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Stress, Neighborhood Context, and Breast Cancer Risk among Asian American, Native Hawaiian, and Pacific Islander Women

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Stress, Neighborhood Context, and Breast Cancer Risk among Asian American, Native Hawaiian, and Pacific Islander Women

A dissertation submitted in partial satisfaction of the

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in Public Health

by

Brittany N. Morey

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ABSTRACT OF THE DISSERTATION

Stress, Neighborhood Context, and Breast Cancer Risk

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Doctor of Philosophy in Public Health

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Professor Gilbert Chee-Leung Gee, Chair

Breast cancer is the most common cancer among women in the United States (US), including all major ethnic groups of Asian American, Native Hawaiian, and Pacific Islander (AANHPI) women. In contrast to recent trends of breast cancer incidence among other racial/ethnic groups in the US, the incidence of breast cancer among AANHPI women has been increasing rapidly over time. Incidence is also generally higher among women who are US-born relative to foreign-born and among those who have resided longer in the US, after controlling for age. These patterns suggest that factors related to living in the US context may increase breast cancer risk for these women. This dissertation draws upon the Stress-Exposure Disease Model and segmented assimilation theory to study the associations between psychosocial stress, social environments, and physical environments on odds of having breast cancer. Furthermore, breast cancer risk was assessed by examining health behaviors related to cancer (physical activity, alcohol use, fruit and vegetable consumption) and body mass index. Data was from the Asian Community Health Initiative (N=621), a case-control study of 139 breast cancer cases and 483 ethnicity- and age-matched controls, all self-identified AANHPI women living in the San Francisco Bay Area. Geographic Information Systems and multivariable linear regression were used to assess the roles of psychosocial stress, ethnic enclaves, and the built environment on breast cancer risk. Analyses controlled for well-known risk factors (e.g. age, family history of breast cancer, reproductive history, etc.). This research found that psychosocial stressors were not associated with having breast cancer. Greater general stress was associated with less physical activity. Low collective efficacy was associated with lower fruit consumption and low neighborhood safety was associated with lower vegetable consumption. Women living in high ethnic enclave, high socioeconomic status neighborhoods had the highest odds of having breast cancer. Additionally, living in high ethnic enclaves was associated with less strenuous physical activity and lower alcohol consumption. Features of the built environment were not associated with breast cancer risk. This research shows how social environments are associated with health for AANHPI women, contributing to our understanding of how health for this minority group is uniquely shaped by neighborhood contexts.

The dissertation of Brittany N. Morey is approved.

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2017

DEDICATION

To my incredible family, who supported me and believed in me every step of the way.

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LIST OF ACRONYMS

AANHPI = Asian American or Native Hawaiian or Pacific Islander

API = Asian or Pacific Islander

Asian CHI = Asian Community Health Initiative

BMI = body mass index

HT = hormone therapy

SES = socioeconomic status

US = United States

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Alcalá HE, Sharif MZ, **Morey BN**. (2017). Misplaced Trust: Racial Differences in Use of Tobacco Products and Trust in Sources of Tobacco Health Information. *Nicotine & Tobacco Research*. ntx080. doi: 10.1093/ntr/ntx080

Gee GC, **Morey BN,** Walsemann K, Ro A, Takeuchi D. (2016). Citizenship as Privilege and Social Identity: Implications for Psychological Distress. *American Behavioral Scientist*. 60(5-6):680-704.

Gee GC, de Castro AB, Wang MC, Crespi CM, **Morey BN**, Fujishiro K. (2015). Feasibility of Conducting a Longitudinal, Transnational Study of Filipino Migrants to the United States: A Dual-Cohort Design. *Journal of Health Care for the Poor and Underserved.* 26(2):488-504.

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Morey, BN. (2014). Victoria Park Samoan Focus Groups: Full Report. The Safe Active Family Environments for Asians and Pacific Islanders Project. Asian and Pacific Islander Obesity Prevention Alliance.

Morey, BN. (2012). Results from the Victoria Park Community Survey. The Safe Active Family Environments for Asians and Pacific Islanders Project. Asian and Pacific Islander Obesity Prevention Alliance.

Morey, BN. (2012). Results from the Lennox Park Community Survey. The Safe Active Family Environments for Asians and Pacific Islanders Project. Asian and Pacific Islander Obesity Prevention Alliance.

CHAPTER 1: INTRODUCTION

Breast cancer is the most common cancer among women in the world (Ferlay et al., 2014). In the United States (US), one out of every eight women (12.3%) will develop invasive breast cancer in her lifetime (National Cancer Institute, 2016). In 2013, an estimated 3 million women were living with breast cancer in the US, and one in ten of these women are estimated to die from breast cancer within five years of diagnosis.

There is still much that we do not understand about what causes breast cancer, despite extensive research on the topic. Some of breast cancer risk factors that have been well documented include age, family history, genetics, reproductive factors, childbirth, and breastfeeding (Centers for Disease Control and Prevention, 2014). In addition, modifiable risk factors including alcohol use, overweight and obesity, and physical inactivity have been shown to contribute to the burden of breast cancer. Danaei, Vander Hoorn, Lopez, Murray, and Ezzati (2005) conclude that in higher-income countries such as the US, these modifiable behavioral risk factors contribute to 27% of breast cancer deaths. Developed countries in general tend to have higher rates of breast cancer compared with developing countries, making the adoption of Western lifestyles a possible explanation for this difference (Stewart & Wild, 2014).

Research on breast cancer among immigrants to the US may provide important insights into the factors affecting breast cancer risk. First generation immigrants usually have similar rates of breast cancer as in their country of origin when they initially immigrate. To illustrate, in 2008, age-adjusted breast cancer incidence rates in areas such as Eastern Asia (25.3 per 100,000), South-Central Asia (24.0 per 100,000), and Central America (26.0 per 100,000) were lower than in North America (76.7 per 100,000) (Jemal et al., 2011). However, as immigrant groups spend more time in the US, breast cancer rates begin rapidly approaching the higher US rates. For example, US-born Chinese, Filipina, and Hispanic women have breast cancer incidence rates (122, 130, and 93.8 per 100,000, respectively) that are more similar to the total US population rate for women (124.6 per 100,000) (Gomez, Quach, et al., 2010; Keegan, John, et al., 2010; National Cancer Institute, 2016).

Asian American, Native Hawaiian, and Pacific Islander (AANHPI) women make up one such group that has displayed increasing rates of breast cancer over time. In Los Angeles County between 1993 and 1997, breast cancer incidence among Asians rose by an average 4.6% per year (from 67.1 to 77.6 per 100,000), more than any other ethnic group, including non-Hispanic whites (1.1% per year from 122.4 to 128.6 per 100,000) (Deapen, Liu, Perkins, Bernstein, & Ross, 2002). In addition, the children of immigrants tend to have rates that approach that of the general US population. For example, US-born Chinese and Filipina women have 80% and 30% higher rates, respectively, than their foreign-born counterparts living in the US (Chinese—122.1 compared to 66.3 per 100,000; Filipina—129.5 compared to 98.2 per 100,000) (Gomez, Quach, et al., 2010).

It is unclear what it is about the immigrant experience in the US and becoming more “acculturated” that is associated with the rapid increase in breast cancer risk within a relatively short period of time. Most researchers have suggested that adoption of Western diets and physical activity patterns, and changes in reproductive factors (e.g. higher age at first birth, fewer children, lower breastfeeding rates, and earlier menstruation) may increase breast cancer risk among AANHPI immigrants (Gomez, Quach, et al., 2010; Stanford, Herrinton, Schwartz, & Weiss, 1995).

