to practical factors, such as lack of telephones, or both.

Of the 19 studies using face-to-face interviews, 11 employed interviewers of the same race as participants (25,27,31-32,40,51,55-56,58-60) to increase comfort among participants and adherence to cultural protocol. Mellor (52) who conducted interviews himself, was racially discordant to the indigenous Australians community he was working with, and acknowledged this as a possible study limitation due to indigenous Australians’ historical mistrust of non-indigenous researchers. He tried to address this issue by spending a significant amount of time establishing trusting relationship with the community, as well as obtaining approval from community leaders.

All but one study that used computer-assisted interview technology were conducted with gay or sexual minority populations (26,62,68,73) and the one other study was done with high school students in New Zealand (41). None of the studies explained their reasoning for choosing to use computer-assisted interviewing; however, it may have been to increase anonymity of respondents.

Of the 14 studies using written surveys, the majority were completed with youth (n=7) (30,38,43-44,61,63,76) or multiethnic populations (n=4) (65-66,72,76). Again, authors did not explain why they choose this method. The majority of written surveys were completed in person (n=7) (33-34,38,43-45,63), usually at venues where the study population congregated, such as schools or community centers. Bodkin-Andrews et al. (38) used a unique approach and had students individually fill out their surveys while the questions were read over loudspeakers at school. Yoshikawa et al. (64) used race-concordant API recruiters to talk to participants, and Currie et al. (44) explained that they got approval from their indigenous advisory board before administering their surveys.
2.4.2.2 Utilization of race salient or neutral wording

Race-salient wording refers to the direct explicit attribution of experiences due to the participant’s race, such as “Have you ever been kept waiting or treated differently by a health professionals because of your ethnicity” (used by Becares et al. (37) with indigenous New Zealanders) or “Have any of your teachers acted surprised when you did well or expected you not to do well because of your ethnicity” (used by Whitbeck et al. (32) with American Indian youth). Neutral wording does not make this connection. For example, the Racial and Ethnic Microaggressions Scale (72) includes the item “Someone assumed I spoke a language other than English.” Most often researchers using this approach only ask individuals to speculate why the incident occurred after participants confirmed experiencing this situation.

Out of the 46 unique studies reviewed, the wording of items measuring racial discrimination were race-salient in 23 studies (32,33,37,38,41,43-45,49,52,55,56,58,59,62-65,68,69,73,74,76) and neutral in 12 studies, (27,29-31,35,36,40,51,57,61,71,75) while nine studies (26,34,42,53,60,66-67,72,77) used both. We could not obtain a full copy of two of the scales (25,70) and therefore cannot report on their use of race-salient words. Few studies included justifications or explanations as to why researchers choose to use race-salient or race-neutral wording. However, Chae et al. (60) explained that they included both because people respond differently to race-salient compared to neutrally-worded items, and therefore felt these items may measure different dimensions of racial discrimination.

Some scales used race-salient wording more explicitly than others. For example, in Torres-Harding et al.’s study (76) each item of the Racial Microaggression Scale (RMAS) was attached to the saying “because of my race,” such as “Others assume that I will behave aggressively because of my race.” Other scales used a more subtle approach, such as Kaholokula et al.’s studies (33-34) completed with Native Hawaiian populations which prefaced the modified Oppression Scale with, “The statements below on this form ask how you feel people with power have tended to treat you and others as Native Hawaiians…” It then lists several statements such as “They don’t give us equal rights” and “They keep us from living the way we want.” The MIRE, created for indigenous Australians (53), takes a similar approach by asking, “How often are you treated unfairly because you are Indigenous in each of the following situation?” Although these instruments specifically tie actions to race, they do not continue to repeat “because of your race” after each situation listed. (33-34,53)

The majority of qualitative studies (n=8) (27,31,36,40,51,57,58,71) used neutral wording or wording that falls in between. For example Browne and Fiske (40) used neutral wording to simply ask their indigenous Canadian participants to describe both a “model” and “contrary”
healthcare situation they experienced. Although they did not specifically ask about racial
discrimination, every interviewee shared experiences or observations of racial discrimination.
Vukic et al. (58) used “in between” wording, asking participants, “Tell me about your experience
of being an Aboriginal nurse in the Atlantic Canadian health care system.”

2.4.2.3 Timeframe

The timeframe used when accessing participants’ experiences with racial discrimination
included none (n=20) (25,30,32-33,35-36,38,43,51,53,56,58-63,70,74,76) ever/lifetime (n=8)
(26,27,31,37,45,49,52,73), six months to one year (n=9) (29,42,44, 55,66-67,68,72,77), and
contextual time frames (n=6) (40,57,64-65,71,75) including: during work/military service
(65,75), when obtaining healthcare (40,57), and when participants were school aged (64,71). A
mix of timeframes were used in three studies, using lifetime along with: none, (34) current school
year, (41) and five-year timeframes. (69) Few studies explained why they used a particular
timeframe. However Crawley et al.’s study (69), which included both lifetime and five-year
timeframes, explored the relationship between racial discrimination and utilization of routine
health screenings. They hypothesized that more recent experiences with racial discrimination,
compared to a person’s lifetime experience, would have a stronger association with current health
care utilization outcomes. Also, Paradies & Cunningham (53) provided justification for using no
timeframe when they were measuring racial discrimination and health in indigenous Australians.
They explained that when trying to assess discrimination throughout a person’s lifetime, it was
found that using “ever” or “lifetime” as timeframes could be difficult for participants to answer
and lead to underreporting. They also explained when exploring racial discrimination’s
relationship to health, it was important to assess events throughout a person’s lifetime, as it can
have long-lasting effects on health. Lastly, authors of a study done with indigenous Canadians
explained that they chose to use a one-year timeframe because it was found that their study
population had a high probability of experiencing a great deal of racial discrimination over their
lifetime. Researchers therefore decided that a truncated time frame would yield more variation in
the frequency of experiencing racial discrimination among participants (44).

2.4.3 Content-Oriented Results

2.4.3.1 Collective experiences with racial discrimination

The majority of studies reviewed (n=31) only asked about the participants’ individual
experiences with racial discrimination. (27,29,30,32,35,37,40-41,43,45,49, 51-52,56-57,59,61-
64,67-77) An additional 12 studies (26,31,34,36,38,42,44,45,53,58,60, 65,66) inquired about both
individual and collective experiences, two studies (33,55) measured only collective experiences, and one study did not report this information (25).

The majority of studies that only measured individual experiences (n=24) (27,29,30,32,40,41,43,51,56,57,61-64,67-77) were done with special populations (e.g., youth, sexual minorities, and multiethnic populations) or were measuring racial discrimination in specific contextual timeframes.

One of the studies only measuring collective experiences (34), used a modified version of the Oppression Scale with Native Hawaiians. The 6-items in this scale asked respondents to assess how they are treated and perceived by others collectively “as Native Hawaiians.”

Other examples of items that assessed collective experiences include: “Other Australians don’t care about the hardships faced by people of my culture” (used by Bodkin-Andrews et al.(38) with indigenous Australian youth) and “Have you or any other people in this house had to worry about racism in the last year?” (used by Priest et al. (55) with indigenous Australians).

Chae et al. (60) modified the validated Everyday Discrimination Scale, which originally only measured individual experiences with racial discrimination, to also assess collective experiences, adding the previously developed item, “How often have you seen friends of the same race treated unfairly because of their race?”

2.4.3.2 Unique experiences of racial discrimination

Scales created especially for indigenous or API communities—including the Subtle and Blatant Racism Scale for Asian Americans (SABR-A) (63), the Measure of Indigenous Racism Experiences (MIRE) (42,53) and Microaggression Distress Scale (26)— included items tapping uniquely API experiences of racial discrimination. For example, the SABR-A included: “In America, I am expected to excel in academics because I’m Asian” and “In America, I am told ‘you speak English so well’ because I’m Asian.” Yoo et al. (2010) (63) found that the SABR-A better assessed experiences of racism unique to Asian Americans than other standardized scales, including the Brief Perceived Ethnic Discrimination Questionnaire - Community Version (PEDQ). The PEDQ is widely used validated scale originally created for multiethnic populations and validated with Blacks, Latinos, and Asians. (78)

A unique aspect of the MIRE, a validated tool created for indigenous Australians, is it allowed respondents to “….write, draw, sing or paint about it” as an option of response to questions about racial discrimination, an option based on findings from another study with indigenous Australians that these culturally appropriate options were preferred and appreciated (42,53). The MDS was created specifically for the American Indian and Alaskan Native and
included examples of discrimination not often included in other scales including “being told to ‘lighten up’ or ‘get a sense of humor’ about Indian mascots or logos (26).”

As mentioned earlier, several researchers modified instruments validated in African American populations to address cultural preferences unique to their study population. For example, based on feedback from community members, a study using a scale based on the Experiences of Discrimination added open-ended questions to allow indigenous participants in Canada to expand on their experience with discrimination in several situations (43). A researcher working with an API population modified the Everyday Discrimination Scale by adding, “People assume my English is poor” (61). They explained that this was previously found to be a common microaggression experienced by API community members (61).

2.5 Discussion

The existence of racial discrimination in America and its negative effects on health and wellbeing has come to the forefront of our national conversation. It is important to include everyone in this discussion, including often underrepresented or ignored population groups, such as Micronesians. The literature on racism and health is growing, yet limitations in measuring racial discrimination continue with a call for the creation of tailored tools for unique study populations (3, 5-6, 8). Based on this review, we have come to several conclusions relating to the most appropriate data collection methods and items to include in a tool to measure racial discrimination in Micronesians. The conclusions are organized to answer the three questions posed in the introduction: 1) What data collection format, wording, and timeframe are the most appropriate to use with the indigenous, API, and Micronesian populations to assess experiences with racial discrimination?; 2) How have researchers measured collective experiences with racial discrimination?; and 3) How have researchers incorporated examples of experiences with racial discrimination unique to their study population’s culture?

2.5.1 Process oriented: Data collection method, wording, and timeframe

This review supports the idea that the use of face-to-face interviews, both race salient and neutrally worded items, and multiple timeframes is likely to be the most appropriate to use with indigenous, API, and Micronesian populations. First regarding face-to-face interviews, not only did the majority of studies in this review use this method, but Huria et al. (51) also explained face-to-face interviews respect indigenous protocols. Using this methods is also supported by the finding that the majority of studies using other methods (i.e. written surveys or computer-assisted interviews) were completed with study populations where indigenous or API communities were
not the primary target population or with special populations such as youth, gay, or sexual minorities that may prefer greater anonymity.

The caveat to using face-to-face interviews is that the presence of an interviewer may increase barriers to individual sharing of true feelings about racial discrimination, especially if that interviewer is from an outside culture. (5) Therefore, it may be useful to use peer interviewers to conduct interviews at community meeting places, as Priest et al. (56) did when working with indigenous Australians. Several researchers working with indigenous populations (52,56,59) also highlighted the importance of having participants choose the interview site to help increase power sharing between participants and researchers. This review supports consulting with community members as to which method is most appropriate, as some researchers found a mix of methods were needed depending on needs of participants, which we hypothesize may include such things as transportation or increased anonymity.

Secondly, both race-neutral and race-salient wording may be most appropriate as they have been found to measure different aspects racial discrimination. The use of open-ended question using neutral wording will allow participants to share their unique stories of discrimination in their own words, which may additionally help to honor their oral traditions. When posing items that directly connect experiences to race, we hypothesize it may be appropriate to use a more subtle approach used by several studies, of prefacing a section with the connection to race rather than attaching it to each item. This is also supported by other work which suggest that scales that blatantly attach “because of your race” to each item can lead to participants either over- or under-reporting experiences with discrimination. (4)

Lastly, regarding multiple timeframes, the best choice depends on the research question. Lifetime time frames may better capture the long terms effects racial discrimination has on health, and more particularly using an undefined timeframe may be less confusing than using the timeframes of ever or lifetime. (53) However, when studying association with healthcare utilization Crawley et al. (69) reasoned it may be more appropriate to use a shorter time frame.

2.5.2 Collective experiences

The majority of studies measuring collective experiences with racial discrimination used one item to inquire about the exposure of the participant’s friends, family, or ethnicity to racial discrimination. Only two studies, both lead my Koholokula used a modified scale to assess collective experiences. We believe this is a critical addition to any studies including communities with traditionally collectivist cultures. (20)
An additional technique not included in any of the studies in this review that may be very useful with collectivist communities is one used by The Telephone-Administered Perceived Racism scale (79) adapted from the widely used Perceived Racism Scale (80). This instrument was designed and validated for African American working women and uniquely explored collective concern by asking women about harmful repercussions of racial discrimination on their children. In our previous, anecdotal experiences working with the Micronesian community regarding betel nut and tobacco use, participants were more receptive about sharing concern for their children rather than for themselves. This may be a common trait in other indigenous and API communities, and asking about concern for children because of racial discrimination should be considered when working with these populations.

2.5.3 Incorporating experiences unique to the study populations’ culture

The importance of including items assessing discriminations unique to the study population’s culture was highlighted by the fact that all the studies in this review that used measurement tools created specifically for their study population’s race/ethnicity (26, 38, 42, 53, 63) included unique culturally specific items. As the Gee et al. (3) review of the racial discrimination literature on Asian Americans explained, it is important to find a balance between having a tool that includes appropriate examples of racial discrimination for your population, but is general enough for comparative research. All scale incorporated these unique examples as adding them to a list of experiences and one scale added a culturally appropriate reaction to racial discrimination unique to their study populations’ culture.

2.6 Limitations

To the best of our knowledge this, is the first review of measuring racial discrimination specifically in indigenous and API groups. Our findings regarding limitations across studies are consistent with previous literature reviews on racial discrimination and health (2, 4). We also found that there are many instruments using different timeframes, measuring various aspects of racial discrimination, and with assorted numbers of items using different wording. We understand that, due to word limitations, it is hard to include justifications for each decision a researcher makes, such as whether to use face-to-face interviews or written surveys. However, as we try to understand which methods are best for certain study populations, it is vital that this information be shared.

Our review may have been limited because we only used two databases and limited search terms. Also, our inclusion criteria identified a wide variety of populations, including
studies with multiethnic populations that may not have tailored items or methods to indigenous or API participants. However, despite limited sources and search terms, we identified a relatively large number of studies using a variety of data collection methods and items.

2.7 Conclusions

This study reviewed the literature to better understand which methods, items, and/or scales are most appropriate to measure racial discrimination for Micronesians. Although we identified several examples of how others have measured collective experiences with racial discrimination, we noted a lack of multiple itemed scales assessing this construct. We also found a gap in the literature in terms of authors’ justification of choice of methods and items, so we do not know if choices were made for logistical, practical, cultural, or other concerns. The findings of this review may be of particular interest to those measure discrimination among Micronesians, indigenous, Asian Pacific Islander, or distinct cultural communities.
Figure 2.1: PRISMA 2009 Flow Diagram

Identification

Records identified through database searching (n = 1,890)

Records after duplicates removed (n = 1,303)

Records excluded (n = 1,206) because: not about racial discrimination, not published in peer reviewed journals, not published in English, and not done with one of our target populations

Records identified through other sources (n = 4)

Screening

Records screened (n = 1,303)

Records after duplicates removed (n = 1,303)

Screening

Records excluded (n = 1,206) because: not about racial discrimination, not published in peer reviewed journals, not published in English, and not done with one of our target populations

Eligibility

Full-text articles assessed for eligibility (n = 97)

Full-text articles excluded, with reasons (n = 44) because: didn’t use racial discrimination measurement tool, not about racial discrimination, focused on discriminatory attitudes towards indigenous populations in non-indigenous populations, not completed with our target populations, measured reverse racial discrimination

Included

Studies included in qualitative synthesis (n = 53)