Some research suggests that, for Hispanics, living in ethnic enclaves (i.e. a physical space with high ethnic concentration) is protective against developing breast cancer, since living in such neighborhoods may slow the rate of acculturation (Keegan, John, et al., 2010). This research has not been replicated for AANHPIs, but it could be that living in an ethnic enclave allows AANHPIs to maintain cultural lifestyles and delay the process of assimilation to health behaviors related to breast cancer risk. Nevertheless, living in an ethnic enclave may not be monolithically good for immigrant health. For example, ethnic enclaves may provide racial/ethnic minorities with more access to healthy, familiar food options at venues such as ethnic grocery stores. At the same time, ethnic enclaves are associated with being located in dense urban areas with higher concentration of poverty, crime, and worse walkability—factors that could worsen health (Osypuk, Diez Roux, Hadley, & Kandula, 2009). Therefore, focusing on the specific features of neighborhood environments that AANHPIs live in may provide more nuanced explanations for how people are restricted or enabled by their place of residence to have lower breast cancer risk.

There may be more to acculturation than simply adopting Western lifestyles. Indeed, adapting to life in the US is not a smooth, uniform process experienced by all immigrants. People may experience increased psychosocial stress as a result of immigration, being viewed as an "outsider," or feeling unsafe in their neighborhoods (Gee, Ro, Shariff-Marco, & Chae, 2009; Kim & Spencer, 2011). These social stressors may directly impact genetic mutations leading to breast cancer, or they might affect health behaviors related to breast cancer risk (Antonova, Aronson, & Mueller, 2011). Stressors may impact AANHPIs on multiple ecological levels, from individuals' experiences of discrimination, to safety threats in the larger community (Chae et al., 2008; Gee & Ford, 2011; Gee et al., 2009). More research is needed to confirm the role of stress in impacting breast cancer risk, especially for AANHPIs that may experience stressors unique to the immigrant experience.

The goal of this research is to identify novel social and physical environmental factors that contribute to breast cancer risk for AANHPI women. Furthermore, this study describes how neighborhood contexts and individual stressors interact to influence breast cancer risk. A case-control study of AANHPI women in the San Francisco Bay Area was used to address this goal. This dissertation uses a book format, split into three overarching aims. Aim 1 addresses how individual- and neighborhood-level stressors interact to influence breast cancer risk. Aim 2 examines how living in an ethnic enclave is associated with breast cancer risk for AANHPI women. Aim 3 identifies features of the built environment that are associated with breast cancer risk and how this explains the impact of living in an ethnic enclave.

LITERATURE REVIEW

<u>Breast Cancer in Asian American, Native Hawaiian, and Pacific Islanders (AANHPIs)</u>

Breast cancer is the leading cause of cancer among AANHPI women (Ferlay et al., 2014). Within AANHPI ethnic sub-groups, breast cancer rates vary. For many AANHPI sub-groups, breast cancer incidence rates are lower than for non-Hispanic white women (145.2 per 100,000), with the exception of Native Hawaiians (175.8 per 100,000), who have higher rates of breast cancer than non-Hispanic white women (Miller, Chu, Hankey, & Ries, 2008). The AANHPI ethnic groups with the highest rates of breast cancer are Native Hawaiians (175.8 per 100,000), Japanese (126.5 per 100,000), Tongan (118.0 per 100,000), Samoan (102.5 per 100,000), and Filipina women (100.4 per 100,000). Samoan, Tongan, and Laotian women tend to be diagnosed with more advanced-stage breast cancer. Breast cancer is among the top three causes of cancer death for female AANHPIs (including Asian Indian, Chinese, Filipina, Native Hawaiian, Japanese, Samoan, and Vietnamese), with the exception of Koreans, where it is in the top five. Native Hawaiian and Samoan women have the highest breast cancer death rates among

AANHPI groups (33.5 per 100,000 and 36.2 per 100,000, respectively), which are higher than the breast cancer mortality rates for non-Hispanic white women (27.8 per 100,000).

Although overall breast cancer rates for Asians are lower than non-Hispanic White women, age-specific data provide a more nuanced portrayal. Incidence rates for US-born Chinese and Filipina women are in fact higher than corresponding rates for non-Hispanic White women at ages 44 years or younger (39.8 and 43.1 compared to 27.1 per 100,000 person-years) and at ages 45 to 54 years (276.9 and 334.3 compared to 240.7 per 100,000 person-years) (Gomez, Quach, et al., 2010). At ages 55 years and older, rates for Chinese and Filipina drop below rates for non-Hispanic White women (275.6 and 263.8 compared to 449.2 per 100,000 person-years). Another study confirmed that among women at ages 44 years or younger, APIs had higher risk of breast cancer than Whites (OR=1.62, 95% CI: 1.35–1.94), with highest risks among Filipina (OR=1.72, 95% CI: 1.15–2.56) and Japanese women (OR=1.59, 95% CI: 1.20–2.910) (Reynolds et al., 2011). These trends of higher breast cancer rates at younger ages for Asian women when compared to non-Hispanic White women is similar to the trend seen among African American women (Anderson, Rosenberg, Menashe, Mitani, & Pfeiffer, 2008). Examining health behaviors and risk exposures in ages prior to menopause may reveal important insights into breast cancer etiology for Asian women.

Breast Cancer, Immigration, and Acculturation

Prior studies have shown that for Asian immigrants, the amount of time lived in the US is associated with higher breast cancer risk. A study by Ziegler et al. (1993) was one of the first to demonstrate that for female Asian American immigrants, living in the US for a decade or longer was associated with an 80% higher risk of developing breast cancer than more recent migrants. In addition, US-born Asian American women with foreign-born parents had a 46% higher risk than their parents, their children had a 65% higher risk than their grandparents, and their grandchildren had a 109% higher risk than their great-grandparents.

Asian women living in the US have higher rates of breast cancer than their counterparts living in Asian countries. An early study on this topic found that foreign-born Chinese women living in the US had higher annual rates of breast cancer compared with their counterparts living in China (47 versus 20–30 per 100,000 person-years) (Stanford et al., 1995). US-born Chinese women living in the US had even higher breast cancer rates, at 59 per 100,000 person-years. However, this study had limitations, including how missing birthplace information was handled (Lin, Clarke, O'Malley, & Le, 2002).

Using improved birthplace estimates, Gomez, Quach, et al. (2010) revealed how rapidly breast cancer risk incidence has been increasing among AANHPI women living in the US. Between 1998 and 2004, breast cancer incidence increased most among US-born Filipina and foreign-born Korean women, by 4% every year. In fact, during this same time period, breast cancer incidence increased annually among all AANHPI groups, with the exception of foreign-born Vietnamese and foreign-born Japanese women. Furthermore, outside of the US, breast cancer incidence in developing Asian countries is noticeably increasing (DeSantis, Ma, Bryan, & Jemal, 2014; Jemal et al., 2011; Youlden, Cramb, Yip, & Baade, 2014). These staggering trends point to the importance of environmental and non-genetic factors in breast cancer causation. Therefore, examining breast cancer risk among AANHPIs may provide important insights into the roles of environments and modifiable risk factors in affecting breast cancer incidence.