For more information, visit www.prisma-statement.org

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<table>
<thead>
<tr>
<th>First Author, Year</th>
<th>Population - % of Population of Interest If Not 100% (Special Populations If Not General Adults)</th>
<th>Type of Study</th>
<th>Study Size</th>
<th>Validated Instrument</th>
<th>Scale, Instrument, and/ or Study</th>
<th>Number of Items</th>
<th>Data Collection Format (used any race concordant interviewers)</th>
<th>Timeframe</th>
<th>Used Race Salient Wording</th>
<th>Measured Individual or Collective Racial Discrimination</th>
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</thead>
<tbody>
<tr>
<td>Alabi, 2015</td>
<td>Multiethnic - 2.9% Asian; .7% Native American (librarians)</td>
<td>Quantitative</td>
<td>n=139</td>
<td>Yes-modified</td>
<td>Racial and Ethnic Microaggression Scale</td>
<td>40</td>
<td>Written survey: Online (n/a)</td>
<td>Contextual: While working as a librarian</td>
<td>Yes</td>
<td>Both</td>
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<tr>
<td>Baba, 2014</td>
<td>Indigenous: Aboriginal and Torres Strait Islanders in Australia</td>
<td>Qualitative</td>
<td>focus groups n=21; interviews n=11</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>Interviews: Focus group and face-to-face at health centers (didn't mention)</td>
<td>None</td>
<td>No</td>
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<td>Becares, 2013</td>
<td>Indigenous: Maori in New Zealand</td>
<td>Quantitative</td>
<td>n=3160</td>
<td>No -previous used with similar population</td>
<td>2006/7 New Zealand National Health Survey</td>
<td>5</td>
<td>Interviews: Face-to-face (didn't mention)</td>
<td>Ever/Lifetime</td>
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<td>Individual</td>
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<td>Bergman, 2007</td>
<td>Multiethnic: 20% Asian; 20% NA/AN (active-duty military personnel below the rank of admiral or general with at least six months of service)</td>
<td>Quantitative</td>
<td>n=5000</td>
<td>No - previously used with similar population</td>
<td>Based on Sexual Experiences Questionnaire</td>
<td>25</td>
<td>Written survey: mail (n/a)</td>
<td>One year</td>
<td>Both</td>
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<td>First Author, Year</td>
<td>Population</td>
<td>Type of Study</td>
<td>Study Size</td>
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<td>Number of Items</td>
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<td>Timeframe</td>
<td>Used Race Salient Wording</td>
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<td>Bodkin-Andrews, 2011</td>
<td>Indigenous: in Australia (youth)</td>
<td>Quantitative</td>
<td>n=1,200 (Indigenous n=278)</td>
<td>Yes-for Indigenous</td>
<td>Perceived Discrimination and Multiculturation Scale</td>
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<td>Written survey: Questions read over loudspeaker (n/a)</td>
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<td>n=10</td>
<td>n/a</td>
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<td>Interviews: Face-to-face (yes)</td>
<td>Contextual: Healthcare</td>
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<td>Multiethnic: 5% Southeast Asian and 2% AI</td>
<td>Quantitative</td>
<td>n=9,959 (SEA n=461, AI n=203)</td>
<td>Yes</td>
<td>Experiences of Discrimination</td>
<td>19</td>
<td>Interviews: Telephone and face-to-face with AI</td>
<td>One year</td>
<td>Both</td>
<td>Individual</td>
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<td>Castagno, 2005</td>
<td>Indigenous: AI/AN (women students and faculty)</td>
<td>Qualitative</td>
<td>Focus groups n=12</td>
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<td>n/a</td>
<td>n/a</td>
<td>Interviews: Focus groups with students and face-to-face with faculty (yes)</td>
<td>None</td>
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<td>Asian American</td>
<td>Quantitative</td>
<td>n=1,977</td>
<td>Yes-for Asians</td>
<td>Everyday Discrimination Scale</td>
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<td>Interviews: Face-to-face and phone (yes)</td>
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<td>Yes -for Indigenous</td>
<td>Microaggressions Distress Scale</td>
<td>33</td>
<td>Interviews: Computer-assisted in location chosen by participant or at the study site</td>
<td>Ever/Lifetime</td>
<td>Both</td>
<td>Both</td>
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<td>Population</td>
<td>Type of Study</td>
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<td>API (college students aged 18-35)</td>
<td>Quantitative</td>
<td>n=140</td>
<td>Yes</td>
<td>Everyday Discrimination Scale</td>
<td>10</td>
<td>Written survey: Online (n/a)</td>
<td>None</td>
<td>No</td>
<td>Individual</td>
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<td>Choi, 2013</td>
<td>Multiethnic: 33% API (gay men)</td>
<td>Quantitative</td>
<td>n=1196 (API n=393)</td>
<td>Yes</td>
<td>2008/09 Ethnic Minority Men's Health Study</td>
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<td>Interview: Computer-assisted (n/a)</td>
<td>One year</td>
<td>Yes</td>
<td>Individual</td>
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<td>Multiethnic: 32% Asian, 5% AI/AN in US</td>
<td>Quantitative</td>
<td>n=8,051 (Asian n=2,601, NA/AN n=420)</td>
<td>No</td>
<td>2003 and 2005 California Health Interview Survey</td>
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<td>Interviews: Telephone (n/a)</td>
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<td>Indigenous: in Australia</td>
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<td>2008-9 National Aboriginal and Torres Strait Islander Survey based on MIRE</td>
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<td>Both: Computer-assisted interviews computer and paper surveys for remote areas (n/a)</td>
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<td>Currie, 2012</td>
<td>Indigenous: First Nation, Metis, Inuit, Aboriginal in Canada (college students aged 18-49)</td>
<td>Quantitative</td>
<td>n=371</td>
<td>Yes-modified</td>
<td>Experiences of Discrimination</td>
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<td>Written survey: In person (n/a)</td>
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<td>Quantitative</td>
<td>n=60</td>
<td>Yes-modified</td>
<td>Experiences of Discrimination</td>
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<td>Written survey: In person (n/a)</td>
<td>One year</td>
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<td>Grandbois, 2012</td>
<td>Indigenous: NA (elders)</td>
<td>Qualitative</td>
<td>n=8</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
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<td>Ever/Lifetime</td>
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<td>Asians (gay men)</td>
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<td>None</td>
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<td>Han, 2014</td>
<td>Multiethnic: 30% API</td>
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<td>n=1,196</td>
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<td>Hansen, 2010</td>
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<td>n=13,703</td>
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<td>2003/04 Population based SAMINOR Study</td>
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<td>Harris, 2012</td>
<td>Indigenous: 29% Maori in New Zealand</td>
<td>Quantitative</td>
<td>n=24,988</td>
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<td>2002/03 and 2006/07 New Zealand National Health Survey</td>
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<td>Johansson, 2006</td>
<td>Indigenous: AI/AN (1.9% AI/AN, 3.3% AI/AN + White)</td>
<td>Quantitative</td>
<td>n=47,338</td>
<td>No</td>
<td>2001 California Health Interview Survey</td>
<td>2</td>
<td>Interviews: Telephone (n/a)</td>
<td>One year</td>
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<td>Quantitative</td>
<td>n = 114</td>
<td>Yes</td>
<td>Daily Racial Microaggressions Scale, Short Form</td>
<td>28</td>
<td>Written survey: Online (n/a)</td>
<td>None</td>
<td>No</td>
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<td>Kaholokula, 2010</td>
<td>Native Hawaiians</td>
<td>Quantitative</td>
<td>n = 94</td>
<td>Yes-modified</td>
<td>Modified Oppression Scale</td>
<td>6</td>
<td>Written survey: self (n/a)</td>
<td>None</td>
<td>Yes</td>
<td>Collective</td>
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<td>Kaholokula, 2012</td>
<td>Native Hawaiians</td>
<td>Quantitative</td>
<td>n = 146</td>
<td>Yes-modified</td>
<td>Modified Oppression Scale</td>
<td>10</td>
<td>Written survey: self (n/a)</td>
<td>Both: None and Ever/Lifetime</td>
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<td>Kohli, 2012</td>
<td>Multietnic: 44% Asian American (adults who attending school in US)</td>
<td>Qualitative</td>
<td>n = 41 (Asian n = 18)</td>
<td>No</td>
<td>No survey or study name but measured racial microaggressions surrounding name</td>
<td>n/a</td>
<td>Both: Interviews and short answer surveys through email</td>
<td>Contextual: School age</td>
<td>No</td>
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<td>Mccubbins, 2012</td>
<td>Native Hawaiians</td>
<td>Quantitative</td>
<td>n = 367</td>
<td>Yes-modified</td>
<td>Everyday Discrimination Scale in 2007 Hawai'i Health Survey</td>
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<td>Interview: Telephone (n/a)</td>
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<td>Mellor, 2004</td>
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<td>n=34</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>Interviews: Face-to-face venue chosen by participant (no)</td>
<td>Ever/Lifetime</td>
<td>Yes</td>
<td>Individual</td>
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<td>Mybra, 2014</td>
<td>Indigenous: NA (parents and children)</td>
<td>Qualitative</td>
<td>n = 20</td>
<td>n/a-but used with other similar populations</td>
<td>Lifeline interviews - stories unfold sequentially</td>
<td>n/a</td>
<td>Interviews: Face-to-face (yes)</td>
<td>Ever/Lifetime</td>
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<td>Both</td>
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<td>Nadal, 2011</td>
<td>Multiethnic: 34% API, mostly Filipino</td>
<td>Quantitative</td>
<td>n = 443</td>
<td>API n=151</td>
<td>Racial and Ethnic Microaggressions Scale</td>
<td>131</td>
<td>Written survey: Online (n/a)</td>
<td>6 months</td>
<td>Both</td>
<td>Individual</td>
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<td>Paradis, 2008</td>
<td>Indigenous in Australia</td>
<td>Quantitative</td>
<td>n=312</td>
<td>Yes-for Indigenous</td>
<td>MIRE part of Darwin Region Urban Indigenous Diabetes study</td>
<td>31</td>
<td>Both: 61% interview and 39% written survey (didn't mention)</td>
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<td>Paul, 2014</td>
<td>Multiethnic: 33% API (gay men)</td>
<td>Quantitative</td>
<td>n = 1196</td>
<td>API n=393</td>
<td>2008/09 Ethnic Minority Men's Health Study</td>
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<td>Interviews: Computer-assisted (n/a)</td>
<td>Ever/Lifetime</td>
<td>Yes</td>
<td>Individual</td>
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<td>Priest, 2010</td>
<td>Indigenous: Aboriginal and Torres Strait Islander in Australia (families with child under 7)</td>
<td>Quantitative</td>
<td>n=618</td>
<td>Yes</td>
<td>Negative Life Events Scale in the 2003/04 Housing Improvement and Child Health study</td>
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<td>Interviews: Face-to-face (yes)</td>
<td>One year</td>
<td>Yes</td>
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<td>Priest, 2011</td>
<td>Indigenous: Aboriginal and Torres Strait Islander in Australia (youth 12-26)</td>
<td>Quantitative</td>
<td>n=172</td>
<td>No</td>
<td>Victorian Aboriginal Health Service’s Young People’s Project</td>
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<td>Interviews: Face-to-face at community meeting places (yes)</td>
<td>None</td>
<td>Yes</td>
<td>Individual</td>
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<tr>
<td>Ro, 2013</td>
<td>Multiethnic: 34% API (gay men)</td>
<td>Qualitative</td>
<td>Focus group n=47 (API n=16); AND interviews n=35 (API n=12)</td>
<td>n/a</td>
<td>2005 Ethnic Minority Men’s Health Study</td>
<td>n/a</td>
<td>Interviews: Focus group and face-to-face (didn't mention)</td>
<td>None</td>
<td>Yes</td>
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<td>Sohn, 2008</td>
<td>Multiethnic: 12% API (veterans)</td>
<td>Quantitative</td>
<td>n = 1,737 (API n=213)</td>
<td>No-previous used with similar population</td>
<td>2001 Veteran Identify Program Survey</td>
<td>3</td>
<td>Interviews: Telephone (n/a)</td>
<td>Contextual: During past military service and last health visit</td>
<td>No</td>
<td>Individual</td>
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<tr>
<td>Tang, 2008</td>
<td>Indigenous: 77% Aboriginals in Canada (patients and staff of Emergency Department)</td>
<td>Qualitative</td>
<td>n=82 (Patients n=44 (Aboriginal n=34) and Staff n=38)</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>Interviews: Face-to-face (didn't mention)</td>
<td>Contextual: Surrounding healthcare experience</td>
<td>No</td>
<td>Individual</td>
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<td>Torres-Harding, 2012 (identified through other sources)</td>
<td>Multiethnic: 8.2% API (college students)</td>
<td>Quantitative</td>
<td>n =377 (API n=31)</td>
<td>Yes</td>
<td>Racial Microaggressions Scale</td>
<td>35</td>
<td>Written survey: in person paper/pencil and online (n/a)</td>
<td>None</td>
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<td>Tran, 2013</td>
<td>Multiethnic: including large API and small NA in US</td>
<td>Quantitative</td>
<td>Yes-modified</td>
<td>Experiences of Discrimination</td>
<td>19</td>
<td>Interview: Telephone (n/a)</td>
<td>One year</td>
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<td>Individual</td>
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<td>Vukic, 2012</td>
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<td>Qualitative</td>
<td>n=22</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>Interviews: Face-to-face (yes)</td>
<td>None</td>
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<td>Whitebeck, 2001</td>
<td>Indigenous: Native American (parent and children aged 9-16)</td>
<td>Quantitative</td>
<td>n=195</td>
<td>No - approved by tribal governments and advisory board</td>
<td>No survey or study name but measured global, authority, and school discrimination</td>
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<td>Interviews: Face-to-face (yes)</td>
<td>None</td>
<td>Yes</td>
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<td>Yoo, 2012 (identified through other sources)</td>
<td>API (youth)</td>
<td>Quantitative</td>
<td>Yes-for Asians</td>
<td>Subtle and Blatant Racism Scale for Asian Americans</td>
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<td>Written survey - In person</td>
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<td>Yoshikawa, 2004</td>
<td>API: South Asian, Southeast Asian, Pacific Islander (gay men)</td>
<td>Quantitative</td>
<td>n=192</td>
<td>No-previous used in similar population and based off of Diaz et al., 2001</td>
<td>No survey or study name but measured racism and anti-immigrant discrimination</td>
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<td>Written survey: approached at venues common to gay API men (recruiters API)</td>
<td>Contextual: Childhood and adulthood</td>
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<td>Individual</td>
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<tr>
<td>Ziersch, 2011</td>
<td>Indigenous: Aboriginal and Torres Strait Islanders in Australia</td>
<td>Qualitative</td>
<td>n=153</td>
<td>Both</td>
<td>Adelaide Aboriginal and Torres Strait Islander Health Project - included MIRE</td>
<td>n/a</td>
<td>Interviews: Face-to-face at venues chosen by participant (yes)</td>
<td>None</td>
<td>Yes</td>
<td>Individual</td>
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Chapter 3: Study 2

Experiences of racial discrimination and other barriers to healthcare for Hawai‘i’s Chuukese community: Perspectives from community members and the providers that serve them

3.1 Abstract

**Purpose:** Inequitable access and quality of health care remains across racial/ethnic groups in the United States (US). A growing body of literature supports the theory that racial discrimination is one critical barrier to high quality health care. This research looks to better understand the healthcare experiences of healthcare for Chuukese in Hawai‘i. It explores barriers to healthcare, including racial discrimination, and possible solutions to overcoming these barriers. A second major aim of this study was to identify methods, words, phrases, and experiences to help create a culturally appropriate measurement tool to assess racial discrimination with the Chuukese community in future quantitative research.

**Methods:** Purposive and referral sampling was conducted to identify Chuukese community members and healthcare providers that serve them. Community liaisons, trusted Chuukese leaders in their community, were also used to identify community participants and interpret when necessary. Semi-structured interviews using open-ended questions were conducted until thematic saturation was reached. Framework analysis was used to analyze the data.

**Results:** Twenty interviews were completed (12 with community members and 8 with healthcare providers). A long list of barriers to Chuukese individuals accessing healthcare were identified by both groups including: communication barriers, health literacy, biases, and healthcare coverage. Several phrases such as being treated “not nicely” or “rudely” were identified as common ways to talk about racial discrimination in this community. Both providers and community members also shared experiences of racial discrimination perpetrated towards Chuukese community members both in and out of the healthcare system.

**Conclusion:** There are many barriers, including racial discrimination, to Chuukese accessing healthcare in Hawai‘i. Racial discrimination is pervasive throughout many areas of their lives.

3.2 Introduction

Inequitable access and quality of health care remains across racial/ethnic groups in the United States (US). (1-2) A growing body of literature supports the theory that racial discrimination is one critical barrier to high quality health care. (3-4) An increase in the experience of racial discrimination has been associated with decreased access to, (5) quality of, (6) and satisfaction with care. (4) Although the
vast majority of racial discrimination research in the US has been done in African American communities, (3,7) a growing number of studies consider racial discrimination and health across diverse racial and ethnic minority groups including Latinos, (3) Native Hawaiians, (8-10) Asian Americans, (11) Native Americans. (12) Yet, to our knowledge, no studies measure racial discrimination in Chuukese populations living in the United States (US).

As explained in Chapter 1, Chuukese are a Pacific Islander population that is rapidly growing in the US. They originate from Chuuk, a group of islands in the middle of the Pacific Ocean. Chuuk is one of four states within the Federated States of Micronesia (FSM), one of three Micronesian nations (including Republic of Palau and Republic of the Marshall Islands) that signed Compacts of Free Association (COFA) with the US. The Compacts, signed in the 1980’s and 90’s, gave the US certain rights and responsibilities towards the participating Micronesian nations, including providing citizens unlimited entry into the US with the right to legally work without visas, health clearances, or time limits. (13)

This political arrangement follows the US’s damaging geopolitical involvement in this region, (14) including the military’s nuclear testing and the subsequent disruption of their traditional economies, native cultures, and subsistent diets. (13) Chuukese, living both in the US and their national homelands suffer from a disproportionate burden of both chronic and infectious diseases, including certain cancers, diabetes, and chronic infectious diseases. (15) It is likely that health inequities suffered by Chuukese can be, in part, explained by experiences of racial discrimination both in and out of the healthcare system. This is supported by anecdotal evidence of racial discrimination towards the Micronesian community in Hawai‘i detailed in Chapter 1. However, there is little available discrimination research directly collecting information from Chuukese community members, or from those with intimate knowledge of their health and healthcare issues.

To address this gap in the literature and to gain a clearer picture of racially discriminatory barriers to healthcare, and possible solutions, for the Chuukese community, we conducted in-depth interviews with Chuukese community members and well as the health providers that serve them.

All interviews were framed towards answering three questions: 1) What are the barriers, including racial discrimination, to obtaining needed healthcare for Chuukese in Hawai‘i ?; 2) What methods, concepts, words, and phrases can be utilized to help facilitate Chuukese individuals disclosing experiences with racial discrimination in future quantitative research?; 3) What are possible solutions to barriers to healthcare, including identifying assets of the Chuukese community?

A second, major aim of this study was not only to better understand the Chuukese community’s experience with healthcare and racial discrimination in Hawai‘i , but to identify possible items and wording to quantify racial discrimination in a larger Chuukese study population with the intent to create a
culturally appropriate measurement tool to assess racial discrimination and health in Hawai’i’s Chuukese community. This is an important step in assessing racial discrimination in this community, as it has been found that racial discrimination measurement tools created for African American or multi-ethnic communities may not include examples of discrimination unique to other communities, and may therefore underestimate their experience of discrimination. (11)

3.3 Methods

This study was approved by the University of Hawai’i at Manoa’s Human Studies Program. All participation was voluntary and participants provided their consent. Precautions were taken to protect the identity of this relatively small group, including de-identifying information such as names, occupations, and location where they received or provided healthcare.

3.3.1 Measurement tool

Two semi-structured interview schedules utilizing open-ended questions were used, one with community members (five questions) and one with health providers (six questions) (Attachment A). Additional probing questions were available if clarification was requested by participants or more detail was desired on a particular subject. This method has been found to be particularly well-suited for in-depth understanding of participants’ perspective. (16) Interviews were conducted one-on-one or in small groups of up to five participants depending on logistics.

An iterative approach was used to collect information, and questions were altered depending on information collected from subsequent interviews. As ethnic minorities may minimize or deny personally experiencing discrimination to appear less vulnerable, (11,17) interviews with community members did not directly ask about discrimination until later in the interview after rapport was established. Participants were also given the option to frame their answers in the context of something that happened to their friend, family, or their community in general. Allowing participants to share stories about their community, rather than themselves, was to help to avoid shame or embarrassment attached to disclosing about personal victimization, (11,18) as well as respect the collectivist identity of the Chuukese culture. (19)

The interview questions for community members were pilot tested with a Chuukese community member to make sure questions were understandable, and that they garnered the information desired. Additional input was informally collected on both community member and provider interview guides, from experts in the field of qualitative research, and those working with Micronesian and other Pacific Islander communities. Input led to rephrasing questions to clarify their meaning or to allow for more in-depth responses.
3.3.2 Sampling

To be eligible to participate, community members had to self-identify as Chuukese, be 18 years or older, live on Oahu, and have personally received healthcare in Hawai‘i or have helped a family member or friend through the system. They also had to speak English or Chuukese. Healthcare providers, including physicians, nurses, community health workers, interpreters etc., were eligible to participate if they self-identified, or were referred by a colleague, as providing health services to Chuukese in Hawai‘i.

To help ensure maximum variation, both referral and purposive sampling were used. Purposeful rather than random sampling is commonly utilized in qualitative research, where rich detailed data are desired. Referral sampling was incorporated, as it has been found to increase participation rates in low socioeconomic and minority populations.

The purposive sampling for community members was based on a study completed with a similar population and was dependent on gender, age, and language. Gender was included as men and women may have different barriers or expectations for health care. Age was divided into two categories, 18-39 and 40 and above, based on findings that Micronesians 40 and older have a high burden of diabetes and heart disease, which we speculated may affect their experience with the healthcare system. Lastly, the ability to comfortably speak in English (yes or no) was used to help stratify participants as the need for interpreters when accessing healthcare can pose a unique set of barriers.

The sampling frame for providers was based on the type of health site at which they were employed and their status as an “insider” or “outsider” to the Chuukese community. The employment site was included since CHCs are usually better equipped than larger hospitals to serving underrepresented communities, including Chuukese. The difference in worksite may affect their employees’ experiences with providing services to Chuukese patients. To capture both emic and etic perspectives, we identified an “insider” as a Chuukese provider who speaks Chuukese, and an “outsider” as a non-Chuukese who does not speak Chuukese.