Non-genetic factors contributing to increasing breast cancer rates include the adoption of westernized health behaviors and exposure to cancer causing chemicals. Changing diets, earlier age at menarche, later age at first birth, lower breastfeeding rates, higher body-mass index, and other lifestyle and reproductive factors associated with westernization have been implicated as contributors to increasing breast cancer risk (Gomez, Clarke, et al., 2010; Liu et al., 2011; Park, Kim, Kang, Jung, & Yoo, 2011; Zhang, Dhakal, Zhao, & Li, 2012). The association between adoption of western lifestyles and breast cancer underscores the possible role of acculturation on breast cancer risk. Here, acculturation is defined as the process in which members of one cultural group adopt the beliefs and behaviors of another cultural group (Thomson & Hoffman-Goetz, 2009). As racial/ethnic minorities acculturate, they tend to adopt western diets with more saturated fats and fewer fruits and vegetables, which may increase breast cancer risk (Howell et al., 2014). Women may also adopt more sedentary lifestyles or consume more alcohol in accordance with US behavioral norms, both of which contribute to breast cancer risk (Monninkhof et al., 2007; Park et al., 2014; Rosenberg et al., 2014; Zhang et al., 2007). Westernization is also associated with higher socioeconomic status (SES), later marriage, fewer children, having children at later ages, and breastfeeding less—all factors related to increased breast cancer risk (Nelson, 2006).

Beyond lifestyle risk factors, living in the US context may lead to an increase in exposure to carcinogenic chemicals, most notably endocrine disrupting chemicals such as bisphenyl-A (BPA) (Rogers, Metz, & Yong, 2013; Vandenberg, Hauser, Marcus, Olea, & Welshons, 2007). BPA has been extensively studied a chemical with estrogen-like properties that may disrupt the normal functions of estrogen within the body, leading to increased risk of breast cancer (Dairkee et al., 2008; Fernandez & Russo, 2009; Pupo et al., 2012). BPAs are commonly found in plastic packaging and can leach into food and drink (Vandenberg et al., 2007). While population-level studies of the effects of these endocrine disrupters on breast cancer are difficult to conduct, given the range of other cancer risk factors simultaneously affecting women, some studies have made links between these synthetic chemicals and breast cancer in rats and human cells in laboratory research (Dairkee et al., 2008; Dong, Terasaka, & Kiyama, 2011; Jenkins et al., 2009; Soto, Brisken, Schaeberle, & Sonnenschein, 2013). Therefore, exposure to cancer causing chemicals in westernized environments such as the US may increase breast cancer risk.

Breast cancer risk for immigrant groups in the US may be buffered by living in an ethnic enclave by slowing the rate of acculturation and/or by maintaining cultural lifestyles protective of breast cancer. For Hispanic women, it seems that residence in a Hispanic enclave is associated with lower incidence of breast cancer (Eschbach, Mahnken, & Goodwin, 2005; Keegan, John, et al., 2010). In fact, Keegan, Quach, Shema, Glaser, and Gomez (2010) revealed that living in a Hispanic enclave had a stronger association with breast cancer incidence than neighborhood SES. On the other hand, ethnic enclaves have been associated with higher exposure to environmental chemical toxins for immigrant groups, including AANHPIs, which may lead to increased risk for cancer among residents (Gordon, Payne-Sturges, & Gee, 2010; Morey, 2014). Few studies have demonstrated why living in an ethnic enclave might increase or decrease breast cancer incidence, and we are aware of no studies that have examined this for AANHPIs.

Social Ecological Theory and Stress-Exposure Disease Framework

This dissertation research draws on the Social Ecological Theory, which was originally proposed to understand the dynamic relationships between personal and environmental factors contributing to human development (Bronfenbrenner, 1997). When applied to health, social ecological frameworks postulate that individuals are nested within various levels of social systems. These larger social systems and individuals are interrelated, and to understand health outcomes, these relationships must be understood. The current research project will examine how breast cancer risk for AANHPIs is affected by interrelated individual- and neighborhood-level social and physical factors.

An extension of the Social Ecological Theory is the Stress-Exposure Disease Model (Gee & Payne-Sturges, 2004). Gee and Payne-Sturges postulate that residential segregation determines differential exposure to environmental toxins, community stressors, and community resources among racial/ethnic minority groups. Community stressors promote illness, and may include social and physical attributes of the environment, such as crime, litter, and other neighborhood problems. Community resources prevent illness, and may include social aspects, such as collective efficacy (i.e. mutual trust and willingness to intervene for the common good), or the built environment (i.e. the structures and infrastructure built for human use) (Kawachi & Berkman, 2003; Sampson, Raudenbush, & Earls, 1997). When effects of health-harming features outweigh the benefits of health-promoting resources in communities, poor health may result. Accordingly, I anticipate that community stressors may increase the risk of breast cancer and that community resources will decrease the risk for breast cancer.

This framework further suggests that individuals' vulnerability to environmental exposures is moderated by stress, which may act at individual and higher ecological levels. This implies four key propositions: 1) stress is related to increased risk for illness; 2) stressors occur at multiple levels; 3) stressors at the community level amplify the effects of exposures at the person-level; and 4) coping resources at multiple levels may decrease risk of illness.

Segmented Assimilation Theory

This dissertation additionally draws on segmented assimilation theory, as proposed by Portes and Zhou (1993). The concept of segmented assimilation was originally proposed to help explain the experiences of second generation children of non-White immigrants. This theory stipulates that there are different ways in which immigrant groups may assimilate in the US that largely depends on social contexts. First, immigrants may undergo a "traditional" mode of assimilation that is marked by integrating into the mainstream US culture. Second, immigrants may experience downward assimilation that occurs when groups are constrained by societal factors to become socially and economically disadvantaged. Third, immigrants may alternatively experience upward mobility by drawing on the social and economic benefits conferred through participating in the immigrant community. This concept of segmented assimilation asserts that there is not one single path towards incorporation into a majority culture. Immigrant minority groups may become more or less disadvantaged over time depending on social constraints or resources available to them.

Segmented assimilation has been applied by researchers in studies of health. These studies have examined how the different assimilation trajectories just described may have varying impacts on health (Akresh, Do, & Frank, 2016; Walton, 2012). Specifically, segmented assimilation theory has been tested in relation to health by examining how contexts, such as neighborhood economic disadvantage, shape the relationships between assimilation and health.

The current research applies segmented assimilation theory by examining how ethnic enclaves and neighborhood resources are associated with breast cancer risk for foreign-born and US-born AANHPIs. To my knowledge, this is the first study to apply segmented assimilation theory to understand cancer risk. This research applies the Stress-Exposure Disease Model and segmented assimilation theory to the study of breast cancer. The following section provides a brief overview established breast cancer risk factors. Afterwards, the potential roles of stressors acting at individual- and neighborhood-levels on breast cancer risk are discussed.

Known Breast Cancer Risk Factors

There are many individual-level factors known to increase risk for breast cancer in women. Women are more likely to have breast cancer at older ages, as two out of three invasive breast cancers are found in women aged 55 and older (Stewart & Wild, 2014). Families with mutations in either the BRCA1 or BRCA2 genes are thought to have lifetime risk of breast cancer in the range of 45 to 65%, but may be as high as 80% in some families (Ford et al., 1998; Kurian, 2010; Malone et al., 2010). Women with a family history of breast cancer, especially if a relative with breast cancer is a mother, sister, or daughter, have higher risk of breast cancer. However, 87% of women with breast cancer do not have a family member with the disease, indicating that experiences over their lifetimes rather than heredity caused the genetic mutations leading to breast cancer (Collaborative Group on Hormonal Factors in Breast, 2001).