Community members who fit the purposive sampling criteria were identified through community liaisons. The two community liaisons (a man and a woman) were identified through previous work with the researcher and have strong mutual rapport and trust. Community liaisons were responsible for recruiting participants and interpreting for those who did not feel comfortable conducting the interviews in English. They are both trusted leaders in their communities and helped to facilitate a more candid and in-depth conversation between community members and the interviewer who is Japanese American. Providers who fit the purposive sampling criteria were identified through previous relationships fostered during the investigator’s time as a community health worker, as well as those referred to us by other practitioners.
Interviews were conducted at any site requested by the participant. Most often, providers requested interviews at their place of employment, and community members identified community gathering places or local restaurants. Each participant was given a small gift to thank them for their time and participation.

3.3.3 Analysis

Interviews were conducted until thematic saturation was reached (16) and all purposeful sampling categories were filled by at least one representative. After obtaining the participant’s permission, each interview was recorded and transcribed. When interviews were in Chuukese, an English translation was transcribed and analyzed. In addition, recordings of each interview were reviewed by a bi-lingual research assistant to help ensure interpretation was accurate.

Framework analysis was used to assess the data. (25-26) This format was most appropriate as we went into the research already knowing the questions we wanted to answer. Using the conceptual model for my dissertation as the framework for the analysis of this study, key themes were identified including racial discrimination, access to appropriate healthcare, and health of the Chuukese community. Based off of findings from study one, regarding racial discrimination we were specifically looking for example of racial discrimination common in the Chuukese community that we could add to our measurement tool, as well as words or phrases the community used to talk about their experiences with racial discrimination. Regarding access to appropriate healthcare we were interested in better understanding the community’s barriers to care as well as possible solutions to overcoming these barriers. Framework analysis also provides the flexibility to identify other themes or codes based off of emergent issues from the interviews themselves. (26) Each interview was coded by at least two of three researchers (one was Chuukese). Disagreements on coding were discussed until consensus was reached.

3.4 Results

Interviews were completed with eight health providers and 12 Chuukese community members. One male community member and one male healthcare provider completed the interview; the rest of the sample was female. Providers served in various positions including medical interpreters, physicians, managers, and social workers. Three providers were insiders (of Chuukese ethnicity and able to speak Chuukese fluently) and six worked at CHCs and one worked at both a larger hospital as well as a CHC. The age of community members ranged from 30-65 years old and nine out of the 12 community interviewees did not feel comfortable completing the interview without an interpreter.

Results from both provider and community member interviews will be reported together as they shared many similar stories. For clarity, findings are presented in regards to answering the three original questions posed in the introduction.
3.4.1 Question 1: What are the barriers, including racial discrimination, to obtaining needed healthcare for Chuukese in Hawai‘i?

Both providers and community members reported many barriers to care for the Chuukese community. One insider provider explained, “it’s just layer over layer over layer of disparities, and health problem will rise [from this].”

Some barriers mentioned were common to other communities with low economic resources, including financial barriers leading to poor access to healthy foods and lack of transportation. Other barriers were unique to the Chuukese community, including a lack of education for providers on this burgeoning community. Participants believed this resulted in a lack of understanding of their cultural protocols, such as their need to always put the needs of the family first. Several providers and community members explained that even if they were very sick, if a family issue arose, patients would not show up for their appointments as they would prioritize the family issue first. All providers also highlighted the importance of acknowledging the fact that, because of their unique political relationship with the US, Chuukese are a very different population from the “traditional immigrants” coming to the US, and therefore come with a different set of needs. One outsider provider explained,

Because the US did such a poor job of administering from the trust territory days to the COFA days…we've created a situation where there's just no choice but to leave [their homelands].

Many participants also acknowledge the limited health literacy of Chuukese patients, including a lack of understanding of how our Western health system operates. One community member used an analogy of getting lost on the bus six times to illustrate the complexity of the healthcare system. The interpreter explained,

The time that she get lost…she’s talking about how she misunderstood the whole system and how things work here….you know catching the bus is complicated for her….something that you would figure would be easy, but it’s not easy [so imagine her trying to navigate the health system].

This confusion is in part due to the stark contrasts between the health care systems in Hawai‘i and their homelands. In Chuuk, patients do not have to make appointments or pay to see providers and “there is usually only one hospital for a group of islands.” Thus, they can feel very lost when they are told to see several different doctors at several different sites. Many providers explained that these differences can also lead to individuals who have not grown up here to not “understand the importance of showing up for appointments, especially with specialists.”
Several providers explained this lack of understanding has led to clashes between patients and providers regarding insurance coverage. One provider explained the negative interaction was due to lack of education on both parts:

Some providers might not know the political history and why [Chuukese] are entitled to certain benefits, and patients may misinterpret who is paying for their care. An example was one patient said ‘don't worry my care is free’ and provider got mad and said ‘it’s not free tax payers pay for it!’ And this poor lady was really embarrassed because she didn’t know that was the case and that’s how the health plan worked.

3.4.1.1 Insurance coverage

Another major barrier that was brought up by most participants was insurance coverage. Issues surrounding insurance is not only due to the recent policy change in Hawai‘i which removed the majority of migrants from COFA nations (including those from Chuuk) off of the state Medicaid program, but also the fact that the concept of insurance is very foreign to this community.

We’re not so used to paying... because where we come from everything is free...It is confusing...so once they know about the copay, they kind of back off.

Many community members reported this confusion led them to not pick up their needed medication or seek needed care due to fear of getting a bill they could not afford. One woman shared, No nobody explain to me [about the changes in insurance], but I just hear from other people talking and I just eavesdrop on what they say... Yes I do need [to go to the doctor] because I’ve been having trouble with my legs but I don’t want to go, cause when they write me that letter [describing coverage ending]² I was kind of worried about that.

An outside provider explained:

There are certainly lots of stories floating around of people who gave up on healthcare.... I think partly it's that health insurance coverage is so messed up and so confusing that they just think 'I don't want to be a burden so I'll just quit...I'll quit my dialysis, I'll quit [my] medicine.'

3.4.1.2 Lack of communication

Another common barrier was lack of communication between patient and provider. Some communication issues were derived from languages differences, one provider at a large hospital explained,

Yeah the biggest challenge we have is communication and knowing whether or not they comprehend what we’re trying to tell them... [without interpreters we were] not able to educate them on options that are available for their care. And bearing in mind that they come from a culture that’s very easy

² This letter refers to the letter sent out by Hawaii’s State Department of Human Services informing all non-aged, blind, disabled, or pregnant COFA migrants that they were no longer eligible for the State’s Medicaid program starting March 1, 2015 and had to sign up for one of several health insurance plans through the Affordable Care Act.
going, very laid back, very non-invasive when it comes to deliveries, to come to a medical center like this, especially if they’re a high-risk patient, it’s difficult in trying to have them understand perhaps the severity of their own illness.

Another provider explained how these types of language barriers led to “babies [getting] circumcised when the moms didn’t want it...[and waking up from] surgery and not really knowing what happened.” Another provider shared how lack of interpreters led to a woman being turned away from a domestic abuse hotline, forcing her to sleep with her child at a bus stop to get away from her abusive husband.

Other communication barriers arose from cultural differences. During an interview with a Chuukese community member, he explained the cultural value of making everyone feel comfortable and avoiding confrontation;

There are some people who are afraid of speaking out. They will say yes when they mean no, they will say no when they mean yes. Not because that’s the actual answer, but I think they tell you what they think you like to hear.

Insider providers also explained that in the Chuukese culture one’s health is very private and therefore hard to talk about explaining; “in our culture we kind of keep things to ourselves, yeah, only families can, sometimes even families cannot.” This can cause individuals to be hesitant to talk about their issues in front of interpreters because, “they’re afraid we may know about their problems.”

From an outsider provider’s perspective this cultural difference in talking about health issues can lead to barriers in establishing trusting relationships. As one nurse explained, “they internalize a lot of pain so it’s very difficult to build a relationship with them like most labor and delivery nurses do.”

3.4.1.3 Racial discrimination in healthcare

Racial discrimination both in and out of the healthcare system was a common barrier to receiving needed services for Chuukese community members. Most community participants only had positive things to say about their healthcare experiences especially when they went to the community health centers. However several disclosed negative experiences in health care settings, including one woman who explained when she was at a larger hospital she asked her doctor to take out her birth control implant because it was making her feel sick. The doctor refused to remove it and instead asked her; “Why you wanted to get pregnant again?...I didn’t know if it was because I’m Chuukese that they force me to stay on birth control.”

Several individuals reported front desk staff at both hospitals and health centers being curt or rude with them. One woman explained that, although the medical care was good, the staff “who answers the phone is hard.” For example twice she made an appointment and wrote it down, however when she arrived she was told she had no appointment and the person who she talked to was not there that day so they couldn’t confirm anything which made her question, “Is it me or is it them?” Another woman who
walked in without an appointment was told she had to return the next day, when she explained she couldn’t, the staff member talked to her in a “mean” way.

However, for the most part community members were very hesitant to attribute poor healthcare experiences to racial discrimination. When asked if she thought the poor treatment was due to being Chuukese one woman answered:

_I don’t want to entertain that it’s because [we’re] Chuukese but somehow sometimes I tell myself not to think that way. But maybe, that’s just how the doctors, some of the doctors are, because I have no idea._

Another explained, “I don’t know, maybe I’m old and think too much. I’m sorry for saying this.”

Several providers shared that some healthcare providers hold the stereotype that Chuukese patients won’t come for their appointment. This has directly led to Chuukese patients getting “...the first appointment of the day, the least desirable appointment, because [some staff may] believe they are not going to show up anyway.”

These types of biases may have led one provider’s colleague to refer all her Chuukese patients to other providers, “for very vague reasons.” Like many cases of discrimination, it is hard to prove the underlying reasoning for the person’s action. However, she believed it was due to a “personal bias against the group as a whole without getting to know the individuals.” Other insider providers explained that they witnessed providers who do not seem to care:

“[Some] people are really good and there are other people, [who] are there just doing their job, that’s it… [For example] I’ve seen people when they go to the doctor they just get the medication and they tell me ‘can you please tell them that the more I get this medicine I just sleep?’ And nothing, they just go ahead, the same medication. So I’ve witnessed good and bad.”

3.4.1.4 Racial discrimination in other areas

However some cases of discrimination were more overt and clearly interpreted as racial discrimination. One provider shared about her experiences at a large hospital, “...I can just tell right away that they’re so discriminating on the Chuukese...they say ‘Oh these Micronesians, they have to learn what to eat.’”

In regards to racial discrimination outside the healthcare system, several reported encountering racial discrimination on a daily basis. One provider explained,

_I can tell that people are exhausted. I can tell people are just tired of dealing with [discrimination]...The minute somebody tells me oh they weren't nice to me I think...death by a thousand cuts...those everyday encounters...it’s those daily insults that people have to go through just to get something._

Examples of racial discrimination were shared in almost every aspect of their lives including housing, the justice system, and public agencies. Below we have detailed some of the stories.
**Housing.** Community members reported non-Chuukese getting their “*questions answered faster or rent adjusted faster.*” Some providers attributed this to language barriers, sharing examples of community members signing forms thinking they are moving to a different unit but instead getting evicted from their current housing. However one community member described her experience at the local homeless shelter:

*Just because I’m Micronesian, they mistreated me…they’re very strict on me… It’s as if they treat us like we’re thieves and we have to really guard ourselves too.*

**Justice System.** There were many stories shared where although Chuukese individuals were the victims of crimes they were treated as the criminal by Hawai‘i’s justice system. For example one provider shared a story of a young Chuukese man who was physically attacked, but was blamed for the incident and was eventually evicted from housing. It has led him to feel “*unsafe and depressed*” because he was “*completely targeted.*” Several providers shared stories where Chuukese were “*assumed to be the bad guys*” and subsequently were the only ethnicity who were picked out of the group and reprimanded by police or security guards. There have also been reports of “*police brutality,*” where security physically beat up public housing tenants.

Another provider shared the case of a Hawai‘i prosecutor stating, "*we need to send a message to these Micronesians and impose the harshest sentence on them.*” She went on to explain how this lawyer’s actions highlight that even professionals have biases that can affect their judgment.

**Policies.** In many cases, discriminatory policies were cited as being one of the most dangerous forms of discrimination. One provider explained the danger is that no individual feels personally responsible for the policies yet it can have systematic negative effects. Whether intended or not, unequitable policies essentially send the devastating message, “*we don’t care if you live or die*”. One community member explained,

*I really felt personally that when the state singled out our community to put us on a different health plan, it’s almost like its giving permission to the community to lash out on us.*

Some providers speculated this permission to target the Chuukese community was perpetuated by negative media coverage of this group.

**School.** Several providers shared stories of parents who experienced teachers with negative expectations of their child’s abilities and behaviors just because they’re Chuukese. One mother recounted incidents where teachers and other parents expressed their “*surprise*” that she and her children were Chuukese. When she asked why, they explained because her child was “*so clean*” and she “*wasn’t loud*
like the others.” One insider provider explained how detrimental these low expectations can be for the success of a child:

A 12 year old kid from the islands is considered a man in the eyes of the community, he can provide food for his family. But then he comes here and the system is saying he is nobody, all of a sudden he is taken away all those layers of maturity to this really weakling. And on top of that too, [they] label him that he’s a lost cause, you’re already making him a decision that he will not make it. And then your own mentality is allowing that kid to not move up or not try.

Several providers shared stories of frustrated parents reporting unfair treatment in schools. One provider shared a common story of a Chuukese child being repeatedly bullied and nothing being done despite multiple complaints of the parents to the school. However, the “minute he fought back he was suspended,” leaving parents feeling “helpless and fed up, with some even pulling their children out of school.”

**Public Agencies.** There were many reports of mistreatment at the welfare office. One woman explained:

_Somehow I can feel it that they were not treating [us] the same. They know when you [are] Chuukese and they can put you last even though your paper is telling you 8:15, you can know that you gonna go to meet them at 10:00._

One interpreter explained having a negative exchange with one case worker in particular.

_[There is] one I fear to go in because … he doesn’t really care…[one time] he was telling them ‘Why are you here? Cause no more money in Chuuk, that’s why you’re here?’ [and I interpreted this and he yelled] ‘Why are you talking?! I wasn’t talking to you!’ …I felt so small, I wanted to disappear. [So when I go back there] I think they already know the way I look that I’m Chuukese…I do not want to keep that in mind…but somehow I feel that they are treating [us] somehow different from everybody else… I keep telling myself not to worry about it…but inside me it feels so tense, sorry to say that._

**3.4.2 Question 2:** What methods, words, and/or phrases can be utilized to help facilitate Chuukese individuals disclosing experiences with racial discrimination in future quantitative research?

In several cases community members were unsure if they were being treated unfairly but reported getting a “funny feeling inside.” In many cases they were even apologetic for feeling this way. Most often community members described discrimination as “being treated differently because they were Chuukese,” and of people being “not nice.”

Several providers felt ‘discrimination’ was an appropriate word to use with the Chuukese community, with one insider provider stating, “Micronesians are very familiar with the word discrimination.” Another outside provider reasoned that the longer migrants had been in the US the more
they disclosed about “discrimination and feeling discriminated against, like... why do they always attack us, why is our healthcare in jeopardy? Why don’t we have...parity with other groups?” Other outside providers explained often times it took a lot of “digging” to uncover stories of discrimination:

> Majority of incidents [of racial discrimination] that we hear...come as a side issue...underneath all of those encounters after the third time hearing something...they finally [disclose] ‘I think they treat Micronesian people differently’... I have to draw it out of them because...they don't want to say ‘oh they treated me badly because they're racist’, they're never going to say that.

For the most part, providers felt that clients’ hesitancy to talk to an outside person was understandable due to mistrust of agencies, feelings of shame, and fear of repercussions for reporting. One community member said she did not report a provider’s unfair behavior because she was afraid her services would be cut off so she “just stopped talking.” Another deterrent for people speaking out or reporting is that some people in the community may interpret this as “bringing negative attention their community.”

Providers shared that despite personal discomfort and risk, individuals are more likely to speak out to protect others than to speak out for themselves. Most often people are willing to “let it go” or think “I can handle it” if the incident just affects them, however especially when their children are involved, “parents are willing to stand up and say this is racism, it’s discrimination, it’s affecting my child’s will-being.”

3.4.3 Question 3: What are possible solutions to barriers to healthcare, including identifying assets of the Chuukese community?

As is it is important to build upon existing strengths, this section highlights assets of the Chuukese community. Both providers and community members consistently noted the positive attribute of the Chuukese community having strong connections and support, not only within the family unit but among the larger community as well. In many cases individuals are willing to “sacrifice personally to help family.” One provider explained,

> They always come as a community, I think that’s got a lot of protective factors even from a mental health perspective, they’re very tied to their families, they’re usually very supported.

In respect to this connection, one therapist explained she needed to learn to “navigate how to work with family relationships” when conducting psychotherapy, which is normally done in a one-on-one environment.

Another strength recognized by both community members and providers is the strength in their spirituality and culture. One provider explained, “If you don’t talk about their spirituality in treatment, you’re totally missing the mark.”
One community member shared stories passed down from her family to illustrate the strength of the Chuukese, highlighting their ability to adapt to any type of environment while still holding onto their culture.

*My uncle said, you know you have the best of both worlds. You can never forget who you really are, you can be like that hermit crab ...all over the island he’s navigating itself...[adapting] changing his shell. And that’s like you, you know you can be outside, now you’re wearing pants you’re wearing shirt. You’re not wearing grass skirt or you’re not wearing your lava lava [describe]...but you’re still a Chuukese inside and that’s very important for you to find out what does that look like, what’s that mean to you.*

An outside provider also noted the strength and value in their Chuukese patients’ strong connection to their culture,

*Even in the face of all this adversity, they’re still very connected to who they are as people, and their values, what gives them meaning in life, and that they don’t falter from that.*

Almost all participants highlighted the importance of relationship building and communication. For many providers this meant educating themselves on the Chuukese culture as well as their history. As it stands, even providers who are educated in Hawai‘i are not prepared for the unique needs of this community. One provider explained,

*It’s such a learning curve you know because you sit there and you’re taught one way of doing it and then you realize like ‘no this is not the way that this is gonna go’... [I wish I was told] here’s their history, here’s how they’re impacted by their transitional life in the US, here’s the symptoms that they usually present with because of these reasons, and here’s what we’ve found best approaches or best practices working with this population.*

Many agreed incorporating this education into existing infrastructures including school, orientation, or their yearly cultural competency training for all staff would be beneficial. Instead most often providers have had to educate themselves, either through reading about their history or learning on the job from experiences as well as from other staff and interpreters.