Women’s personal histories are also related to breast cancer risk. Longer lifetime exposure to the hormones estrogen and progesterone are known to increase breast cancer risk. Therefore, increased risk of breast cancer is associated with decreasing ages of menarche among women (Collaborative Group on Hormonal Factors in Breast Cancer, 2012; Kelsey, Gammon, & John, 1993). Reproductive factors are also associated with breast cancer; women who have had no children or who gave birth to their first child after 30 years-old have slightly higher risk of breast cancer. Having multiple pregnancies or becoming pregnant at younger ages is protective against breast cancer. Studies show that the use of oral contraceptives increases breast cancer risk, although this risk returns to normal after women stop taking these pills (Marchbanks et al., 2002). In addition, use of combined hormone therapy (hormone therapy with both estrogen and progesterone) after menopause has been linked with increased risk of breast cancer (Chlebowski et al., 2009). Breastfeeding has been shown to decrease breast cancer risk. Mothers who breastfed for over one year over their lifetimes (for all children combined) have significantly decreased risk of developing breast cancer (Kotsopoulos et al., 2012; Möller, Olsson, Ranstam, & Cancer, 2002).

Behavioral factors that are commonly studied with regards to breast cancer risk include physical activity and alcohol consumption. Physical activity seems to reduce women's risk of breast cancer and also aids in increasing chance of survival for women with breast cancer (Monninkhof et al., 2007). In addition, women who consume the equivalent of one alcoholic drink per day have a slightly increased risk of breast cancer than non-drinkers (Zhang et al., 2007). Greater alcohol consumption is related to even greater increased risk of breast cancer (Park et al., 2014). Although poor diet and tobacco use are risk factors for cancer in general, the current evidence relating these behaviors to increased breast cancer incidence have been mixed (Aune et al., 2012; Gaudet et al., 2013; Jung et al., 2013). Higher body mass index in older ages is a risk factor for breast cancer for postmenopausal women (Cheraghi, Poorolajal, Hashem, Esmailnasab, & Doosti Irani, 2012; Key et al., 2003). In addition, weight gain in adulthood has been linked to greater risk for postmenopausal breast cancer (Eliassen, Colditz, Rosner, Willett, & Hankinson, 2006).

Psychosocial Stress and Breast Cancer

Psychosocial stress has been proposed as a possible breast cancer risk factor. When individuals are exposed to chronic stress, their bodies respond by eliciting a stress response which disrupts homeostasis. This repeated "wear and tear" on the body has been coined as allostatic load, which can weaken the body's immune system, alter hormonal functioning, and contribute to chronic disease (McEwen, 1998; McEwen & Seeman, 1999). Research on health disparities has built upon the concept of allostatic load to suggest that minority groups experience poor health as a result of social stressors unique to racial/ethnic minorities, such as discrimination (Geronimus, 1996; Geronimus, Hicken, Keene, & Bound, 2006). Studies have shown that AANHPIs are one minority group that continues to experience racial discrimination (Chae et al., 2008; Gee & Ro, 2009). Asian Americans who report experiencing discrimination are more likely to experience poor health, including worse mental health and riskier health behaviors (Gee et al., 2009). These findings are consistent with the Stress-Exposure Disease Model, since greater psychosocial stress is related to increased risk of illness (Gee & Payne-Sturges, 2004).

The influence of stress on breast cancer is biologically plausible, because the stress hormone cortisol plays an important role in mammary gland development and function (Antonova et al., 2011). Cortisol has been shown to have a physiological role in the mammary gland during pregnancy and lactation. In addition, irregular levels of cortisol can alter the generation or activity of estrogen, indirectly contributing to breast tumorigenesis.

However, the research on psychosocial stress and breast cancer outcomes has been mixed. This may be due to the problematic measurement of stress, with studies operationalizing stress in different ways: using life events, reported feelings of stress, or biological measures of stress. Furthermore, epidemiologic evidence in this area is difficult to assess due to differences in study design, confounding factors, different types of stress exposures, and the timing of stress exposure or stress measurement (Antonova et al., 2011). One meta-analysis found no association between bereavement (a type of stressor) and breast cancer, but a more than twofold increase in breast cancer associated with other adverse life events, such as divorce, severe illness, or being fired from work (OR = 2.64, 95% CI = 2.34 to 2.96) (Petticrew, Fraser, & Regan, 1999). Another meta-analysis found that breast cancer risk is significantly associated with increased number of stressful life events, death of a significant other, and death of a relative or friend (Duijts, Zeegers, & Borne, 2003). The current evidence seems to suggest that major life events are more strongly associated with breast cancer risk than everyday stressors or work-related stress (Antonova et al., 2011; Kruk, 2012). This may be due to measurement issues for self-reported stress in retrospective studies. Major life events may be more likely to be reported accurately than everyday stressors, which may be more subject to recall bias. Additionally, major life events may have different biological effects than chronic stressors. The timing of the exposure to stress is also important to consider, as research has shown that cancer risk is most strongly associated with life events that occurred within 11 years prior to diagnosis (Lillberg et al., 2003).

Immigrant groups may be impacted by stressors that are unique to the immigrant experience. These may include stress from racial/ethnic discrimination, from loss of social supports from the country of origin, and from fear of deportation (Gee & Ford, 2011; Gee et al., 2009; Kim & Spencer, 2011). These stressors have not been studied in relation to breast cancer risk.

Neighborhood Environments & Breast Cancer Risk

Neighborhood social and physical environments may impact risk for breast cancer, though more research is needed to connect these factors with cancer etiology (Gomez et al., 2015). Some research on neighborhood environments and breast cancer found greater incidence in neighborhoods with higher socioeconomic status (SES) and greater urbanization (Reynolds et al., 2005; Robert et al., 2004a). Some suggested explanations for the associations between these neighborhood factors and breast cancer have been behavioral (e.g. delayed pregnancy) and contextual (e.g. exposure to higher population density) (Gomez, Quach, et al., 2010; Keegan et al., 2014). However, many other aspects of neighborhood environments and the mechanisms by which they may affect breast cancer have not been studied.

Some aspects of the neighborhood social environment that may be associated with breast cancer risk include exposure to neighborhood crime, perceived safety, neighborhood disorder, and low collective efficacy. These neighborhood social stressors may lead to individual-level stress, which may increase breast cancer risk. Furthermore, neighborhood social stressors may increase vulnerability to (i.e. amplify the effect of) individual-level stressors, in accordance with the Stress-Exposure Disease Framework (Gee & Payne-Sturges, 2004). For example, one study found that exposure to violence increased vulnerability of developing asthma as a result of exposure to traffic-related air pollution (Clougherty et al., 2007). Applying the Stress-Exposure Disease Framework, it is conceivable that exposure to neighborhood social stressors would increase vulnerability to individual-level stressors, leading to increased breast cancer risk among those individuals experiencing stress. Neighborhood stressors may also impact breast cancer risk via health behaviors. To illustrate, stress from threats to neighborhood safety may prevent people from having healthy lifestyles by limiting outdoor physical activity due to fears of potential threats and by increasing tobacco and alcohol use as means of coping with neighborhood stress (McNeill, Kreuter, & Subramanian, 2006; Miles, 2006; Stockdale et al., 2007).

For immigrant groups, a notable aspect of the social environment that may impact breast cancer risk is living in ethnic enclaves—i.e. neighborhoods with high ethnic concentration. Studies conducted among Hispanics show that living in Hispanic ethnic enclaves is associated with lower incidence of breast cancer, compared to those not living in ethnic enclaves (Eschbach et al., 2005; Keegan, John, et al., 2010). It is unclear why this may be the case. It is also unknown whether other ethnic groups with high proportions of immigrants, such as AANHPIs, show the same association between living in ethnic enclaves and breast cancer risk. This association may additionally vary, depending on individuals' characteristics, such as nativity status. Social norms about health behaviors related to breast cancer, such as having children at younger ages, having more children, physical activity, and diet, may help to explain associations between living in ethnic enclaves and breast cancer risk. Moreover, the physical environments in ethnic enclaves may help explain these associations.

Physical features common to ethnic enclaves may positively or negatively impact health. Researchers have illustrated that ethnic enclaves are not monolithically healthy or unhealthy places to live (Osypuk et al., 2009). Environmental justice research has shown that living in ethnic enclaves may expose immigrant minorities, including AANHPIs, to higher levels of environmental toxins (Gordon et al., 2010; Morey, 2014). These environmental toxins may increase risk of breast cancer. Ethnic enclaves also tend to be located in urban centers and have higher traffic density (Grineski, Collins, & Chakraborty, 2013; Morello-Frosch & Lopez, 2006). Traffic density may impact breast cancer by increasing exposure to traffic-related air pollution and by increasing stress levels (Hung et al., 2012; Hystad, Villeneuve, Goldberg, Crouse, & Johnson, 2015; Song, Gee, Fan, & Takeuchi, 2007; Steptoe & Feldman, 2001). On the other hand, greater traffic density has been associated with higher levels of walking in the neighborhood (Brownson, Baker, Housemann, Brennan, & Bacak, 2001; Van Cauwenberg et al., 2011), which may be protective against breast cancer. In addition to environmental toxins, ethnic enclaves may differ from non-ethnic neighborhoods in terms of the neighborhood built environment. The built environment consists of the structures and infrastructure built for human use (e.g. grocery stores, alcohol outlets, parks, etc.).

Certain aspects of the built environment may encourage or discourage breast cancer-related health behaviors. Several studies have examined associations between features of the built environment and health behaviors, though few have linked the built environment with breast cancer incidence. Understanding how the built environment affects health behaviors related to cancer may help in assessing how the built environment increases or decreases breast cancer risk. Prior research has examined the role of the neighborhood built environment on people's weight status (Morland, Diez Roux, & Wing, 2006; Nelson, Gordon-Larsen, Song, & Popkin, 2006; Van der Horst et al., 2007; Wang, Kim, Gonzalez, MacLeod, & Winkleby, 2007b). Being overweight and gaining weight in adulthood has been associated with greater risk of postmenopausal breast cancer (Cheraghi et al., 2012; Eliassen et al., 2006). Many of the same health behaviors related to overweight and obesity may also be related to breast cancer risk, such as physical activity and diet. Studies on neighborhood food availability—often defined as residential distance to or density of food stores, fast food outlets, and restaurants—and weight status have found mixed results (Black & Macinko, 2008; Ding & Gebel, 2012). Some studies reported a positive association between higher body mass index (BMI) and access to supermarkets, convenience stores, and fast food outlets (Inagami, Cohen, Finch, & Asch, 2006; Morland et al., 2006; Wang, Kim, Gonzalez, MacLeod, & Winkleby, 2007a), while others reported no association (Jeffery, Baxter, McGuire, & Linde, 2006; Mobley et al., 2006). The relationships between weight, physical activity and the built environment have also been studied, with inconclusive findings (Mackenbach et al., 2014). Increased physical activity levels and lower obesity rates seem to be most consistently associated with greater neighborhood walkability (Brown et al., 2013; Casagrande, Gittelsohn, Zonderman, Evans, & Gary-Webb, 2011; Van Dyck et al., 2010). Higher levels of physical activity may additionally be associated with more accessible recreational facilities and parks (Cohen et al., 2007; Gordon-Larsen, Nelson, Page, & Popkin, 2006; Mytton, Townsend, Rutter, & Foster, 2012; Sallis & Glanz, 2009). Finally, greater alcohol consumption, another risk factor for breast cancer, has been associated with closer residential proximity to alcohol outlets (Kavanagh et al., 2011; Scribner, Cohen, & Fisher, 2000).

The built environment features in ethnic enclaves have been shown to differ from those in non-ethnic enclaves, which may contribute to differences in health. People living in ethnic enclaves tend to report greater healthy food availability (Osypuk et al., 2009). On the other hand, ethnic enclaves tend to be located in more concentrated urban areas with fewer parks, fewer recreational facilities, worse traffic density, and worse walkability (Osypuk et al., 2009; Wen & Maloney, 2011). As described above, living in ethnic enclaves may be associated disparities in health, but more research is needed to determine the extent to which the built environment may explain some of these differences.

In sum, breast cancer risk may be affected by both social and physical aspects of the neighborhood environment. Neighborhood social stressors may amplify the association between individual-level stress and breast cancer risk. Whether or not an AANHPI woman lives in an ethnic enclave may additionally affect breast cancer risk. Social norms in ethnic enclaves may determine health behaviors that influence risk. In addition, physical environments in ethnic enclaves, including features of the built environment, may play a role in breast cancer risk and related health behaviors.

RESEARCH AIMS & HYPOTHESES

This dissertation contributes to our understanding of how individual- and neighborhood-level stressors impact breast cancer risk and related health behaviors by applying the Stress-

Exposure Disease Framework (Gee & Payne-Sturges, 2004). Figure 1.1 provides an overall conceptual framework for this dissertation.

====== Figure 1.1 about here ======

The study sample is from the Asian Community Health Initiative (CHI), a case control study exploring factors impacting breast cancer. The following aims and hypotheses are proposed:

Aim 1: Investigate how stress is related to breast cancer risk

Figure 1.2 provides a conceptual model for how individual- and neighborhood-level stressors are expected to impact breast cancer risk.

H1: Individual-level stressors are associated with increased breast cancer risk.

H2: Neighborhood-level stressors are related to increased breast cancer risk.

H3: Neighborhood-level stressors amplify the effect of individual-level stressors on breast cancer risk.

====== Figure 1.2 about here ======

Aim 2: Describe the geographic distribution of breast cancer cases and controls and determine whether living in an ethnic enclave is related to breast cancer and whether this relationship varies by nativity

Figure 1.3 provides a conceptual model for this aim.

H4: Breast cancer cases are less likely to live in a high ethnic enclave than their matched controls, after controlling for known neighborhood- and individual-level risk factors.

H5: The effect of living in a high ethnic enclave on likelihood of having breast cancer is greater for foreign-born women than for US-born women. That is, enclaves may *be protective for all AANHPI women, but particularly so for those who are foreign-born.*

====== Figure 1.3 about here ======

Aim 3: Identify features of the neighborhood built environment that are associated with breast cancer risk, and how this may potentially explain the effect of living in an ethnic enclave

Figure 1.4 provides a conceptual model for Aim 3.

H6: Breast cancer risk is associated with features of the built environment (and not merely residence in an enclave), beyond known individual and neighborhood risk factors. Features of the built environment include supermarkets, fast food restaurants, recreational facilities, liquor stores traffic density, and walkability.

H7: Features of the built environment explain some of the effects of living in an ethnic enclave on breast cancer risk.

====== Figure 1.4 about here ======

Addressing these aims, this dissertation provides greater insight into how novel individual and neighborhood factors contribute to breast cancer risk among AANHPIs living in the San Francisco Bay Area.

CHAPTER 2: DATA, VARIABLES, AND ANALYTIC STRATEGY

This chapter describes the data used to address the research aims, including descriptions of the variables used in analyses. Secondly, it provides an overview of the analytic strategy.

DATA: ASIAN COMMUNITY HEALTH INITIATIVE (CHI)

The data come from the Asian Community Health Initiative (CHI), a case-control study of 621 total AANHPI women living in the San Francisco Bay Area in California. This dataset is unique in its use of the Greater Bay Area Cancer Registry, a population-based Surveillance, Epidemiology, and End Results cancer registry, to identify eligible breast cancer cases to take part in the study. In addition, a variety of methods were used to identify ethnicity- and age-matched controls without breast cancer. This study design allows CHI to be among the very few population-based studies to examine breast cancer risk among AANHPI women. The goals of the study were to document novel and established breast cancer risk factors across the life course and to explore hypotheses regarding the impact of immigrant exposures on breast cancer risk. The study was funded through the California Breast Cancer Research Program and was conducted by the Cancer Prevention Institute of California. The principal investigator is Scarlett Lin Gomez, Ph.D., M.P.H.