Many highlighted the importance of taking extra time to build trusting relationships, including by providing extra navigational services through the healthcare system and learning how to “really meet each other and understand [each other].” One provider explained, “I almost feel like I have to be that much more of an ambassador...[to let them know] we really do want you here, we really do want to support you.” Other explained the importance of learning a few Chuukese words and incorporating them into their practice to help people feel welcomed. One physician explained that to build trusting relationships you have to be involved in their lives outside of the health center, meaning you go to funerals and celebrations. The importance of practitioners being compassionate was echoed by an interpreter:

*I understand that everything has deadline but please talk nice to them instead of pushing because that’s what just close[s] everything up...if I hear that the doctor or social worker demands something I
try to say it in a nice word to the Chuukese...[because I know] they’d rather suffer than come into the office and get yelled at....they want to get help but they’re afraid.

To help increase communication, both community members and providers stressed the importance of interpreters. When individuals described positive healthcare experiences most often there were interpreters or a familiar face to help explain to them the process. Community health centers have made it a point to hire Chuukese interpreters and other health care staff to help create a safe environment where Chuukese community members feel supported and welcomed. Some have also made changes to their practice and infrastructure to better serve the Chuukese community, including adding an open access provider who can see patients on a walk-in basis.

In regards to directly addressing racial discrimination, one physician explained that overall perspectives surrounding the concepts of health and health care play a role:

And so I suppose that relates to the question... should health care be viewed as a commodity, or should it be viewed as a social good, or should it be viewed as a human right. I think that for myself as a believer in health and health care as a human right, as a social good I try my best to think about it in that way, and try to deliver health care with that in mind.

Another provider explained the importance of having community dialogues, and that if done correctly, sharing stories of racial discrimination can give us,

Power to help change things and not just be like ‘oh this community is complaining’ but harness it in a way that promotes fairness and equality...[We need to] frame racism as a disease of the community, not of the individual.

3.5 Discussion

These interviews gave us a glimpse into the struggles faced by the Chuukese community living in Hawai‘i, both in and out of the healthcare system. This study’s major findings are: 1) barriers to healthcare for this community include: racial discrimination, insurance coverage, lack of knowledge of both patients and providers, and communication issues due to language and cultural differences; 2) racial discrimination is pervasive through many aspects of their lives, yet attributing unfair or unkind treatment to racial discrimination can be difficult; 3) talking about racial discrimination in the context of one’s children or community can be a culturally appropriate way of framing participants’ experience with racial discrimination; and 4) many innovative solutions exist. For instance, relationship building between community members and providers was identified as important. This can be done through effective communication, achieved in part by educating providers on Chuukese culture and history and teaching community members about the western healthcare system and protocols, as well as shifting perspectives regarding healthcare as a human right versus a commodity and racial discrimination as a problem of the community rather than the individual.
Community respondents described how negative interactions, not only in the healthcare system, but throughout many industries essential to people’s lives including housing, education, and the justice system, can lead to fear and mistrust in the community. Provider respondents described how these experiences lead to negative biases and stereotypes in providers. In many cases, the examples of racial discrimination stemmed from communication barriers between patients and providers, leading to misunderstanding, exacerbated by a lack of knowledge, desire, or effort to overcome this potentially amendable obstacle.

This study also highlighted the difficulty of discussing the sensitive topic of racial discrimination. In many cases it was hard, for both providers and community members, to attribute unfair or unkind treatment to racial discrimination. This is consistence with findings that it can be difficult for individuals to assess if unfair treatment should be attributed to racial discrimination. (11,17)

Although community members disclosed several stories of discrimination during the interviews, community liaisons shared that after almost all of the interviews, community participants discussed many more issues of discrimination among themselves that they did not disclose during the interview. This hesitancy to divulge is consistent with other findings from the literature that participants may minimize experiences racism. (11,17) It may also reflect cultural and religious beliefs of not wanting to complain or talk poorly of others, being uncomfortable talking about these issues in an unnatural research setting, and possibly the fear of negative repercussions of disclosing stories of discrimination. Fortunately due to the trusting relationships they fostered with their patients, providers could share with us stories of discrimination that their patients previous shared with them.

3.6 Limitations

As an outsider, the interviewer’s presence could have made community participants uncomfortable as other studies have found that participants are less likely to share their true feelings on race issues with race discordant interviewers. (6) To help address this issue we met at locations that participants chose, which was suggested as a way to share power and make participants more comfortable.(27) Prior to conducting interviews we also pilot tested our questions and methodology with several Chuukese community members for appropriateness. Lastly, our liaisons, who were trusted community leaders, were present at all interviews conducted with Chuukese community members, even those where interpreters were not needed. Implementing these protocols helped to increase the ease of talking about this very sensitive subject with a typically discreet community.

Another limitation was that the majority of community participants were women. This may be partly due to the fact that our interviewer is female and there are distinct gender divisions in the Chuukese culture. However most likely a more important factor was our male community liaison, who was identified to recruit and interpret for our male participants, could not participate as much as the female
liaison due to personal obligations. Therefore our findings may not be generalizable to Chuukese men. However the information we obtained from health providers pertained to both Chuukese men and women, and so the majority of examples of barriers to care and racial discrimination are relevant to both genders.

**3.7 Conclusions**

A long list of barriers to Chuukese obtaining healthcare in Hawai‘i, as well as solutions to these barriers, were identified by both community members and providers. One solution highlighted was building trusting relationships with Chuukese community members. It was suggested that this can be done through increasing communication, both though the use of interpreters as well as by educating; patients need to learn how to navigate the healthcare system and providers need to learn the history and communication styles of the Chuukese community. We suggest education of patients may be done through the use of healthcare navigators or programs orienting them to the healthcare system and to their civil rights within the US. Education of provider may be done through cultural sensitivity trainings at worksites and credential programs, and should be done a regular basis.

Findings from this study also highlight the importance of creating a culturally sensitive measurement tool and protocol if we want to explore relationships between racial discrimination and health with the larger Chuukese community in the future. This may include using key phrases such as, “people being not nice to you” as well as specific examples of racial discrimination such as, “unable to see a specialist because I’m Chuukese.” It may also be helpful to discuss racial discrimination as a collective experience and also to frame it as a concern for respondents’ children rather than respondents simply as individuals.

Finally, this study revealed that racial discrimination is a barrier for the Chuukese community, not only in Hawai‘i’s healthcare system but in other areas of their life as well. Although there may be true feelings of animosity and hatred, many of these issues appear to arise from misinformation, assumptions, and indifference. To help overcome these discriminatory experiences, policies supporting equity should by enacted, including policies ensuring affordable access to insurance coverage for Chuukese and other migrants from the freely associated Micronesian nations. Interviews from both providers and community members underline the direct connection between ample insurance coverage and accessing health services. Policies must also be put in place to create safe spaces where individuals can report and constructively discuss cases of injustice without fear of negative repercussions. In addition to these policies, we must continue this sometimes uncomfortable conversation regarding discrimination and inequity with everyone, so together we can become a healthier community as a whole.
Chapter 4: Study 3

Experiences with Individual and Collective Racial Discrimination for Chuukese Migrants: Is there an association with health outcomes?

4.1 Abstract

Objective: To assess the relationship between collective and individual racial discrimination with self-reported physical and mental health outcomes in Hawai‘i's Chuukese community.

Methods: A measurement tool created from information collected from studies 1 and 2 was used to conduct face-to-face interviews with Chuukese adults. Three variables were created to measure racial discrimination: two assessed individual (level and frequency) and one assessed collective experiences. Community liaisons were used to identify participants and interpret when necessary. SPSS was used to run data analysis. Bivariate associations between demographic, moderating, independent, and dependent variables were explored. Multivariate logistic regression was run to test if relationships between independent variables and health outcomes were significant after controlling for demographic characteristics, access to health, and current tobacco use.

Results: A total of 71 interviews were included in the analysis. All three independent variables were significantly associated with bad mental health. Only collective experiences and frequency of individual experiences with racial discrimination were significantly associated with bad physical health. Many of these relationship were still significant after controlling for other variables. When individual and collective experiences with racial discrimination were included in the logistic regression model together, only collective experiences with racial discrimination was significantly related to physical health.

Conclusion: To the best of our knowledge this is the first study to quantify racial discrimination in a Chuukese migrant population. We found that: 1) this experiences high levels of racial discrimination; and 2) when considering the health of Chuukese individual living in Hawai‘i, it is important to consider experiences with racial discrimination. This study also leads us to believe that collective experiences with racial discrimination may have a stronger impact on health outcomes for this collectivist community. These findings support the importance of conducting further research in this area with a larger study group, as well as for supporting programs addressing racial discrimination and its negative effects on health in this population.
4.2 Introduction

Racial discrimination is associated with negative physical and mental health outcomes across a variety of populations and studies. (1-4) Increased self-reported racial discrimination has been significantly associated with poor physical health outcomes including: increased blood pressure/hypertension, infant low birth weight, heart disease, diabetes, and increased body mass index, as well as poor mental health outcomes including: depression, obsessive-compulsive symptoms, anxiety, and stress. (2) Similar relationships between poor mental health and reported racial discrimination were found from a secondary data analysis focusing on 1,977 Asian Americans from the US National Latino and Asian American Study. (5) Researchers found a greater perception of racial discrimination was significantly associated with depression and anxiety disorders, even after controlling other variables such as physical health, social desirability, family cohesion, poverty, and other demographic characteristics.

Less research exists regarding racial discrimination among Pacific Islanders, (4) however there is a growing body of research that supports the theory that racial discrimination plays a significant role in Pacific Islander health outcomes. (6-8) Notably Harris et al. (6) found that increased reports of racial discrimination in indigenous and Asian Pacific Islander populations in New Zealand were strongly associated with both physical and mental health outcomes, including self-reported poor or fair health, lower physical function, increased prevalence of cardiovascular disease, lower mental health, and increased smoking. These relationships were significant even after controlling for age, gender, and socioeconomic position. They also found strong evidence of a dose-response relationship between these health measures and experience of different types of discrimination.

In study 1, we found several studies that included items asking about collective experiences with racial discrimination, including asking participants to assess if their friends, family members, or ethnic group as a whole has experienced racial discrimination. (2, 7-10) However, most of these studies did not include a quantitative analysis of the relationship between collective racial discrimination and physical and/or mental health outcomes. For example, one study looking at both individual and collective racial discrimination and gambling habits did not include the collective measure in their outcome analysis. (9) Another study, which found that smoking rates in Asian Americans were significantly associated with racial discrimination, used a three-item scale including measurements of both individual and collective experiences, and the authors did not separate individual and collective measurements in their analyses. (10)

However two studies (7-8) found that collective experience with racial discrimination (both using a multi-item modified version of the Oppression Scale) (11) was significantly associated with health and mental health outcomes in Native Hawaiians. These studies found that higher levels of collective racial discrimination were significantly associated with: 1) worse stress related outcomes, assessed by cortisol
levels and blood pressure; this relationship was significant even after controlling for demographic characteristics, Hawaiian ancestry, body mass index, ethnic identity and general psychological stress; (7) and 2) prevalence of hypertension, which was significant even after controlling for several demographic characteristics including age, gender, and education level (8). Findings from these two studies suggests that, particularly for populations with a communal orientation, considering experiences with collective discrimination is important.

The aim of this study was to explore racial discrimination and health in Micronesians, a growing Pacific Islander group in the US. (12) As mentioned in the previous chapters: 1) there is evidence that Micronesian suffer a high burden of both chronic and infectious disease; and 2) there is anecdotal evidence of interpersonal racial discrimination towards Micronesian community members, as well examples of institutional racial discrimination through the form of unequitable policies negatively affecting their health. However as mentioned in study 1, we could find no studies quantitatively assessing the relationship between racial discrimination and health in any Micronesian community. This study quantitatively explored relationships between racial discrimination and health in Chuukese communities. (Chuukese come from the islands of Chuuk, which is a state within the Federated States of Micronesia.) Again, as mentioned earlier the decision to concentrate on the Chuukese community was not only because they are one of the fastest growing Micronesian groups in Hawai‘i, but narrowing the study population helped to ensure the findings weren’t affected by the cultural diversity within the Micronesian community.

As documented in this dissertation, efforts were taken to create a measurement tool appropriate for our study population, as several experts in the field of racial discrimination research have highlighted the importance of tailoring measurement tools to specific study populations to address differences in nativity, culture, and concepts of race. (1,4) The survey we utilized was created based on findings from: 1) a systematic literature review analyzing studies measuring racial discrimination in indigenous and Asian Pacific Islander communities (study 1); 2) in-depth exploratory interviews with Chuukese community members (n=12) and healthcare providers that serve this community (n=8) (study 2); and 3) informal input from Chuukese community members and experts in the field of racial discrimination, research with Pacific Islanders, and quantitative analysis (collected throughout this dissertation process).

The resulting measurement tool was administered to Chuukese community members to explore the relationship between individual and collective experiences with racial discrimination and physical and mental health.
4.3 Method
4.3.1 Framework

Williams and Mohammed’s (13) Framework for the Study Racism and Health (as described in Chapter 1) details the many pathways in which racial discrimination affects health including: 1) decreasing one’s participation and access to quality healthcare (14-15); and 2) increasing participation in risky health behaviors. (9-10,16-18) These relationships have been supported in the literature. For example, Gonzalez et al. (14) found that after controlling for insurance status, increased experience with racial discrimination by Native American women was significantly related to lower utilize of cancer screening services. They found that women who reported discrimination also exhibited more suboptimal health seeking behaviors, had lower adherence to medical advice, and were less engaged with their healthcare providers; suggesting that discrimination can lead to detachment from the healthcare system.

In regards to racial discrimination and participation in risky health behaviors, a study analyzing a cross-sectional national survey of American Indians/Native Alaskans (AI/AN), (16) found that racial discrimination had a significant association with daily smoking. They suggest when addressing smoking risks for AI/AN populations, researchers must not only include measurements of historical trauma, but also consider self-reported pain as “a possible embodiment of racial discrimination”. (16, pg. 1667) This is in line with other studies which have found significant relationships between increased experience with racial discrimination and increased tobacco use. (10,16-18)

We proposed that racial discrimination has a direct negative relationship with health, as well as an indirect relationship through two pathways: access to appropriate healthcare and participation in risky health behaviors.

4.3.2 Cognitive interviews

Cognitive interviews were conducted with three Chuukese community members to help refine the survey tool regarding comprehensibility, relevance to the Chuukese community, and cultural appropriateness. A verbal probing approach (19) was used and participants were asked the survey items and given time to answer each question. They were then asked additional probing questions including what they thought the question was asking, if it was culturally appropriate to ask this type of questions, and if this was an important issue in their community.

Information collected through this process led to modifying two questions taken from the BRFSS (20) regarding health. Originally the questions asked participants to report the number of day in the last month their a) physical and b) mental health were not good. All three participants felt that these questions were confusing and hard to answer. They agreed that modeling these questions to another BRFSS question asking a participant to ‘rate their overall health’ using a subjective Likert scale of very good, good, ok, bad, or very bad was more appropriate. Therefore two questions asking the participant to rate
their a) physical and b) mental health using this Likert scale were added. Following the BRFSS, no time frame was given regarding this assessment.

4.3.3 Recruitment

Participants were identified through two community liaisons that were trusted figures in their communities. Community liaisons recruited participants, interpreted when needed, and translated the survey into Chuukese. Surveys were completed at a healthcare enrollment outreach event for Chuukese community members and a central community gathering place inside of a local housing project. Participants had to be of Chuukese decent, currently live in Hawai‘i, be 18 years or older, and be able to give informed consent. Each participant was given a $15 gift card for their participation.

4.3.4 Data collection

Surveys were conducted by the principle investigator through face-to-face interviews. This method was chosen based on findings from our systematic literature review that found that face-to-face interviews were utilized in the majority of studies (study 1) and was preferred by the Chuukese community (study 2). One survey was completed by the participant using a written format as she couldn’t talk or hear due to a recent medical condition but could read and write (and was competent to provide consent).

4.3.5 Variables

The final measurement tool consisted of 25 questions, several with multiple items, addressing the following areas:

4.3.5.1 Demographic information

Information regarding gender (male/female), age (continuous), financial situation (In the last year were you worried about not having enough money for food or rent, yes/no), and acculturation was collected. Acculturation was modified from Novolty et al.’s study. (21) However since all participants migrated from the same country (which is assessed in Novolty’s measurement) we only utilized three questions and corresponding answer options included in their scale including: 1) education (did not graduate high school/ completed high school or more); 2) Age arrived in the US (before 18/ 18 or older); and 3) language usually spoken at home (non-English only/some or only English).
4.3.5.2 Independent variables: racial discrimination

Based on findings from our literature review and exploratory interviews, both individual and collective experiences with discrimination were assessed. We found that although community members may be hesitant to report personal experiences with discrimination, many have a strong desire to protect their community and therefore maybe more willing to report collective than individual experiences with discrimination, especially regarding their children. Race salient worded questions were used to assess both collective and individual experiences with racial discrimination; however race was not repeatedly mentioned. Instead, a more subtle approach was taken and race was only mentioned in the prefaced to each scale. This is based on the findings that: 1) continually asking if a participant has experienced something “because of your race” can lead to under or over reporting (22); and 2) studies measuring racial discrimination in populations similar to the Chuukese have also taken this approach. (7-8,23)

Individual Experiences with Racial Discrimination. We created two individual discrimination measures. One was the level score, representing the proportional number of domains each participant experienced racial discrimination. The second was the frequency score, representing proportional amount of discrimination they experienced across all domains. Both measurements were relative to the number of domains they experienced. Both variables were created using a modified version of Krieger’s validated scale, Experiences with Racial Discrimination. (24)

Each participant was asked, “How often have you been discriminated against because you are Chuukese” (never, rarely, often, always) in nine different situations (school, getting a job, at work, getting housing/ or by housing management, getting healthcare, getting services in store or restaurant, at the bank, on the street or public setting, from the police or courts). The only modifications were: 1) replacing “your race” with “Chuukese”; 2) adding “or by housing management” to the original “getting housing”, since this was identified as an important issue for the Chuukese community during exploratory interviews; and 2) changing the objective answer options (none, once, 2-3 times, more than 4) to subjective categories (never, rarely, often, always) as Vines et al. (25) discovered that participants found it difficult to specify a specific number of times they’ve experienced racial discrimination because, “they occur constantly and are an ingrained part of the system”. (pg. 3) It has also been argued that using subjective options allows participants “determine the extent and impact of their own personal experiences” with racial discrimination which is “important for a phenomenon which is a fundamentally subjective experience”. (23, pg. 2)

Following Krieger’s (24) methods, a dichotomous measurement of reported individual racial discrimination (yes/no) was calculated for each situation (“yes” was assigned to each participant who
answered “rarely, sometimes, or always”). Next the level score was calculated by summing the number of domains the participant reported any amount of racial discrimination.

However the majority of individual (n=55) did not experience all nine domains. 50 individuals never experienced school in the US, 23 never applied for a job or worked, seven never went to the bank, five never applied for housing or interacted with housing manager, four never went out in public, three never went to a store or restaurant, and two never tried to obtain healthcare or interacted with police.