Of the 621 women in the study, 139 were breast cancer cases and 482 were controls matched on ethnicity and age. The study was designed to match controls with cases using a three to one ratio.

<u>Recruitment of breast cancer cases</u>

Eligible cases were self-identified AANHPI women aged 20 years and older, who were diagnosed with breast cancer between January 1, 2005 and December 31, 2009, and who were residents of San Francisco, Alameda, San Mateo, Contra Costa, or Santa Clara counties. Cases were identified, recruited, and interviewed through the Equality in Breast Cancer Care study (EBCC), a breast cancer survivorship study funded through the Department of Defense Breast Cancer Research Program. Participants in the EBCC study were recruited and interviewed between 2010 and 2013. These participants were asked if they would be willing to participate in future research studies. Those who consented and who provided contact information were re-contacted for the CHI study.

Potential participants were contacted first by mail, then by telephone and email (if they provided this information) to confirm eligibility and interest in the CHI study. Eligible individuals were then asked if they would participate in a second telephone interview and a self-administered questionnaire. Recruitment for CHI cases ran from February 2013 to September 2014.

Recruitment of controls

CHI controls were recruited using five general strategies to target AANHPI women: community health centers, Army of Women, online-based methods, address-based sampling, and traditional community-based recruitment (each of sources are elaborated below). The rationale behind using various recruitment methods was to attempt to minimize selection biases, a problem that often arises for case-control studies (Fletcher, Fletcher, & Fletcher, 2012). For example, sampling only using community-based methods may result in the overrepresentation of low-income persons, while sampling using only online-based methods may result in the overrepresentation of high-income persons (Mezei & Kheifets, 2006; Rothman, Greenland, & Lash, 2008). Simultaneous use of multiple recruitment methods may temper overall bias in the control sample, since the competing biases balance each other out.

Sociodemographic characteristics of recruited controls were regularly monitored and compared to the target population using data from the California Health Interview Survey (CHIS). Key target population characteristics included nativity, ethnicity, income, education, and age. Recruitment of proportionally more foreign-born controls was necessary to achieve a control sample comparable to the target population. The control sample was ultimately similar to the target population in terms of demographics. A study assessing the representativeness of the CHI control group to the target population showed that, as expected, controls recruited by any single method were not representative, but the total control sample was largely representative of the source population (Wong et al., 2016a).

With the exception of the address-based sampling method (response rate = 1.6%), overall participation and response rates could not be calculated given that the sampling base was not defined. Recruitment of controls ran from March 2013 to October 2014. Table 2.1 provides a summary of the number of controls recruited via each sampling method.

====== Table 2.1 about here ======

The first recruitment method, *community health centers*, involved collaborations with Asian Health Services located in Alameda County and Asian Americans for Community Involvement located in Santa Clara County. Staff members at each community health center conducted the recruitment efforts. Recruitment at these sites involved contacting individuals to assess study eligibility, verbally describing the study, disseminating brochures about the study, and passing contact information of interested individuals to CHI staff members. This recruitment method yielded 97 control participants (58 from Asian Health Services; 39 from Asian Americans for Community Involvement).

The second recruitment method, *Army of Women*, is a volunteer-based registry of women, with and without breast cancer, who are interested in participating in breast cancer research (www.armyofwomen.org). Registered members receive emails announcing opportunities to participate in new research studies. Two email blasts were sent to members in April and August 2013. Interested members could respond by clicking a link to fill out a form to determine eligibility. This method recruited 63 participants.

The third, *online-based methods*, involved posting emails and advertisements using Craigslist, Facebook, Twitter, and listservs related to AANHPI interests. Monthly advertisements were placed on Craigslist between June 2013 and March 2014, yielding 81 control participants. A few posts were placed on Facebook and Twitter promoting the study. These posts and any other online recruitment efforts yielded 77 control participants.

The fourth general recruitment method, *address directory-based mailing*, involved accessing an address database through a licensed vendor. Researchers provided a list of AANHPI surnames to the vendor to generate a random sample of 3,000 residential addresses in the study area by matching the surnames based on the head of household listed in the US Postal Service Delivery Sequence File. A letter, flyer, and response form were mailed to each presumed AANHPI household in batches between April and November 2013. This recruitment method yielded a low response rate of less than 2% (49 recruited controls out of 3,000 households).

The final recruitment method was through traditional *community-based recruitment*, which involved disseminating study flyers at health fairs, senior centers, community events, and fundraisers. In addition, flyers were sent via email to Asian-serving listservs and community groups. The CHI study partnered with the Asian and Pacific Islander American Health Forum, a national policy organization, to disseminate information about the study to other community-based organizations and Asian media, including placing advertisements in Chinese and Filipino newspapers and radio stations. These methods produced in total 115 control participants.

Data collection and geocoding

Data for cases and controls were collected through telephone interviews and self-administered questionnaires, available in English, Chinese, and Tagalog. Written materials for Chinese and Tagalog were translated and independently back-translated. Control participants received a $30 check for completing the telephone interview. Those who participated in the second phase self-administered survey received an additional $15.

Individuals' responses were geocoded using participants' reported addresses. For cases, addresses were provided for their place of residence at the time of breast cancer diagnosis. For controls, addresses represented place of residence at the time of interview. Geocoding of all cases and controls was performed using the Texas A&M Geoservices Desktop Geocoding Client (Texas A&M Geoservices, 2013). Address cleaning was used for respondent addresses that did not automatically geocode. Of the 621 addresses, only 13 (1 case and 12 controls) could not be successfully geocoded.

Geocoded survey data were linked to neighborhood data by researchers at the Cancer Prevention Institute of California. Geospatial data included neighborhood socioeconomic, demographic, and built environment measures gathered from a variety of sources, including the US Census, the Center for Population Health and Health Disparities at RAND, and Dun and Bradstreet®. Neighborhood variables were constructed at the level of either the census tract or census block group.

VARIABLES

The following section describes the variables used in analyses. Summary descriptions of the main dependent and independent variables used in analyses may be found in Table 2.2.

====== Table 2.2 about here ======

Dependent Variables

The main outcomes of interest were **having breast cancer** and health behaviors related to breast cancer risk. Since CHI is a case control study, respondents were coded using a dichotomous variable of either having breast cancer or not (case or control). Breast cancer cases were diagnosed with breast cancer between January 1, 2005 and December 31, 2009. Controls were women who have not been diagnosed with any cancer except for non-melanoma skin cancer.

In addition to investigating breast cancer as an outcome, this dissertation examined breast cancer-related health behaviors among women without breast cancer (the control sample). These behaviors—moderate physical activity, strenuous physical activity, alcohol consumption, fruit consumption, and vegetable consumption—have been associated with breast cancer risk (Jung et al., 2013; Monninkhof et al., 2007; Park et al., 2014). Body mass index (BMI), another risk factor for breast cancer, was also examined as an outcome (Cheraghi et al., 2012).

The physical activity variables were operationalized as the reported hours per week respondents engaged in strenuous or moderate physical activity in the past 12 months. **Moderate physical activity** was self-reported based on questions about engaging in activities such as brisk walking, walking to school or work, shopping, running errands, golf, volleyball, riding a bike on level streets, recreational tennis, or softball. **Strenuous physical activity** was based on questions about engaging in activities such as vacuuming, washing windows, heavy lifting, farm work, mowing the lawn, swimming laps, aerobics, running, basketball, riding a bike on hills, or racquetball. These measures of physical activity were the same used in the California Teachers Study, a prospective cohort study examining breast cancer risk among female teachers intially recruited in 1995. The California Teachers Study adapted the measures of moderate and strenuous physical activity from the Modifiable Activity Questionnaire, which was designed to be easily modified for use with diverse populations (Kriska, 1997). The Modifiable Activity Questionnaire has been shown to have good reliability ($\rho=0.92$) and validity ($\rho=0.56$, $p<0.05$) (Kriska et al., 1990; Schulz, Harper, Smith, Kriska, & Ravussin, 1994). Strenuous physical activity was not normally distributed in the sample, so a square-root transformation of the variable was used in analyses.

The measure of **alcohol consumption** was based on respondents' reports of whether they consumed any alcohol in the past 12 months. Of those that responded "Yes," participants were asked how often and how much alcohol was consumed on average for the following types of alcohol: beer, red wine, white wine, and liquor. These questions were used to construct a variable of the average number of drinks per week in the past 12 months.

Fruit consumption was measured with a single question asking how often respondents usually ate fruit in the past 12 months. **Vegetable consumption** was measured with a question asking how often respondents usually ate vegetables (excluding potatoes and light green lettuce) in the past 12 months. Responses included "never/rarely," "1 to 3 times month," "1-3 times per week," "4 to 6 times per week," "once per day," and "twice or more per day." Variables were created to reflect the average number of times fruit or vegetables were consumed per week, on average over the past 12 months. The measures of fruit and vegetable consumption were items that were part of a larger dietary acculturation scale in the Asian CHI. This scale was adapted in order to measure dietary acculturation among a diverse AANHPI sample (Johnson-Kizlow et al., 2011; Lee, Sobal, & Frongillo, 1999; Satia et al., 2001).

Body mass index (BMI) was calculated using self-reported height and weight by dividing weight in kilograms by height squared in meters. It is largely recognized that self-reported BMI is biased, since overweight people tend to underreport and underweight people tend to over-report weight (Keith, Fontaine, Pajewski, Mehta, & Allison, 2011). Although subject to bias, self-reported BMI among adults has been shown to be an efficient way of obtaining these data (Basterra-Gortari, Bes-Rastrollo, Forga, Martínez, & Martinez-Gonzalez; Gorber, Tremblay, Moher, & Gorber, 2007).

Smoking cigarettes was considered as a dependent variable. However, so few women in the sample smoke that it was not possible to conduct any analyses on this variable. Furthermore, findings on the associations between cigarette smoking and breast cancer risk have been mixed, although smoking is a confirmed risk factor for many other types of cancer (Gaudet et al., 2013).

Independent Variables

Each of the three Dissertation Aims focuses on different independent variables that may be associated with breast cancer risk. The first aim examines individual and neighborhood stressors on breast cancer and breast cancer-related health behaviors. The second aim focuses on the association between living in an ethnic enclave and the same outcomes. The third aim looks at the role of features of the built environment on the same outcomes.

Aim 1 Focal Independent Variables: Aim 1 tested four individual stressors—general stress, lifetime discrimination, day-to-day discrimination, and acculturative stress—and three neighborhood stressors—perceived safety, neighborhood problems, and (lack of) collective efficacy.

General stress was conceptualized as average perceived stress over the past year, measured using an adapted version of Cohen's Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983; Cohen & Williamson, 1988). The Perceived Stress Scale is a ten-item psychological instrument used to measure the degree to which situations in one's life are appraised as stressful in the last month (Cronbach's alpha=0.85). This scale was adapted to appraise stress over the past 12 months. Items included, "During the past 12 months, how often have you been upset because of something that happened unexpectedly?" and, "During the past 12 months, how often have you felt that things were going your way?" All item responses were recorded on a 5-point Likert scale (Never, Almost Never, Sometimes, Fairly Often, and Very often). Positively stated items were reverse-coded, and then items were averaged to create a mean perceived stress score, with a potential range of 1 to 5. Higher scores indicate higher level of general stress.

Lifetime discrimination was operationalized as experiences of unfair treatment over the lifetime. This measure of discrimination, adapted from a tool developed by Shariff-Marco et al. (2009) asked respondents to report over their lifetime how often they experienced unfair treatment in eight situations, including at school, when getting a job, and when accessing medical care. These unfair situations were adapted for racially/ethnically diverse breast cancer patients using qualitative research from the EBCC study (Quach et al., 2012). Responses used a four-point Likert scale (Never, Rarely, Sometimes, or Often). In this study, respondents were coded as having ever or never experienced each of the unfair situations. A respondent's lifetime discrimination score is the sum of the number of situations ever experienced, with a potential range of 0 to 8. Higher scores indicate more experience of lifetime discrimination.

Day-to-day discrimination was operationalized as unfair treatment experienced in a person's everyday life over the past year. Respondents were asked to think about their everyday life, then report how often over the past 12 months they experienced nine possible discriminatory events. This measure of discrimination, originally developed by Williams, Yan Yu, Jackson, and Anderson (1997) and described by Shariff-Marco et al. (2009) included items such as "have you been treated with less respect than other people," "have you received poorer service than other people at restaurants or stores," and "have people acted as if they are afraid of you?" Responses used a four-point Likert scale (Never=0, Rarely=1, Sometimes=2, or Often=3). In this study, day-to-day discrimination was measured as the mean of the Likert responses for the nine possible events, with a potential range of 0 to 3. Higher scores indicated experiencing more day-to-day discrimination.

Acculturative stress was defined as perceived stress attributed to living in the US as an immigrant. It was measured using an adapted version of the Noh Acculturative Stress Index, which included items that asked whether the respondent feels that living in the US is stressful because you "lack of opportunity to visit your country of origin," "because you are treated as an outsider by other Americans," and "because you are disappointed that your standard of living is not what you had hoped for when you first came to the US" (Noh & Avison, 1996). The original Noh Acculturative Stress Index included 14 such items. Factor analysis revealed that two of the items were not as correlated with the latent variable of acculturative stress, with factor loadings below 0.4. These two questions asked whether living in the US is stressful "because you worry about losing ties to your parents' culture" and "because you feel you are obligated to take care of your parents in their old age." These two questions could be interpreted as more related to relationships with parents than with stress due to acculturation. The two items were dropped, resulting in an index that included 12 items. Responses to each question used a four-point Likert scale for how often these feelings are experienced (Never=1, Sometimes=2, Often=3, or Very Often=4). The acculturative stress score is the mean of the Likert responses to the 12 items, with a potential range of 1 to 4. Higher scores indicate greater acculturative stress. Acculturative stress questions were only asked of foreign born women.

Perceived safety was measured using a single item: “How often do you feel safe in your current neighborhood?” Response choices are “None of the time,” “Some of the time,” “Most of the time,” or “All of the time,” coded as a four-point Likert scale, with a range of 1 to 4. Higher scores indicate greater perceived safety.

Neighborhood problems were measured by asking respondents whether the following 5 issues are problems in their neighborhood: neighborhood crime, traffic, excessive noise, trash/litter, and lighting at night. Possible responses were a four-point Likert scale, “Not really a problem,” “Minor problem,” “Somewhat serious problem,” or “Very serious problem.” Responses to each problem were coded on a scale of 0 (Not a problem) to 3 (Very serious problem) and then summed across the five items, with a potential range of 0 to 15. Higher scores indicate more severe neighborhood problems.