One option to handle missing data would have been to exclude all individuals who did not experience all nine domains. This would significantly reduce the number of participants as only 16 participants experienced all domains. This method would also force us to lose relevant information, as all participants experienced at least three situations and the majority (64.8%, n=46) experiencing at least eight of the domains. Another option would have been to score those who did not experience the domain as 0, since they did not experience racial discrimination in that domain. This would allow us to include everyone in our analysis, and to create a similar summary score to Krieger’s items. However this variable could provide a misleading value as there may be significant differences between someone who experienced a domain and did not experience racial discrimination and someone who never experienced the domain.

Therefore, to handle the missing data, the level score (total number of domains they reported experiencing any amount of racial discrimination) was transformed by dividing it by the total number of situations the participant experienced. For example if an individual reported: 1) experiencing racial discrimination in five domains, and 2) experiencing seven of the nine domains, five was divided by seven to get a transformed score of .71. This transformation created a comparable variable that could use across a group of individuals who had experienced a different percentage of the nine domains.

Continuing to follow Krieger’s (24) method, this transformed level score was categorized as none, moderate, and high. The cutoff points were consistent with Krieger’s definitions, with “moderate” representing racial discrimination reported in one to two situations (transformed into a score of .01-.32 by dividing one and two by nine) and “high” representing racial discrimination reported in three or more situations (transformed into as score of .33 or higher by dividing three by nine). The only difference found when comparing the level score before and after applying the transformation, was three individuals who were originally categorized as “moderate” were moved into “high”. This means that although these participants did not report racial discrimination in three or more situations, because they didn’t experience all nine domains, proportionally they reported experiencing racial discrimination in a high percentage of the domains they experienced.
A frequency score was created, again following Krieger’s (24) methodology, by assigning a value of 0, 1, 2.5 and 5 to the responses never, rarely, often, and always. An overall frequency score was then calculated by adding the frequency scores for all nine domains. Again this variable had the same issue with participants not experiencing all domains as the level score. To provide a more accurate comparable assessment of the frequency of individual racial discrimination, this variable was transformed by dividing it by the number of situation experienced multiplied by five (the maximum frequency score in each situation) then multiplied by 100 to give a whole number.

\[
\text{[(Frequency score/ (#of domains experienced*5))*100]}
\]

For example if a person reported: a) experiencing seven out of the nine domains; and b) “always” experiencing racial discrimination in four domains, “rarely” experiencing racial discrimination in one domain, and “none” in two domains they would be given a total frequency score of 21, \([(4*5) + (1*1) + (2*0)]\). This score would then be divided by the maximum number of points the participant could possibly obtain 35, \((7*5)\). Thus their transformed score would be 60.0 \([(21/35)*100]\). Again this transformation allowed the comparison of the frequency score across a group of people who experienced a different amount of domains without discarding individuals who did not experience all domains. To check how this transformation affected the variable, the equivalent transformation was applied to the original frequency score, which essentially assigned a score of 0 for each situation not experienced by an individual and provided a score based on a maximum score of 45 (9 situations * 5). Therefore the original frequency score was divided by 45 and then multiplied it by 100. Comparing the two variables, the transformed frequency score had a higher mean (25.14 ± 22.96) compared to the adjusted original frequency score (21.06 ± 20.37) but had the same range of 0 to 77.78. This means that the transformation gave higher scores to people who reported a proportionally high amount of racial discrimination (for example if someone experienced racial discrimination “always” in one domain and only experienced that one domain, they would have the same frequency score as someone who experienced racial discrimination “always” in all domains rather than someone who experienced racial discrimination “always” in one domain and “none” in the others.)

In addition to these quantitative items, participants were asked if they wanted to add anything about their experiences in the nine different domains.

**Collective experience with racial discrimination.** A modified scale based off of Victroff’s validated Oppression scale was used. (11) Participants were asked to think about the “whole Chuukese community when rating how much you agree with each of the following statements” (not a lot, a little, somewhat, or a lot). Three items were created based on findings from our exploratory interviews. Two
items: 1) “We are treated like criminals even when it is not our fault”; and 2) “There is only bad stuff about us on the TV, radio, and news” were added because they were found to be common issues in the Chuukese community. The item, “We worry about our children being treated badly because they are Micronesian” was added based on information shared by interviewees explaining Chuukese community members were more willing to speak out against racial discrimination experienced by their children even when they were not willing to describe it for themselves. Based off of Koholokula et al. studies (9-10) which operationalized a modified version of the Oppression scale, a score of 1, 2, 3, and 4 was assigned to the answer options not a lot, a little, somewhat, or a lot respectively. Then an overall collective score was created adding the score for each of the six items. This was treated it as a continuous variable in our analysis.

We had to make decision about missing data as 10 participants (14%) had missing data; seven were missing data for one item, and two people were missing data for two items. A total of 13 (3.1%) data points were missing from the scale. Eleven (15.5%) participants reported not watching television, listening to the radio, or reading the newspaper and so could not answer the question regarding images in the media and one woman (1.4%) refused to answer the questions about children because “her children were now grown”. One (1.4%) to four (5.6%) people did not feel comfortable answering each of the other four items (Table 1). Excluding participants because of missing data can not only lead to bias, but also cause loss of precision and power. (26) It’s been found that when handling missing data in Likert scales, assigning the item mean score to missing data was a “good representation of the original data” as long as “both the number of respondents with missing data and the number of items missing were 20% or less”. (27, pg. 175) As our data met this requirement, to help retain power, we employed this method. For example the overall mean for the item measuring if they worried about their children was 3.64, so the woman who did not answer this item was assigned a score of 3.64.

<table>
<thead>
<tr>
<th>Table 4.1: Items Measuring Reported Collective Racial Discrimination</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N</strong></td>
</tr>
<tr>
<td>Look down on us</td>
</tr>
<tr>
<td>See as a burden</td>
</tr>
<tr>
<td>Don’t get equal Rights</td>
</tr>
<tr>
<td>Only negative in media</td>
</tr>
<tr>
<td>Worry for children</td>
</tr>
<tr>
<td>Treat us like criminals</td>
</tr>
</tbody>
</table>

Summarizing, there were three variables measuring racial discrimination: two assessed individual experiences, Level and frequency scores, and the collective score assessed collective experiences.
4.3.5.3 Moderators

**Participation in risky health behaviors.** Current tobacco use (yes/no) was assessed. Current use of cigarettes, cigars, chew, betel nut with or without tobacco, and electronic cigarettes was measured. If participants reported currently using any of these products they were categorized as a “current user.”

**Access to appropriate healthcare.** Access was assessed by four dichotomous items. Two items were taken from the Behavioral Risk Factor Surveillance Survey (BRFSS) (20) 1) current insurance coverage status (yes/no); and 2) having a regular healthcare provider (yes/no). One BRFSS item, “in the last year have you ever wanted to see a doctor but could not because of costs” was modified to “have you ever wanted to see a doctor but couldn’t” (yes/no). If participants answered yes, they were then asked to provide the reason. This was to help us better understand the variety of barriers to obtaining needed care. One item, “when getting healthcare have you ever needed an interpreter but weren’t provided one” (yes/no) was created based on findings from our exploratory interviews that this was an important issue in the Chuukese community.

An overall sum of barriers to healthcare was calculated by adding the four items, (insurance and regular provider were coded 0 for yes, 1 for no and couldn’t see a provider and didn’t have an interpreter was coded 0 for no, 1 for yes). The overall sum was then categorized as 0 = no barriers, 1 = one barrier, and 2 = two or more barriers, for example someone who didn’t have insurance or a regular provider, but always saw a doctor and was provided interpreter when needed would be coded as having 2 barriers.

4.3.5.4 Dependent Variables: Mental and Physical Health

As mentioned earlier input from the cognitive interviews led to modifying a question from the BRFSS (20) regarding health. Self-assessment of mental and physical health (very good, good, ok, bad, very bad) were re-coded into a dichotomous variable (good/bad), with very good and good categorized as good following common practice.

4.3.6 Analysis Plan

Chi-square tests (for categorical variables) and independent t-tests or ANOVAs (for continuous variables) were used to compare: 1) all demographic and hypothesized moderating variables, 2) three independent variables (two assessing individual racial discrimination and one assessing collective experiences); and 3) two dependent variables (mental and physical self-reported health). Three separate logistic regression models were used with each one of the three dependent variables to quantify the relationship between the independent and dependent variables after controlling for demographic and
moderating variables. The first set of models only looked at the independent relationship to health. The second set of models added demographic variables and the third set of model added both demographic and moderating variables. These three models were used to explore if: 1) racial discrimination has a significant relationship with health outcomes; 2) if this relationship is still significant after controlling for demographic variables; and 3) if this relationship can be partially be explained by access to healthcare and tobacco use.

4.4 Results

A total of 72 individuals completed the survey. One survey was not included in the final analysis as the participant was of Pohnpeian rather than Chuukese decent. Participants had a mean age of 48.83 years (±15.56). The majority of participants were female (87%, n=62), did not graduate high school (59%; n=42), lived in public housing (85%; n=60), and worried about not having enough money for food or rent in the last year (90%; n=64). Overall, acculturation was low, with the majority speaking only Chuukese at home (86%; n=61), coming to the US after the age of 17 (86%, n=61), and living in the US for a mean of 11.44 years (±9.84). Considering their reasons for coming to the US, 36.6% (n=26) came for medical treatment for themselves or family members, 25.4% (n=18) came for employment, 19.7% (n=14) came to be with their family, and 18.3% (n=13) came for education reasons.

Almost half (n=34, 47.9%) of participants had experienced not being able to see a doctor when they wanted. When asked why, 16 individuals explained it was due to not having health insurance or having issues with their health insurance, five had family obligations, three forgot, three had problems making an appointment, two were too busy with work, two had transportation issues, and one was too sick to go. The three other items measuring barriers to healthcare showed that 18 (25.4%) participants didn’t have a regular healthcare provider, 13 (18.3%) didn’t currently have insurance, and 12 (16.9%) experienced not receiving an interpreter when needed when seeing a provider. Based on these four items, 26 (36.6%) participants reported no barriers to healthcare, 23 (32.4%) reported one barrier, and 22 (31.0%) reported three or more barriers.

Five people (7.0%) currently chewed betel nut with tobacco, four (6.0%) chewed without tobacco, three (4.0%) smoked cigarettes, three chewed tobacco, and no individuals used electronic cigarettes. A total of 10 people (14.1%) currently used at least one form of tobacco product.

4.4.1 Independent variables

4.4.1.1 Experience with Individual Racial Discrimination

All participants experienced at least three of the nine domains in which they could experience racial discrimination. (Graph 4.1)
All domains were applicable to at least 90% of participants, except for school (as 70.4% or n=50 had never gone to school in Hawai‘i) and applying for or working at a job (as 31.0% or n=22 had never worked in Hawai‘i).

A total of 71.8% (n=51) of participants experienced racial discrimination in at least one of the nine situations. Of those who reported experiencing racial discrimination, 13.7% (n=7) reported it in only one situation, 15.7% (n=8) reported it in two situations, 19.6% (n=10) in three situations, 7.8%, (n=4) in four situations, 17.6% (n=9) in five situations, 9.8% in 9 (n=5) in six situations, 11.8% (n=6) in 7 situations, 1.9% (n=1) in 8 and 1.9% (n=1) 9 situations. See Graph 4.2.

Of the participants who experienced the domain, over half reported experiencing racial discrimination while applying for a job (61.2%, n=30), working (59.2%, n=29), applying for housing or interacting with housing management (51.5%, n=34), and while in a public setting (50.7%, n=34). People also reported racial discrimination while getting service at a store or restaurant (42.6%, n=29), at school
(33.3%, n=7), trying to obtain healthcare (29.0%, n=20), interacting with the police (29.0%, n=20), and at the bank (23.4%, n=15). (Graph 4.3)

The level score (total number of domains participants reported experiencing racial discrimination divided by the total number of domains they experienced) revealed the majority of participants (n=39, 54.9%) experienced a “high” level of racial discrimination, 12 (16.9%) reported “moderate” levels of racial discrimination, and 20 (28.2%) reported none. As mentioned in the methods section, the frequency score had a mean 25.14 ± 22.96 with a highest possible score of 100.

Twenty-four people elaborated on their experiences with racial discrimination in various domains including housing, police, and everyday experiences. Six stories were about discrimination perpetrated by the police, one woman explained, “…The police are really cruel especially to Chuukese, they beat up Chuukese. They don't like us because we come to their island. In A building [at a large housing project] I saw police wrap a Chuukese boy up and cover his mouth. I was scared and cried when I saw this. I worry about my son, I couldn't sleep. They treated him like an animal.” Another man explained how the police beat him up, “they punch me in the head, they took me to a dark area of Waikiki and beat me up and put me in a cell...The problem is we have no place to turn to. It's normal when people are hard pressed for people to fight back. Our children have to fight back.” Others stories ranged from similar stories of brutality by police to being force to wait longer than other non-Chuukese individuals to talk to representatives at the housing office.
4.4.1.2 Collective Experiences with Racial Discrimination

The six items measuring collective experiences had high intercorrelation. The exceptions were the item measuring worry for children, which was not correlated to the item measuring equal rights (r=.220, p=.067) or the item measuring negative images in the media (r=.145, p=.270). Cronbach’s Alpha was .825. The overall sum ranged from 6 to 24, with a mean 19.84 (±4.64). Only one individual reported experiencing no collective racial discrimination (with an overall score of 6), and 18 individuals reported the highest level of collective discrimination possible.

4.4.1.3 Relationships between independent variables

To explore the relationship between the three racial discrimination measurements, scatterplots and their correlations were analyzed. As expected the level and frequency scores of individual racial discrimination were highly correlated with a Pearson score .806 (p=.000). This indicated that people who had lower level scores (reporting any amount of racial discrimination (yes/no) in fewer domains) also had lower frequency scores (related to how often they experienced racial discrimination in each domain).

The correlation between collective and individual experiences of racial discrimination, although significant, were not as strong. Collective scores (representing experiences of collective racial discrimination) and level scores of individual racial discrimination had a Pearson score of .405 (p=.000), which is considered a moderate correlation. The scatter plot below illustrates that although in general the higher the level of individual racial discrimination reported, the higher the level of collective racism they reported. (Those that reported no individual racial discrimination, represented by 0 in the scatterplot, had a mean collective racial discrimination score of 16.84 ± 5.46, those who reported moderate levels, represented by 1, had a score of 20.21 ± 4.09, and those who reported high levels, represented by 2 had a score of 21.27 ± 3.62.)

Graph 4.4 Scatterplot of Collective Discrimination and Level Score of Individual Racial Discrimination
Collective racial discrimination to the frequency of individual racial discrimination also had relatively low Pearson score of .469 (p=.000). The scatterplot below illustrates that in general, people who report higher frequencies of individual racial discrimination also report higher levels of collective racial discrimination. However, looking at the people who reported the highest levels of collective racial discrimination (the points running across the top of the scatterplot), they reported anywhere from none to the highest frequency scores of individual racial discrimination. Then, looking at those who experienced no individual racial discrimination, they reported anywhere from the lowest to the highest level of collective racial discrimination.

Graph 4.5: Scatterplot of Collective Discrimination and Overall Frequency of Individual Racial Discrimination Score

4.4.1.4 Relationships between independent and hypothesized confounding variables

The three independent variables were compared to demographic variables (age, gender, financial situations, reason came to the US, education, and age came to the US) and hypothesized moderators (insurance status, having a regular doctor, ever needing a provider but couldn’t see one, ever needing an interpreter while seeing a provider but didn’t receive one, total number of barriers to accessing healthcare, and current smoking status).

Level score of independent racial discrimination. Using chi-squared tests, higher level scores of individual racial discrimination was significantly associated with: worrying about money (p=.016), not being able to see a provider when wanted (p=.012) and having a greater overall number of barriers to accessing healthcare (p=.015). These can be seen in Table 4.2.
Table 4.2: Reported Discrimination Compared to Demographic and Moderating Variables

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Individual Racial Discrimination</th>
<th>Collective Racial Discrimination</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level Score</td>
<td>Frequency Score</td>
</tr>
<tr>
<td></td>
<td>None n (%)</td>
<td>Moderate n (%)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;25 (n=3)</td>
<td>2 (66.7%)</td>
<td>0</td>
</tr>
<tr>
<td>25-44 (n=27)</td>
<td>8 (29.6%)</td>
<td>3 (11.1%)</td>
</tr>
<tr>
<td>45-64 (n=29)</td>
<td>4 (13.8%)</td>
<td>7 (24.1%)</td>
</tr>
<tr>
<td>≥65 (n=12)</td>
<td>6 (50.0%)</td>
<td>2 (16.7%)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male (n=10)</td>
<td>4 (40.0%)</td>
<td>1 (10.0%)</td>
</tr>
<tr>
<td>Female (n=61)</td>
<td>16 (26.2%)</td>
<td>11 (18.0%)</td>
</tr>
<tr>
<td>Worry about money</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes (n=64)</td>
<td>15 (23.4%)</td>
<td>10 (15.6%)</td>
</tr>
<tr>
<td>No (n=7)</td>
<td>5 (71.4%)</td>
<td>1 (14.3%)</td>
</tr>
<tr>
<td>Reason Came</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical (n=26)</td>
<td>7 (26.9%)</td>
<td>4 (15.4%)</td>
</tr>
<tr>
<td>Education (n=13)</td>
<td>3 (23.1%)</td>
<td>2 (15.4%)</td>
</tr>
<tr>
<td>Job (n=18)</td>
<td>7 (38.9%)</td>
<td>2 (11.1%)</td>
</tr>
<tr>
<td>Family (n=14)</td>
<td>3 (21.4%)</td>
<td>4 (28.6%)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than highschool (n=42)</td>
<td>14 (33.3%)</td>
<td>5 (11.9%)</td>
</tr>
<tr>
<td>Graduate HS or more (n=29)</td>
<td>6 (20.7%)</td>
<td>7 (24.1%)</td>
</tr>
<tr>
<td>Age came to the US</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-17 (n=61)</td>
<td>17 (27.9%)</td>
<td>10 (16.4%)</td>
</tr>
<tr>
<td>18 or older (n=10)</td>
<td>3 (30.0%)</td>
<td>2 (20.0%)</td>
</tr>
<tr>
<td>Language Spoken at Home</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chuukese only (n=61)</td>
<td>17 (29.9%)</td>
<td>10 (16.4%)</td>
</tr>
<tr>
<td>English/mixed (n=10)</td>
<td>3 (30.0%)</td>
<td>2 (20.0%)</td>
</tr>
<tr>
<td>Years in the US</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;5 years (n=15)</td>
<td>6 (40.0%)</td>
<td>3 (20.0%)</td>
</tr>
<tr>
<td>5-15 years (n=40)</td>
<td>11 (27.5%)</td>
<td>7 (17.5%)</td>
</tr>
<tr>
<td>&gt;15 years (n=16)</td>
<td>3 (18.8%)</td>
<td>2 (12.5%)</td>
</tr>
</tbody>
</table>
**Table 2 continued**

<table>
<thead>
<tr>
<th>Individual Racial Discrimination</th>
<th>Frequency Score</th>
<th>Collective Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level</strong></td>
<td><strong>Mean (SD)</strong></td>
<td><strong>Mean (SD)</strong></td>
</tr>
<tr>
<td>None n (%)</td>
<td>Moderate n (%)</td>
<td>High n (%)</td>
</tr>
<tr>
<td>None</td>
<td>18 (30.0%)</td>
<td>10 (17.2%)</td>
</tr>
<tr>
<td>Moderate</td>
<td>2 (15.4%)</td>
<td>2 (15.4%)</td>
</tr>
<tr>
<td>High</td>
<td>24.04 (22.25)</td>
<td>20.07 (4.68)</td>
</tr>
<tr>
<td>No barriers (n=26)</td>
<td>13 (50.0%)</td>
<td>4 (15.4%)</td>
</tr>
<tr>
<td>1 barrier (n=23)</td>
<td>4 (17.4%)</td>
<td>6 (26.1%)</td>
</tr>
<tr>
<td>2 or more barriers (n=22)</td>
<td>3 (13.6%)</td>
<td>2 (9.1%)</td>
</tr>
<tr>
<td>Current tobacco use n (%)</td>
<td>15 (24.6%)</td>
<td>14 (23.0%)</td>
</tr>
<tr>
<td>Yes (n=10)</td>
<td>4 (40.0%)</td>
<td>0</td>
</tr>
<tr>
<td>ACCESS_sum</td>
<td>24.32 (21.91)</td>
<td>20.03 (4.57)</td>
</tr>
<tr>
<td>No barriers (n=26)</td>
<td>13 (50.0%)</td>
<td>4 (15.4%)</td>
</tr>
<tr>
<td>1 barrier (n=23)</td>
<td>4 (17.4%)</td>
<td>6 (26.1%)</td>
</tr>
<tr>
<td>2 or more barriers (n=22)</td>
<td>3 (13.6%)</td>
<td>2 (9.1%)</td>
</tr>
<tr>
<td>Current tobacco use n (%)</td>
<td>15 (24.6%)</td>
<td>14 (23.0%)</td>
</tr>
<tr>
<td>Yes (n=10)</td>
<td>4 (40.0%)</td>
<td>0</td>
</tr>
<tr>
<td>ACCESS_sum</td>
<td>24.32 (21.91)</td>
<td>20.03 (4.57)</td>
</tr>
</tbody>
</table>

**Moderators**

- **Have insurance**
  - Yes (n=58): 18 (31.0%), 10 (17.2%), 30 (51.7%)
  - No (n=13): 2 (15.4%), 2 (15.4%), 9 (69.2%)
  - Frequency score: Mean (SD) = 24.04 (22.25), 20.07 (4.68), 23.48 (22.84), 30.02 (23.25)
  - p-values: .491, .399, .380

- **Have regular provider**
  - Yes (n=53): 18 (34.0%), 10 (18.9%), 25 (47.2%)
  - No (n=18): 2 (11.1%), 2 (11.1%), 14 (77.8%)
  - Frequency score: Mean (SD) = 23.48 (22.84), 20.05 (4.84), 30.02 (23.25), 19.21 (4.05)
  - p-values: .077, .033, .510

- **Couldn't see provider**
  - Yes (n=34): 6 (17.6%), 3 (8.8%), 25 (73.5%)
  - No (n=37): 14 (17.8%), 9 (24.3%), 14 (37.8%)
  - Frequency score: Mean (SD) = 31.98 (23.21), 18.85 (21.13), 19.41 (4.92)
  - p-values: .012, .039, .015

- **Didn't get interpreter**
  - Yes (n=12): 1 (8.3%), 3 (25.0%), 8 (66.7%)
  - No (n=59): 19 (32.2%), 9 (15.3%), 31 (52.5%)
  - Frequency score: Mean (SD) = 37.53 (24.50), 18.85 (21.13), 19.26 (4.85)
  - p-values: .223, .039, .039

- **ACCESS_sum**
  - No barriers (n=26): 13 (50.0%), 4 (15.4%), 9 (34.6%)
  - 1 barrier (n=23): 4 (17.4%), 6 (26.1%), 12 (56.5%)
  - 2 or more barriers (n=22): 3 (13.6%), 2 (9.1%), 17 (77.3%)
  - Frequency score: Mean (SD) = 19.73 (22.76), 24.56 (21.04), 34.11 (23.11)
  - p-values: .015, .039, .000

**Frequency scores of independent racial discrimination.** Using ANOVAs and independent t-tests, higher frequency scores of individual racial discrimination was significantly associated with: older age (p=.014), worrying about money (p=.038), not having a regular provider (p=.033), not being able to see a provider when wanted (p=.015) and not receiving an interpreter when they needed (p=.039). These can be seen in Table 4.2.

**Collective racial discrimination scores:** Increased overall collective scores were significantly associated with increased age (p=.004), coming to the US for medical reasons (p=.001), only speaking Chuukese at home (p=.003), and not having an interpreter when need (p=.000).
4.4.2 Unadjusted relationships with health

Using Chi-squared tests, all proposed demographic and moderating variables were compared to physical and mental health. None of the variables had a significant association with either health outcome. However they were trending in an expected manner, for example a higher percentage of older individuals reported bad physical health than younger individuals, but the differences were not significant.

Bivariate analysis between the three independent variables and health outcomes were conducted to calculate their unadjusted relationships. Bad physical health outcomes were significantly associated with higher collective racial discrimination scores (p=.018) and higher frequency of individual racial discrimination scores (p=.025). These results can be found in Table 4.3. All three independent variables were significantly associated with worse mental health: collective scores (p=.008), frequency scores (p=.002), and level scores (p=.019).

| Table 4.3: Unadjusted Relationships Between Independent Variables and Health Outcomes |
|---------------------------------|-----------------|-----------------|-----------------|
|                                 | Individual Racial Discrimination | Collective Racial Discrimination |
|                                 | Level Score | Frequency Score | Collective Score |
|                                 | None n (%) | Moderate n (%) | High n (%) | mean (SD) | mean (SD) |
| Physical Health p = .240       |            |                |            |           |           |
| Bad (n=29)                      | 7 (24.1%)  | 2 (6.9%)       | 20 (69.0%) | 32.45 (24.55) | 21.40 (3.35) |
| Good (n=42)                     | 13 (31.0%) | 10 (23.8%)     | 19 (45.2%) | 20.09 (20.60) | 18.77 (3.35) |
| Mental Health p = .019          |            |                |            |           |           |
| Bad (n=31)                      | 5 (16.1%)  | 3 (9.7%)       | 23 (74.2%) | 34.29 (24.43) | 21.48 (3.22) |
| Good (n=40)                     | 15 (37.5%) | 9 (22.5%)      | 16 (40.0%) | 18.05 (19.21) | 18.57 (5.19) |

4.4.2.1 Bivariate analysis of individual racial discrimination and health by domain

Next, in each of the nine domains, the relationship between health outcomes and individual racial discrimination using our measurements of: 1) experiencing any (yes/no); and 2) frequency (continuous). When experiencing racial discrimination was compared to physical and mental health outcomes (good/bad), the only significant relationship was between bad mental health and experiencing racial discrimination in the public domain (p=.014). These outcomes can be found in Table 4.4.
Increased frequency scores of individual racial discrimination was significantly related to bad physical health only when perpetrated by police (p=.007), and to bad mental health in the police (p=.035) and public (p=.019) domains. Found in Table 4.5.

<table>
<thead>
<tr>
<th>Situation</th>
<th>Physical Health “Bad”</th>
<th>Mental Health “Bad”</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td><strong>At School:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never (n=14)</td>
<td>4 (28.6%)</td>
<td>5 (35.7%)</td>
</tr>
<tr>
<td>Any (n=7)</td>
<td>4 (57.1%)</td>
<td>4 (57.1%)</td>
</tr>
<tr>
<td><strong>Getting a Job:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never (n=18)</td>
<td>7 (36.8%)</td>
<td>8 (42.1%)</td>
</tr>
<tr>
<td>Any (n=30)</td>
<td>13 (43.3%)</td>
<td>15 (50.0%)</td>
</tr>
<tr>
<td><strong>At work:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never (n=19)</td>
<td>9 (45.0%)</td>
<td>8 (40.0%)</td>
</tr>
<tr>
<td>Any (n=29)</td>
<td>10 (34.5%)</td>
<td>14 (48.3%)</td>
</tr>
<tr>
<td><strong>Housing:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never (n=32)</td>
<td>13 (40%)</td>
<td>11 (34.4%)</td>
</tr>
<tr>
<td>Any (n=34)</td>
<td>14 (41.2%)</td>
<td>18 (52.9%)</td>
</tr>
<tr>
<td><strong>Getting healthcare:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never (n=49)</td>
<td>20 (40.8%)</td>
<td>21 (42.9%)</td>
</tr>
<tr>
<td>Any (n=20)</td>
<td>9 (45.0%)</td>
<td>10 (50.0%)</td>
</tr>
<tr>
<td><strong>At a store/ restaurant:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never (n=39)</td>
<td>12 (30.8%)</td>
<td>14 (35.9%)</td>
</tr>
<tr>
<td>Any (n=29)</td>
<td>14 (48.3%)</td>
<td>15 (51.7%)</td>
</tr>
<tr>
<td><strong>At bank:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never (n=49)</td>
<td>17 (34.7%)</td>
<td>19 (38.8%)</td>
</tr>
<tr>
<td>Any (n=15)</td>
<td>7 (46.7%)</td>
<td>8 (53.3%)</td>
</tr>
<tr>
<td><strong>In public:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never (n=33)</td>
<td>11 (33.3%)</td>
<td>9 (27.3%)</td>
</tr>
<tr>
<td>Any (n=34)</td>
<td>16 (47.1%)</td>
<td>20 (58.8%)</td>
</tr>
<tr>
<td><strong>By police:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never (n=49)</td>
<td>17 (34.7%)</td>
<td>18 (36.7%)</td>
</tr>
<tr>
<td>Any (n=20)</td>
<td>11 (55.0%)</td>
<td>12 (60.0%)</td>
</tr>
</tbody>
</table>
### Table 4.5: Comparing Mean Frequency of Individual Racial Discrimination of Individuals with Bad and Good Health by Domain

<table>
<thead>
<tr>
<th>Domain</th>
<th>School (mean, SD)</th>
<th>Job (mean, SD)</th>
<th>Work (mean, SD)</th>
<th>Housing (mean, SD)</th>
<th>Health (mean, SD)</th>
<th>Service (mean, SD)</th>
<th>Bank (mean, SD)</th>
<th>Public (mean, SD)</th>
<th>Police (mean, SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bad (n=29)</td>
<td>.47 (1.35)</td>
<td>1.81 (22.1)</td>
<td>1.47 (2.17)</td>
<td>1.93 (2.26)</td>
<td>.90 (1.53)</td>
<td>1.71 (2.10)</td>
<td>.53 (1.17)</td>
<td>1.72 (1.78)</td>
<td>1.55 (2.16)</td>
</tr>
<tr>
<td>Good (n=42)</td>
<td>.08 (.41)</td>
<td>1.18 (1.75)</td>
<td>1.43 (1.84)</td>
<td>1.62 (2.17)</td>
<td>.65 (1.36)</td>
<td>.85 (1.50)</td>
<td>.40 (1.19)</td>
<td>1.12 (.83)</td>
<td></td>
</tr>
<tr>
<td><strong>Mental</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bad (n=31)</td>
<td>.44 (1.31)</td>
<td>1.97 (2.28)</td>
<td>1.77 (2.16)</td>
<td>2.32 (2.31)</td>
<td>1.00 (1.66)</td>
<td>1.58 (2.05)</td>
<td>.66 (1.39)</td>
<td>2.05 (1.85)</td>
<td>1.32 (1.91)</td>
</tr>
<tr>
<td>Good (n=40)</td>
<td>.09 (.42)</td>
<td>1.03 (1.57)</td>
<td>1.19 (1.79)</td>
<td>1.30 (2.02)</td>
<td>.56 (1.20)</td>
<td>.90 (1.55)</td>
<td>.30 (.96)</td>
<td>.84 (1.42)</td>
<td>.46 (1.25)</td>
</tr>
</tbody>
</table>

#### 4.4.3 Multivariable models

Three models were used to test the relationships between each of the three independent variables and health outcomes. Model 1 only looked at independent and dependent variables. Model 2 included demographic variables commonly used in racial discrimination research representing age, gender, stress due to financial situation, education, and acculturation. Listed are the variables with the reference group in parentheses: Age (continuous), gender (male), worry about money (not worried), education (less than highschool), language spoken at home (only Chuukese). Only one variable was chosen to represent acculturation out of the four that we measured as: 1) we have a small sample size and increased variables would decrease our power to measure significant relationships; 2) none of our acculturation variables were significantly related to either of our health outcomes and therefore excluding some would not greatly affect the outcome; and 3) all of our acculturation variables were correlated either with each other or age, therefore they were all measuring similar differences within the study sample. Language spoken at home was chosen to represent acculturation as it was significantly related to our independent variable, experiences with collective racial discrimination.

Model 3 also included all the demographic variables included in model 2, as well as variables representing access to healthcare (total barriers; none, one, two or more) and tobacco use (yes/no); factors I hypothesized to be moderating factors to health and racial discrimination. (The model was also run substituting the overall barriers to care variable with the four individual items used to create the variable, but it did not impact significance of study findings.)
4.4.3.1 Collective racial discrimination and health

Using logistic regression, collective experiences with racial discrimination was significantly related to mental health in all three models. When analyzed without considering other confounding variables (model 1), the collective score had an odds ratio of 1.18 and lower and upper 95% confidence interval (CI) of 1.04 and 1.34 (p=.013). Found in Table 4.6.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Odds Ratio</td>
<td>95% CI</td>
<td>Odds Ratio</td>
</tr>
<tr>
<td>Overall Collective</td>
<td>1.18**</td>
<td>1.04, 1.34</td>
<td>1.24**</td>
</tr>
<tr>
<td>Age</td>
<td>0.99</td>
<td>.95, 1.02</td>
<td>0.99</td>
</tr>
<tr>
<td>Gender</td>
<td>0.88</td>
<td>.19, 4.12</td>
<td>0.88</td>
</tr>
<tr>
<td>Finances</td>
<td>5.11</td>
<td>.27, 41.76</td>
<td>2.82</td>
</tr>
<tr>
<td>Education</td>
<td>2.21</td>
<td>.75, 6.55</td>
<td>2.23</td>
</tr>
<tr>
<td>Language</td>
<td>1.55</td>
<td>.27, 8.83</td>
<td>1.42</td>
</tr>
<tr>
<td>Tobacco Use</td>
<td>0.71</td>
<td>.13, 4.02</td>
<td>1.35</td>
</tr>
<tr>
<td>Access: 1 barrier</td>
<td></td>
<td></td>
<td>1.35</td>
</tr>
<tr>
<td>Access: ≥2 barriers</td>
<td></td>
<td></td>
<td>3.25</td>
</tr>
</tbody>
</table>

*p<.05, **p<.01
Reference groups: Gender (male); Finances (not worried); Education (didn’t graduate highschool); Language (only Chuukese); Tobacco us (non-user); Access (no barriers)

This means that a one unit increase in the experiences with collective racial discrimination score increases the odds of a person having bad mental health by 18%. This relationship remained significant even after controlling for demographic characteristics (Model 2: p=.016) and both demographic and hypothesized moderating variables (Model 3: p=.016). None of the other variables in model 2 or 3 had a significant relationship with mental health.

When the same analysis was done looking at experience with collective racial discrimination and physical health, the relationship was again significant when looked at alone (with and odds ratio of 1.16 and upper and lower 95% confidence intervals (CI) of 1.04 and 1.34; p=.025). However this relationship was no longer significant once demographic characteristics (p=.071) and access to healthcare and tobacco use (p=.062) were controlled for.
Table 4.7. Logistic Regression of Collective Racial Discrimination and Physical Health

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
<th>Model 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Odds</td>
<td>95% CI</td>
<td>Odds</td>
<td>95% CI</td>
<td>Odds</td>
<td>95% CI</td>
<td>Odds</td>
<td>95% CI</td>
</tr>
<tr>
<td>Overall Collective</td>
<td>1.16*</td>
<td>1.02, 1.31</td>
<td>1.16</td>
<td>.99, 1.36</td>
<td>1.18</td>
<td>.99, 1.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>1.01</td>
<td>.97, 1.05</td>
<td>1.01</td>
<td>.97, 1.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>0.31</td>
<td>.06, 1.56</td>
<td>0.31</td>
<td>.06, 1.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finances</td>
<td>1.13</td>
<td>.12, 10.78</td>
<td></td>
<td></td>
<td>0.77</td>
<td>.07, 8.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>2.14</td>
<td>.72, 6.36</td>
<td></td>
<td></td>
<td>2.27</td>
<td>.70, 7.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td>0.46</td>
<td>.07, 2.95</td>
<td></td>
<td></td>
<td>0.39</td>
<td>.06, 2.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tobacco Use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.64</td>
<td>.50, 14.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access: 1 barrier</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.22</td>
<td>.59, 8.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access: ≥2 barriers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.56</td>
<td>.65, 10.11</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05, **p<.01
Reference groups: Gender (male); Finances (not worried); Education (didn’t graduate highschool); Language (only Chuukese); Tobacco us (non-user); Access (no barriers)

4.4.3.2 Frequency of individual racial discrimination and health

The same analysis was run for the two variables (level and frequency scores) assessing experiences with individual racial discrimination. Frequency of individual racial discrimination was significantly related to mental health, with an odds ratio of 1.03 (95%CI – 1.01, 1.06; p = .005). This means that a one unit increase in the overall frequency of individual racial discrimination score increases the odds of a person having bad mental health by 3%. This relationship remained significant after controlling for demographic characteristics (p = .008) and as well as the hypothesized moderating variables (p = .015). None of the other variables included in the model were significantly related to mental health. The resulting odd ratios, 95% confidence intervals, and p-values for our logistic regressions can be seen in Table 4.8.
When logistic regression models were used to look at overall frequency of individual racial discrimination and physical health, we found an odds ratio of 1.03 (95% CI - 1.00, 1.05; p = .029). This means that a one unit increase in the overall frequency score increases the odds of a person having bad physical health by 3%. This relationship was significant after controlling for demographic characteristics (p = .032). However after adding hypothesized moderating variables to the model, the relationship between overall frequency of individual racial discrimination and physical health were no longer significant (p = .064). Again, none of the other variables included in the model were significantly related to mental health.

### 4.4.3.3 Level of individual racial discrimination and health

When the same logistic regressions were used with the level score (none, moderate, and high), the only significant relationship was between high levels of individual racial discrimination and poor mental health. (With an odds ratio of 4.31 with a CI of 1.30, 14.27; p = .017). As shown in Table 9. This means for people who reported experiencing racial discrimination in more than 33.3% of the total situations they experience, compared to those who reported none, their odds of having bad mental health increased by
30%. This relationship remained was moderately significant after controlling for demographic variables (p=.057) but not when access to healthcare and tobacco use were added (p=.148).

4.4.3.4 Multivariate regression and individual racial discrimination by domain

The same three models were also applied to the six significant bivariate relationships between the health outcomes and individual racial discrimination by domain, as detailed in Table 4.9.

| Table 4.9: Logistic Regression of Individual Experiences with Racial Discrimination by Domain |
|---------------------------------------------------------------|------------------|------------------|
| Independent Variable: Individual Racial Discrimination | Health Outcome | Domain            |
| Frequency                                                      | Physical         | Police           |
| Frequency                                                      | Mental           | Police           |
| Frequency                                                      | Mental           | Public           |
| Experiencing any                                               | Mental           | Public           |
| Frequency                                                      | Mental           | Housing          |
| Frequency                                                      | Mental           | Job              |

Frequency of individual racial discrimination perpetrated by the police. Using logistic regression, the frequency of experiencing racial discrimination by police was significantly related to both physical (p=.006) and mental (p=.035). A one unit increase in the frequency score increased the odds of a person having bad physical health by 68% and bad mental health by 42%. Both these relationships remained significant after controlling for demographic variables (physical health: p=.007; mental health: p=.038). They also remained significant after adding variables measuring access to healthcare and tobacco use (physical health: p=.007; mental health: p=.040). None of the proposed confounding variables included in the models were significantly related to the health outcomes.

Individual racial discrimination in the public domain. Exploring how racial discrimination is related to mental health when experienced in public (at the beach, waiting for the bus stop, etc.) we found that experiencing any amount of racial discrimination was significantly associated with poor mental health, with an odds ratio of 4.24 (95% confidence interval of 1.56 and 11.52; p=.005). This means compared to a person who reported no individual racial discrimination, experiencing racial discrimination when in public, increases the odds of having poor mental health by 56%. We also found that increased frequency of experiencing individual racial discrimination was significantly associated with bad mental health outcomes, with an odds ratio of 1.56. (95% confidence intervals 1.14 and 2.14; p=.005). Therefore the more racial discrimination participants experienced in public also increases their odds of having poor mental health. These relationships remained significant when controlling for demographic characteristics.
as well as access to healthcare and tobacco use. Again none of the other variables in the model were significantly related to mental health.

**Frequency of racial discrimination in housing and job domains.** The same logistic analysis comparing mental health to frequency of racial discrimination was examined when: 1) applying for a job; and 2) applying for housing or by housing management. Frequency of racial discrimination in both domains were not significantly associated with mental health, even before including any demographic or hypothesized moderating variables.

4.4.3.5 *Multivariate models including both collective and individual racial discrimination*

Lastly, the same set of logistic regressions were conducted to better understand, when considered together, how collective and individual experiences with racial discrimination are related to health. To do this, four sets of models were completed shown in Table 4.10.

<table>
<thead>
<tr>
<th>Table 4.10: Independent and Dependent Variables Included in Four Sets of Three Logistic Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collective Racial Discrimination</td>
</tr>
<tr>
<td>---------------------------------</td>
</tr>
<tr>
<td>1. X</td>
</tr>
<tr>
<td>2. X</td>
</tr>
<tr>
<td>3. X</td>
</tr>
<tr>
<td>4. X</td>
</tr>
</tbody>
</table>

The two variables assessing individual racial discrimination (level and frequency scores) were not included in the same model as they were found to be highly correlated and may thus result in multicollinearity.

**Collective racial discrimination and level score.** Including these two measurements of racial discrimination together, only collective experiences with racial discrimination remained moderately significant to mental health, even when controlling for demographic and hypothesized confounding variables. The p-values, odds ratios, and 95% confidence intervals of the two independent variables for all three models are listed in Table 4.11. Outcomes for the other demographic and moderating variables are not listed as none of them were significant.
Table 4.11: Logistic Regressions Including both Collective Racial Discrimination and Level Score of Individual Racial Discrimination

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Variables</th>
<th>Model 1: Independent Variables Only</th>
<th>Model 2: Including Demographic Variables</th>
<th>Model 3: Including Demographic, Access to Healthcare, and Tobacco Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>p-value</td>
<td>Odds Ratio</td>
<td>95% CI</td>
</tr>
<tr>
<td>Mental Health</td>
<td>Overall Collective</td>
<td>0.056</td>
<td>1.14</td>
<td>1.00, 1.31</td>
</tr>
<tr>
<td></td>
<td>Level: Moderate</td>
<td>0.095</td>
<td>0.675</td>
<td>.12, 3.81</td>
</tr>
<tr>
<td></td>
<td>Level: High</td>
<td>0.656</td>
<td>2.73</td>
<td>.75, 9.89</td>
</tr>
<tr>
<td>Physical Health</td>
<td>Overall Collective</td>
<td>.034</td>
<td>1.16</td>
<td>1.01, 1.33</td>
</tr>
<tr>
<td></td>
<td>Level: Moderate</td>
<td>.170</td>
<td>.23</td>
<td>.03, 1.47</td>
</tr>
<tr>
<td></td>
<td>Level: High</td>
<td>.119</td>
<td>1.10</td>
<td>.31, 3.88</td>
</tr>
</tbody>
</table>

Using these same models when looking at physical health, collective experiences with racial discrimination was significant even when controlling for the level of individual racial discrimination (p=.034). This relationship was moderately significant even when controlling for both demographic variables, access to healthcare, and tobacco use (p=.056). Again none of the other variables were significant.

When collective score was including in the model with frequency of individual racial discrimination neither of the variables were significant in any model for physical or mental health.

4.4 Discussion

Chuukese community members who participated in our study reported high levels of individual racial discrimination. Comparing our results with a seminal study (28) done using a modified version of the Krieger’s scale with 4,086 Black and white adults 25 to 37 years old, a higher percentage of our participants reported experiencing racial discrimination. These can be seen in Table 4.12.
Table 4.12: Percent Reporting Any Racial Discrimination Using Modified Version of Krieger’s Experiences of Discrimination Scale

<table>
<thead>
<tr>
<th>Situation</th>
<th>Black Men*</th>
<th>Chuukese Men</th>
<th>Black Women*</th>
<th>Chuukese Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>33%</td>
<td>67%</td>
<td>32%</td>
<td>28%</td>
</tr>
<tr>
<td>Job</td>
<td>53%</td>
<td>71%</td>
<td>45%</td>
<td>61%</td>
</tr>
<tr>
<td>Work</td>
<td>55%</td>
<td>43%</td>
<td>52%</td>
<td>63%</td>
</tr>
<tr>
<td>Housing</td>
<td>32%</td>
<td>44%</td>
<td>30%</td>
<td>53%</td>
</tr>
<tr>
<td>Healthcare</td>
<td>13%</td>
<td>30%</td>
<td>14%</td>
<td>29%</td>
</tr>
<tr>
<td>Public</td>
<td>66%</td>
<td>50%</td>
<td>59%</td>
<td>51%</td>
</tr>
<tr>
<td>Police</td>
<td>58%</td>
<td>33%</td>
<td>27%</td>
<td>28%</td>
</tr>
</tbody>
</table>

*Reported findings from Krieger and Sidney’s 1996 study (28)

Although our sample sizes and methods were different, these numbers help contextualize our findings and highlight the high percentage of Chuukese participants experiencing racial discrimination, particularly among those applying for a job, at work, applying for housing or by the housing manager, and while they are in a public setting (such as at the bus stop or the beach).

Collective experience with racial discrimination was prevalent in our study population. Only one participant reported experiencing none of the six examples of collective racial discrimination we included in our survey addressing issues such as equal rights, negative images in the media, and concern for one’s children because they are Chuukese.

We measured racial discrimination in three ways: experiences with collective racial discrimination, level of reported individual racial discrimination (none, moderate, or high), and frequency of individual racial discrimination. In unadjusted analyses, all three measurements of racial discrimination were significantly associated with self-reported mental health outcomes, and experiences with collective racial discrimination and frequency of individual racial discrimination were significantly associated with self-reported physical health outcomes. In many cases these associations were significant even after controlling for demographic variables, barriers to obtaining healthcare, and tobacco use.

When examining individual racial discrimination by our nine domains we found that racial discrimination had stronger relationship with health in several domains. For example, even after controlling for our hypothesized confounding variables, increased frequency of reported racial discrimination was significantly related to physical and mental health when that discrimination was perpetrated by police. This may reflect the impact of the intense stories of police brutality participants shared. Also, when racial discrimination was experienced in the public setting, both measures of
individual racial discrimination were significantly associated with worse mental health outcomes, even when controlling of demographic characteristics, access to healthcare, and current tobacco use. This significant relationship is in line with findings from other studies which have found that increased experiences with “everyday discrimination” can be significantly associated with poor health outcomes. (23) Increased frequency of experiencing racial discrimination was also moderately associated with mental health when it occurred while applying for a job and housing. Although not significant, this trend may be explained that racial discrimination, especially when it occurs when trying to obtain necessities such as housing and employment, can be especially stressful, and therefore have a larger effect on mental health.

Overall, the measurements of racial discrimination had a stronger relationship to mental health outcomes. These findings are consistent with the literature on other populations, with studies finding more significant relationships between racial discrimination and mental health compared to physical health. (2)

When measurements representing both collective and individual racial discrimination were examined together, collective scores had a stronger relationship to both mental and physical health outcomes. This is consistent with findings from studies done with other Pacific Islander communities which found collective racial discrimination was significantly related to higher blood pressure, increased cortisol levels, and hypertension. (9-10) This finding suggests that there may be inherent differences between collective and individual racial discrimination. In this study, individual racial discrimination may reflect prejudice and unfair treatment, which either may not have a significant effect on physical health, or may take longer to present. Collective experiences may be more tied to institutional discrimination or oppression, which seems to have a stronger relationship to both mental and physical self-reported health outcomes. The stronger significance of collective compared to individual racial discrimination may also be tied to the fact that we made more modifications to the collective scale. Therefore this scale may better reflect the experiences of the Chuukese community. For example while the individual scale asked about general domains, many of which were not experienced by all participants, the collective questions focused on issues that were identified to be important to the community including worrying for their children and being treated like criminals even when it is not their fault. This scale also allowed for participants to discuss experiencing discrimination as a collective rather than an individual, which may have been more comfortable or clear for participants. For example, it may be harder to ascertain if your co-workers are begin racist, but it may be more clear if you worry about your children because their ethnicity. This finding suggests that in collectivist cultures such as the Chuukese, collective experiences with racial discrimination may have a more significant relationship to health.
4.5 Limitations

This study has many strengths, including using a tool which helps create an environment in which Chuukese community members, a culture which is very private (study 2), felt comfortable disclosing stories of racial discrimination. It was also able to explore the different nuances of collective and individual racial discrimination’s relationship to health. Using a modified Experiences of Discrimination Scale, we were also able to identify the different domains participants experienced individual racial discrimination as well as how these experiences were related to health outcomes. However, one limitation of this study was lack of diversity within the study population, regarding gender, housing, SES, education, and acculturation. In the future it would be helpful to better understand if these findings apply to a more diverse group of Chuukese, as well as to other Micronesian and/or other Pacific Islander groups. This lack of diversity is in part due to the sampling methods utilized; however, when working with hard to reach populations random sampling can be difficult. This lack of diversity may account for the fact that none of the demographic variables were significantly related to health outcomes. For instance, because almost everyone was female, gender was not a significant predictor of health outcomes as it often times is in other health research.

Another limitation is that physical and mental health were each only measured by one self-assessing item. Although this is commonly used in health research, in the future it may be helpful to include more robust scales to measure constructs of health, healthcare assess, and participation in risky health behaviors.

Looking at the variables including in this study, the finding that none of the variables, other than the independent variables, were significantly associated to health suggests we may be missing key moderating or mediating items. For example only financial stress was assessed in this study but most likely there are other stressors which play a significant role in participants’ health that were not included in this study. Therefore we cannot discern “whether discrimination constitutes a unique stressor or simply captures these unmeasured stressors”. (5, pg. 1992) Future research with this population should include assessment of other stressors such as those from family obligations and navigating a different culture, as well as other potential confounders such as ethnic identity, religious support, social support, and personality traits. (2)

Also, because this is a migrant community, many (77.5%) didn’t experience all of the nine domains inquired about. In the future, to better access the total amount of discrimination experienced in participants’ lives, it may be beneficial to identify common places the Chuukese community access. However, the data was transformed to account for this, and despite not experiencing all domains, and
therefore having less of a chance to report discrimination, this variable was still significantly related to health outcomes.

Lastly, our measurement also was not able to assess intensity. Participants shared stories ranging from having to wait longer for services than others to being brutalized by the police. Although we were not able to account for these differences in experiences in our analysis, providing space to document these stories in the participants’ own words allows us to better understand the forms of discrimination they are experiencing in these nine domains.

4.7 Conclusion

Despite these limitations, we were able to explore the relationship between health and different forms of racial discrimination in different domains. We found that Chuukese are experiencing racial discrimination in many facets of their lives, and that these experiences are significantly associated with poor health outcomes. Due to the cross-sectional design, we are not able to make causal conclusions. However these findings support the need for future studies. We must better understand the types of discrimination Chuukese are facing, in particular when they are interfacing with the police, applying for employment and housing, and when they are in the public, so that we can target appropriate programs and policies to address these issues.

It is also important to address the collective experiences of racial discrimination including changing negative messages and images in the media so there is a more balanced and fair representation of the community. Discussions surrounding other items assessed in the collective scale should also be explored including why they “feel like a burden,” “worry about their children,” and “don’t get equal rights.” These discussions need to be conducted in a safe space without fear of negative repercussions and should include an interdisciplinary team of community members, policy makers, healthcare providers, police, lawyers, and housing officials. Finally, this study highlights the importance of considering racial discrimination and social justice issues when addressing health inequities of the Chuukese community.
Chapter 5: CONCLUSION

Through this research project, all the originally purposed study questions were answered. Specifically, study one helped to identify culturally appropriate methods and items to access racial discrimination in the Chuukese community, including using face-to-face interviews to collect information and identified the oppression scale to measure experiences with collective racial discrimination.

Study 2 identified barriers to Chuukese community members obtaining appropriate healthcare, as well as potential solutions to overcoming these issues. Methods to talk about racial discrimination as well as specific examples of racial discrimination faced by the Chuukese community such as only having negative images of Micronesians in the news were also collected. Findings from both studies were later incorporated into the measurement tool.

Study 3 highlighted that Chuukese individuals are experiencing individual racial discrimination in many facets of their lives (especially while applying for a job, applying for housing or interacting with housing management, going about their daily activities, and by the police). Collective racial discrimination was highly prevalent in participants’ lives, with only one person reporting not experiencing any of the six items in our collective scale. We also found that, when measured separately, increases in individual and collective experiences were significantly associated with negative mental and physical health outcomes, even after controlling for several demographic variables, access to healthcare, and current tobacco use. However when measured together, only collective experiences of racial discrimination remained significant, suggesting this may be a more influential factor in Chuukese individuals’ health.

This dissertation also contributes to the literature surrounding research with the Chuukese community. One contribution was we identified methods to promote community members to disclose private information. A large concern as I began this research was that participants would not feel comfortable sharing personal stories of discrimination with an outside researcher, due the private nature of the Chuukese community. This would have kept me from completing my study goals. While there were examples of this issue, especially in study 2 when we learned from our community liaisons that, after the researcher left, participants discussed instances of racial discrimination they did not disclose during the interview. However, after employing culturally sensitive data collection methods (including conducting face-to-face interviews in the presence of trusted community leaders at a common community meeting space) as well as creating a culturally sensitive measurement tool based on information from the literature (study 1) and exploratory interviews with Chuukese community members and healthcare providers that serve them (study 2), we were able to collect information regarding their experiences with racial discrimination.
5.1 Future Research

This research has also helped to set a future research agenda. As mentioned in the discussion of study 3, we believe it would be useful to more robust scales to measure health, acculturation, and participation in risky health behaviors.

Future research on discrimination in the Micronesian community should also include other possible confounding variables. For example one important concept not included in our measurement tool was internalized racial discrimination. As found in our initial literature review, internalized racial discrimination can often times explain the association between reporting no racial discrimination and poor health (by believing in the negative stereotypes perpetrated by the oppressive culture, these individuals may blame themselves or register the unfair treatment as justified, causing them more stress, which in turn can lead to poorer health outcomes). By assessing internalized racial discrimination, we can test if non-significant findings between increased racial discrimination and poor health, or significant relationships between no racial discrimination and poor health, can be explained by this factor. However, while we want to try and include as many possible confounding variables with as robust scales as possible, it is also important to consider the length of the survey and not wanting to fatigue or frustrate participants with too many questions.

After making these improvements to the measurement tool, it would be beneficial to use it to collect information from a larger and more diverse population, both within the Chuukese community (i.e., younger adults and/or youth, Chuukese-Americans, and those living outside of public housing) as well as with the larger Micronesian community (i.e., those originating from different countries such as the Republics of the Marshall Islands and Palau, and Micronesians living in different US states and territories where there are substantial Micronesian populations, such as Guam and Arkansas). By diversifying our participants we could better understand if: 1) our findings are generalizable outside of our study population; and 2) if our measurement tool is applicable to other Micronesian populations. To help ensure a diverse and representative sample, it may also be beneficial to employ other sampling techniques such as respondent driven sampling which has been found to be a procedure that can successfully identify hidden populations while still “yield unbiased samples”. (1, pg.174) A larger study sample would also give us more power to explore if relationships between different constructs are significant.

5.2 Next steps: Programs and polices

Using our conceptual framework, based off of the social ecological model, Jones’s three levels of racial discrimination, Williams and Mohammed’s 2013 Framework for the Study of Racism and Health,
and input from Chuukese community members (chapter 1), I will lay my recommendations for programmatic and policy work. Starting with the outline of the hand, representing historical context, we must fulfill our original responsibilities of COFA treaties and work with COFA nations to strengthen their health and education infrastructure. As found in study 3, many people migrate to the US to obtain lifesaving treatments that are not available in their home countries. This is consistent with findings from an earlier study which also found Micronesian migrants citing medical reasons as one of the major impetuses for them coming to the US. (2) By strengthening their medical services in their home countries we could prevent forcing people to leave their support systems and ancestral homelands solely to seek medical care.

Figure 1.1: Framework to Study the Health of Chuukese living in (Hand Framework) - adapted from Social Ecological Model, (76) Jones, (36) and community member’s input.

Looking at the thumb, there is important policy work needed to be done to encourage systematic changes to support the health of the Chuukese community. I suggest that health professionals must continue to work with community groups such as the COFA-Community Action Network aimed creating policy change to reach equitable access to health insurance coverage, as this is a large barrier to obtaining care evident from interviews from study two. As well as the community led organization Fourth Branch which looks to portray a more balanced image of Micronesians in our local media. This is important as studies 1 and 2 found many Chuukese community members feel that there are only negative images of their group in the media. This may be especially relevant to health outcomes as social norms can be
effected by media, and in study 3 we found that racial discrimination experienced in the public domain, perpetrated by the general public, was significantly related to health outcomes.

The next finger of the hand framework represented organizations including the healthcare system. Based on findings from study 2 and 3 trainings should be integrated into annual trainings at workplaces, including hospitals, police stations, and public housing developments on the political history and culture of Micronesians. These trainings should include discussions identifying more effective ways of communicating and interacting with this population. Based upon findings from studies 2 and 3 it is also important to having interpreters and navigators available, especially at places which provided essential services.

Looking at the middle finger representing community and neighborhoods, as suggested in study 2, we need to provide the opportunity for people to come together and make positive connections and get to know one another. This may be a community celebration of different cultures or communities to help overcome the biases and stereotypes people hold regarding the Chuukese community. Also as suggested in study 2, we must also continue community conversation about racial discrimination and equity. To help facilitate this I suggest creating an interdisciplinary task force including trusted advocates, policy makers, lawyers, and community members to address issue surrounding racial discrimination. One task would be to create an entity that people can report cases of discrimination and help find solutions to these issues. As the group grows it will be important to include individuals from other areas especially, police and housing.

On an interpersonal level, when addressing health issues in the Chuukese community, findings from this dissertation support the importance of considering racial discrimination. This may mean when health providers are assessing smoking, depression, other measurements commonly assessed at intake, they also ask about experiencing racial discrimination, especially collective experiences.

Lastly addressing the pinky finger of the framework, addressing the individual I suggest supporting programs that help community members protect themselves from the harmful effects of racial discrimination. One such group is Hawai‘i’s Medical Legal Partnership, which not only provides legal services for patients at community health centers, but also runs a class to increase community members’ knowledge of their civil rights, as well as teaching participants how to advocate for themselves. Programs like these empower community members so they don’t fall victim to discriminatory acts. Another such program is Pacific Voices in Kalihi, which has created a safe space where kids learn and practice their cultures. This type of program can help to combat internalized racial discrimination. I suggest creating
similar programs for Chuukese adults, where they can discuss issues surrounding discrimination as well as participate in stress reducing activities to help mediate the negative effects of discrimination.

Taking this holistic approach to address issues in every level of the social ecological model helps to address all levels of three levels of discrimination Jones describe. Overall, this dissertation had taught me the importance of taking the time to figure out the right questions to ask, especially when working with groups who hold different cultural beliefs than the general public. As well as the importance of using a mixture of sources and methods to collect information, including the peer-reviewed literature, community members, qualitative interviews, and quantitative surveys and statistical analysis. I’ve also learned that racial discrimination is an important issue in the Chuukese community, one which was highly prevalent in the population we talk to, and which is significantly associated with their health.
Appendix A: University of Hawai'i Consent to Participate in Research Project: COMMUNITY

The purpose of this project is to better understand the experiences of Chuukese with Hawaii’s healthcare system. Before we start I want you to know your rights as a volunteer in this research.

Activities and Time Commitment: If you participate in this project, we will meet for an interview at a location and time that is good for you. The interview will consist of 6 questions. It will take about an hour. Interview questions include, “In Hawaii where do you get your healthcare?” Only you and I will be present during the interview, however if you want an interpreter we can provide one, or if you feel more comfortable you can bring a friend or family member. You will be one of about 20 people we will interview for this study.

Benefits and Risks: There will be no direct benefit to you for participating. However we hope this research will help give a voice to the Micronesian community as well as improve healthcare services in the future. There is little risk to you in participating in this research. However if you become stressed or uncomfortable answering any of the questions you can skip the question or take a break. You can also stop the interview or withdraw from the project at any time.

Privacy and Confidentiality: All information will be kept in a locked file cabinet, and only I will have the key. Only my University of Hawaii advisor, the UH Human Studies Program, and I will have access to the information. When we report the results of this research, we will not use your name. We will not use any other information that can identify you. We will use pseudonyms (fake names) and report our findings in a way that protects your privacy and confidentiality to the extent allowed by law.

Voluntary Participation: Your participation in this project is voluntary. You may stop participating at any time. If you stop being in the study, there will be no penalty or loss to you.

Questions: If you have any questions later about this study, you can contact me, Megan Hagiwara at (808-225-3039 or megan@hawaii.edu) or our other principal investigator Dr. Tetine Sentell at tsentell@hawaii.edu. If you have any questions about the rights as a research participant, you can contact the UH Committee on Human Studies at 808.956.5007 or uhirb@hawaii.edu.

Please keep the first page of this consent form for your records. If you agree to participate and understand the information provided to you about being in this research project, Racial Discrimination, Health, and Healthcare for Hawaii’s Chuukese Population.
☐ Is it okay to use your information for this research? If yes please check box.

☐ Is it okay to use your story for advocacy? This means we would use your story as testimony when talking with politicians or the public to help advocate for Micronesian issues including getting fair healthcare coverage for the community. If yes please check box.

☐ If you agree I would like to audio-record the interview to help me remember everything you say. After I write a copy of the interview, I will erase the recording.

My signature below indicates that I agree to participate in this research project.

_______________________________________________________
Print Name of Participant

________________________________________
Signature of the Participant                    Date
Aloha. Thank you so much for talking with me. My name is Megan Hagiwara. I’m a public health student and the University of Hawaii at Manoa. The purpose of this project is to better understand the experience of Chuukese with Hawaii’s healthcare system. Before we start I want you to know your rights as a volunteer in this research project.

**Activities and Time Commitment:** If you participate in this project, I will meet with you for an interview at a location and time that is good for you. The interview will consist of 5 questions. It will take about an hour. Interview questions will include questions like, “What has been your experience providing health service to Chuukese?” Only you and I will be present during the interview. You will be one of about 20 people I will interview for this study.

**Benefits and Risks:** There will be no direct benefit to you for participating in this interview. However I hope this research will help use better understand the Chuukese experience in Hawaii’s healthcare system and help us to continue to improve services. We believe there is little risk to you in participating in this research project. However if you do become stressed or uncomfortable answering any of the interview questions you can skip the question or take a break. You can also stop the interview or withdraw from the project at any time.

**Privacy and Confidentiality:** All information will be kept in a locked file cabinet, and only I will have the key. Only my University of Hawaii advisor, the UH Human Studies Program, and I will have access to the information. When we report the results of this research, we will not use your name. We will not use any other information that can identify you. We will use pseudonyms (fake names) and report our findings in a way that protects your privacy and confidentiality to the extent allowed by law.

**Voluntary Participation:** Your participation in this project is voluntary. You may stop participating at any time. If you stop being in the study, there will be no penalty or loss to you.

**Questions:** If you have any questions later about this study, you can contact me, Megan Hagiwara at (808-225-3039 or [megan@hawaii.edu](mailto:megan@hawaii.edu)) or our other principal investigator Dr. Tetine Sentell at tsentell@hawaii.edu. If you have any questions about the rights as a research participant, you can contact the UH Committee on Human Studies at 808.956.5007 or [uhirb@hawaii.edu](mailto:uhirb@hawaii.edu).

Please keep the first page of this consent form for your records.
□ Is it okay to use your information for this research? If yes please check box.

□ Is it okay to use your story for advocacy? This means we would use your story as testimony when talking with politicians or the public to help advocate for Micronesian issues including getting fair healthcare coverage for the community. If yes please check box.

□ If you agree I would like to audio-record the interview to help me remember everything you say. After I write a copy of the interview, I will erase the recording.

My signature below indicates that I agree to participate in this research project.

________________________________________________________________________
Print Name of Participant

________________________________________________________________________
Signature of the Participant

Date
Appendix C: Racial Discrimination, Health, and Healthcare for Hawaii’s Chuukese Population Interview Questions: COMMUNITY

Thank you so much for agreeing to talk with me today. I know that you are very busy so I really am happy we could meet. Today I’m going to be asking you several questions so I can try and better understand what has been your experience in the health care system here in Hawaii. When I say healthcare I’m talking about doctors, nurses, traditional healers, hospital staff, clinics, health insurance, and anything else doing with where we provide health services. And this could your personal experience using healthcare or your experience taking one of your family members to get health care. I hope this research will help add to efforts to make healthcare better for the Micronesian community. Before we start, I need you to sign a consent form. This is to help make sure that you know your rights as a volunteer in my research project.

Do you have any questions for me before we start? Again I just wanted to double check if it is it okay if I record this?

1. In Hawai‘i where do you to get your healthcare?

Do you go to more than one place? Community Health Center? Emergency Room? Traditional healer? Does your choice depend on the type of sickness you have? Do you go to the doctor when you are healthy?

2. What has been your experience with the healthcare in Hawai‘i?

What are the good and bad things about where you get your healthcare now? How is it different than the care you get back home? (Trying to get at their knowledge base) What about the quality of care? How is the process different? (ie calling ahead for an appointment, paperwork) Are you more comfortable with one or the other? How easy or hard is it to get what you need? What kinds of things about the healthcare system cause you to worry? Get frustrated or stressed? Are there some things that you like? What is helpful? Do the doctors or other providers ever say or do anything that goes against your culture or makes you feel uncomfortable? Do you ever see people like you working at the places you go to for healthcare? Does this matter?

3. We have learned from some Chuukese community members that they have experienced discrimination or unfair treatment because they are Chuukese when trying to get healthcare. Has this ever happened to you? Can you explain? Has it happened anywhere else?

4. Lastly, if there was someone who never met a Chuukese person what would you want them to know about your culture?

Thank you so much for your time. Your answers have given me a lot of help. Did you have any questions or anything else that you wanted to share with me before we end?
Demographic Information Form: Community

Birthday _____________  Gender: ____________

Where were you born? ___________________________________

How old were you when you came to Hawaii? ________________

What would you rate your overall health a year before you left your homeland?
Very Bad   Bad   OK   Good   Very Good

What would you rate your overall health now?
Very Bad   Bad   OK   Good   Very Good

What is your highest level of education?

☐ Less than high school
☐ Completed high school
☐ More than high school ______________________________

Do you currently have health insurance?

☐ Yes: Type ______________________________
☐ No

In the past year, when trying to get healthcare have you ever felt you were treated unfairly because of your race?

☐ Yes
☐ No
☐ Not sure

If yes, did it prevent you from getting the care that you needed?

☐ Yes
☐ No
☐ Not sure
Appendix D: Racial Discrimination, Health, and Healthcare for Hawaii’s Chuukese Population

Interview Questions: PROVIDERS

Thank you so much for agreeing to talk with me today. I know that you are very busy so I really am happy we could meet. Today I’m going to be asking you questions so I can try and better understand the experience Chuukese have in the health care system here in Hawaii. I plan on using this information for research, and hope that it will add to the collective efforts to provide equitable healthcare in Hawaii. Before we start, I need you to sign a consent form. This is to help make sure that you know your rights as a volunteer in this research project.

Do you have any questions for me before we start? Again, as we talked about in the consent form is it okay if I record this?

1. What has been your experience providing health service to Chuukese?
   - What if any, are the unique barriers and/or assets that Chuukese have in general that are different than other ethnic groups?
   - What, if anything, have you had to alter in the way you provide services in order to meet their needs?
   - Did you see any changes during or after the implementation of Basic Health Hawaii?

2. What have been your observations with other providers providing services for Chuukese?
   - What types of issues or barriers do they face?
   - Do providers have negative stereotypes of Chuukese or cultural differences?
   - Do you think it affects Micronesians’ abilities to access appropriate care?

3. What do you think could be done to help support providers serving Chuukese?
   - Specific infrastructural changes, policies, trainings, etc?

4. Do you have any other comments that we haven’t covered about providing health services for Chuukese in Hawaii?

5. Do know any other healthcare providers or Micronesian community members that might be willing to talk to me about this subject?

Thank you so much for your time. Your answers have given me a lot of help. Did you have any questions or anything else that you wanted to share with me before we end?
Demographic Information Form

Provider

Age _____________ Gender: _____________ Job Title: ________________________

Ethnicity: __________________________ Where were you born?

1. Do you provide direct services to Micronesian patients?
   | ___ | Yes | ___ | No, if no skip to Question 5

2. What would you rate the frequency you provide services?
   Very Often Somewhat often Not very often Hardly at all

3. Do you speak any Micronesian languages?
   | ___ | Yes, if yes which ones ________________________ | ___ | No

4. Do you use an interpreter when providing services to Micronesian patients who have low English proficiency?
   | ___ | Yes | ___ | No, I don’t need one | ___ | No, I wish I could

5. What type of organization do you work for?
   | ___ | Community Health Center
   | ___ | Hospital
   | ___ | Other __________________________

6. How would you rate your organization’s ability to provide appropriate healthcare services for Micronesians?
   Very Good Good Not so Good Not well

7. How would you rate Hawaii’s ability to provide appropriate healthcare services for Micronesians?
   Very Good Good Not so Good Not well

8. Do you think Micronesians face discrimination due to their ethnicity when trying to access healthcare?
   Yes, the majority do Yes, some do No, maybe one or two cases
   No, not at all
Appendix E: Social Justice and Health Equity for Chuukese Measurement Tool

Section 1: Please tell us a little about yourself

A. What is your gender? MALE (0) FEMALE (1)

B. How old are you? Age ____________

C. Where were you born? FSM RMI US Other___________

IF NOT BORN IN THE US:
   a) About how old were you when you came to the US? Before 19
   b) What is the main reason you came? ________________________________

D. What language do you usually speak at home ________________________

E. What is the highest level of school you completed?

   LESS THAN HIGHSCHOOL   GRADUATED HIGH SCHOOL OR MORE

C. What is your ethnicity?

   Chuukese(1) Marshallese(2) Other(3)________________

Do most people you meet for the first time know that you are (fill in reported ethnicity)?

   YES(1)   NO(2)   DON'T KNOW(3)

G. In the last year did you ever worry you didn’t have enough money for food or rent?

   YES(1)   NO(2)   DON'T KNOW(3)

H. In the last 30 days where did you live for most of the time?

<table>
<thead>
<tr>
<th>House/Apartment</th>
<th>Public Housing</th>
<th>At a friend's or family's place</th>
<th>Shelter</th>
<th>Car</th>
<th>Other</th>
</tr>
</thead>
</table>

I. Do you currently have health insurance? YES(1) NO(2) DON'T KNOW(3)

J. Do you have a regular doctor you see? YES(1) NO(2) DON'T KNOW (3)
**Section 2: Can you please tell us a little bit about your health?**

A. How is your physical health?

<table>
<thead>
<tr>
<th>Very Good</th>
<th>Good</th>
<th>OK</th>
<th>Bad</th>
<th>Very Bad</th>
</tr>
</thead>
</table>

B. A. How is your mental health?

<table>
<thead>
<tr>
<th>Very Good</th>
<th>Good</th>
<th>OK</th>
<th>Bad</th>
<th>Very Bad</th>
</tr>
</thead>
</table>

C. During the past 30 days, about how many days did bad physical or mental health keep you from doing your usual activities? *(PROBE: Keep you from getting out of bed)*

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>_______</td>
<td>_______</td>
<td>_______</td>
<td>_______</td>
</tr>
</tbody>
</table>

D. DON’T KNOW

E Are you currently taking ALL the medications prescribed by your doctor?

<table>
<thead>
<tr>
<th>Yes, taking all</th>
<th>Only some WHY?</th>
<th>No, can’t afford</th>
<th>No, I don’t need any</th>
<th>No, other reason:</th>
</tr>
</thead>
<tbody>
<tr>
<td>_______</td>
<td>_____________</td>
<td>_______</td>
<td>_______</td>
<td>_______</td>
</tr>
</tbody>
</table>

F. Please tell us if you’ve ever used any of these products. If so how often you use (Never, rarely, sometimes, everyday)

<table>
<thead>
<tr>
<th>Product</th>
<th>Yes</th>
<th>No</th>
<th>n/a</th>
<th>Rarely (1x a week or less)</th>
<th>Sometimes (2-4x a week)</th>
<th>Everyday (5-7x a week)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cigars or cigarettes</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Betel nut with tobacco</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Betel nut without tobacco</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Snuff/ chew tobacco</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Electronic cigarettes</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Section 3: Please tell us about getting healthcare in Hawaii

A. Was there ever a time you wanted to see a doctor but you couldn’t? YES(2) NO(1)

**IF YES:** Why couldn’t you?

<table>
<thead>
<tr>
<th>No insurance</th>
<th>Have insurance but couldn't afford co-pay</th>
<th>Didn't know where to go</th>
<th>Treated poorly last time went so didn't want to go back</th>
<th>Other: ______________________</th>
</tr>
</thead>
</table>

B. Was there ever a time you wanted to see a specialist but you couldn’t? YES(2) NO(1)

**IF YES:** Why couldn’t you?

<table>
<thead>
<tr>
<th>No insurance</th>
<th>Have insurance but couldn't afford co-pay</th>
<th>Didn't know where to go</th>
<th>I missed first appointment and told I couldn’t go anymore</th>
<th>Other: ______________________</th>
</tr>
</thead>
</table>

C. Have you ever been given a procedure (surgery, birth control implantation) but you didn't know why or you didn't want it but were forced to?

YES (1) NO (0)

D. When you get healthcare how often do these things happen?

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Not very often</th>
<th>Sometimes</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>You're treated unfairly</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>The front desk staff treats you not nicely or aren't respectful</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>You needed a translator but the clinic/hospital didn't provide one</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Overall your experience makes you feel like I don't want to go back because they didn't really help</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

E. If you are treated unfairly, without respect, or not nicely why do you think that is? Circle all that apply

<table>
<thead>
<tr>
<th>I'm Micronesian</th>
<th>My immigration status</th>
<th>My ability to speak English</th>
<th>The way I dress</th>
<th>Don't know</th>
<th>Haven't been treated unfairly</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other ____________________________
Section 4: Over the past year, how have others treated you and the Micronesian community? Please let us know how much you agree with each statement; Not a lot, a little, or a lot.

<table>
<thead>
<tr>
<th></th>
<th>Not A lot</th>
<th>A little</th>
<th>A fair amount</th>
<th>A lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>They look down on my group</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>They see us as a burden</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>They do not give us equal rights</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>There is only bad stuff about us on the TV, radio, and news.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>We worry about our children being treated badly because they are Micronesian</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>We are treated like criminals even when it is not our fault</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Section 5: Racial discrimination is when you are treated differently or unfairly because of your race/ethnicity, maybe they treat you not nicely or with disrespect

A. Please think about how often you were discriminated against because you are Micronesian in these different places (Never, Rarely, Often, Always):

<table>
<thead>
<tr>
<th>Event</th>
<th>Never</th>
<th>Rarely</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>At school?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When you're trying to get a job?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>At work by your boss or co-workers?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>When you are applying for housing or by the housing manager or other residents?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>When you are trying to get healthcare?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>When you're getting services in a store or restaurant?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>At the bank or when trying to get a loan?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>On the street or in a public setting?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>From the police or in the courts?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

B. When you're discriminated against because you're Micronesian how often do you do each of these things? (Never, rarely, Often, Always)

<table>
<thead>
<tr>
<th>Action</th>
<th>Never</th>
<th>Rarely</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Ignore it, forget it, or accept it as a fact of life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>b) Try to avoid it so it won't happen again?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>c) Try to do something about it to fix it?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>d) Talk to other people about it?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>e) Feel ashamed, humiliated, anxious or fearful?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>f) Feel angry, annoyed or frustrated?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>g) Feel powerless, hopeless or depressed?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>h) Get a headache, an upset stomach, tensing of your muscles, or a pounding heart?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>i) Drink alcohol, smoke cigarettes, chew tobacco or betel nut</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Chapter 1: Introduction


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Chapter 3: Study 2


12. Native americans


Chapter 4: Study 3


Chapter 5: Conclusions