Collective efficacy was defined as a form of social organization that is based on trust among neighbors and willingness to intervene on behalf of the common good of the community (Sampson et al., 1997). It was measured using a five-item scale that included, “How often do neighbors watch out for each other, such as calling if they see a problem?” and “How many neighbors do you know by name?” Responses used a four-point Likert scale of either “Never, Rarely, Sometimes, or Often” or “None, Few, Some, or A lot,” depending on the item. These items were coded from 0 (“Never”/“None”) to 3 (“Often”/“A lot”). The measure of collective efficacy was the mean of the five items, with a potential range of 0 to 3. Higher scores indicate greater collective efficacy.

Aim 2 Focal Independent Variable: Aim 2 examined how living in an ethnic enclave is associated with breast cancer risk.

Living in an API **ethnic enclave** was operationalized using the API ethnic enclave index, created by researchers at the Cancer Prevention Institute of California using principle components analysis (Gomez et al., 2011). The first step in creating this index was to examine the correlations between census variables at the tract and block group levels that have traditionally been associated with acculturation (e.g. race/ethnicity, language, nativity, etc.). The next step involved creating an aggregate variable for neighborhood acculturation by analyzing patterns of covariance between these variables. Principle components analysis was used to select the acculturation-related component, or group of census variables, that captured the most variance. For APIs, the first principle component included four census variables measured at the census tract and block group levels: 1) percent API, 2) percent recent immigrant (defined as having immigrated in the past 5 years), 3) percent households that are API language-speaking and linguistically isolated, and 4) percent of residents who are API language-speaking with limited English proficiency. The distribution of these variables within block groups and census tracts across the state of California was assessed. Based on the distribution of these 4 variables across the state, the ethnic enclave index was created using a scale of 1 to 5, with 1 representing the least ethnic (or most acculturated) and 5 representing the most ethnic (or least acculturated) block groups. A higher API ethnic enclave index score represents higher percent of APIs, percent recent immigrants, percent API language-speaking and linguistically isolated households, and percent of API language-speaking residents with limited English proficiency. A lower API ethnic enclave index score represents lower values for those four items. The composite API ethnic enclave index explained 63% of the variability of the four individual variables across California.

This study used the API ethnic enclave index that was created two ways: 1) using 2000 US Census data for all block groups in California, and 2) using 2010 US Census data for all census tracts in California (Keegan, John, et al., 2010; Keegan, Quach, et al., 2010). Ideally, analyses would have included the ethnic enclave measure at the 2010 US Census block group level, which represents a smaller geographic area that is more likely to capture AANHPI's neighborhood ethnic environment (Morey, 2014). Unfortunately, the 2010 US Census no longer included the "long form" questionnaire, and the American Community Survey does not capture enough households to make reliable estimates for percent linguistically isolated and limited English proficiency at the block group level. Geographic information systems mapping analyses included both ways of measuring the API ethnic enclave index. Regression analyses used only the 2000 Census block group measure, to be consistent with prior literature using this measure (Gomez, Clarke, et al., 2010; Keegan, John, et al., 2010; Keegan, Quach, et al., 2010).

Figure 2.1 provides a histogram of the distribution of the ethnic enclave index in the Asian CHI sample. In this study, since the vast majority of respondents (72.9%) lived in the most ethnic neighborhoods (ethnic enclave index = 5), and few respondents lived in the least ethnic neighborhoods (0.3% ethnic enclave index = 1, 4.3% ethnic enclave index = 2, 6.6% ethnic enclave index = 3, and 16.0% ethnic enclave index = 4), this index was dichotomized into high (API ethnic enclave index = 5) and low (API ethnic enclave index < 5) ethnic enclaves.

====== Figure 2.1 about here ======

Aim 3: Focal Independent Variables: Aim 3 studied the association between features of the neighborhood built environment and breast cancer risk. Here, the built environment refers to the structures and infrastructure built for human use that may positively or negatively impact health and health behaviors. The features of the built environment that were studied are the restaurant environment, retail food environment, number of parks, number of recreational facilities, number of liquor stores, traffic density, and walkability.

Researchers at the Cancer Prevention Institute of California created built environment variables using business listings from Walls & Associates' National Establishment Time-Series Database (which utilizes data from Dun and Bradstreet®), farmers markets listings from the California Department of Food and Agriculture, and park listings and traffic information from NavTeq's NavStreets database (Irwin et al., 2006; *National Establishment Time-Series (NETS) Database 2009 ed.*, 2008; *NAVSTREETS Street Data Reference Manual v3.7*, 2010). Residential addresses were used to create 1,600-meter linear distances around each respondent's home. This distance was chosen to represent the residential area that people are likely to interact with around their homes by walking. Data show that the length of most personal trips taken by walking in the US is 1 mile (approximately 1,600 meters) or less. In several studies, this distance is thought to best capture people's relationship to their neighborhood built environment that is accessible via walking (Duncan, Aldstadt, Whalen, Melly, & Gortmaker, 2011; Hirsch et al., 2014; Norman et al., 2006). Within this circular buffer, the network distance (i.e. distance calculated using streets) between the residence and neighborhood feature was calculated. Any facility within a 1,600-meter network distance of the residence was considered "within" the respondent's neighborhood per prior literature (Keegan et al., 2014; Thornton, JR, & Kavanagh, 2011).

The **restaurant environment** was defined as the proportion of unhealthy restaurants, or fast food restaurants, compared to other types of restaurants in a person's neighborhood. This was operationalized using the Restaurant Environment Index (REI), which is the ratio of the average annual number of fast food restaurants to the average number of other restaurants and other food stores between 2006 and 2008 within the 1,600-meter network distance of a person's address. Types of restaurants were identified using Standard Industrial Classification (SIC) codes that are used by the US government to classify business establishments. A higher restaurant environment index indicates a less healthy restaurant environment. The distribution for the REI in the sample was skewed to the right. Therefore, this variable was transformed by taking the square root of the REI.

The **retail food environment** was conceptualized as the proportion of "unhealthy" food outlets (i.e. convenience stores, fast foods, and liquor stores) compared to "healthy" food outlets (i.e. supermarkets and farmers markets). I chose the Retail Food Environment Index 3 (RFEI3) created by the researchers at the Cancer Prevention Institute of California to operationalize the retail food environment. The RFEI3 is the ratio of the average annual number of convenience stores and fast food restaurants to the average annual number of supermarkets and farmers markets between 2006 and 2008 within a 1,600-meter network distance of a person's address. A higher RFEI3 indicates a less healthy retail food environment. This food index has been used in prior work examining neighborhood influences on recreational physical activity for women with breast cancer (Keegan et al., 2014). In this sample, the distribution of the RFEI3 was skewed to the right. Therefore, this variable was transformed by taking the square root of the RFEI3.

It is important to note that for both the REI and the RFEI3, there are two possible meanings if the REI or RFEI3 are zero. For the REI, a score of zero may mean that there are no fast food restaurants, only other types of restaurants and food outlets. However, a score of zero may also mean that there are no restaurants or food outlets at all in the neighborhood. Similarly, a RFEI3 score of zero may indicate that there are no convenience stores and fast food restaurants, only supermarkets and farmers markets. Alternatively, a RFEI3 score of zero may also mean that there are no supermarkets or farmers markets. This is a distinction between having a zero value in the numerator or denominator of the ratio. In order to distinguish between having a zero in the numerator versus in the denominator, REI and RFEI3 were treated as *conditional variables*.

The creation of conditional variables is described in greater detail elsewhere (Cohen, 1968; Noh, Beiser, Kaspar, Hou, & Rummens, 1999; Ross & Mirowsky, 1992). Briefly, a dichotomous variable representing the “condition” of whether or not the denominator is zero is created. This conditional variable is then created by multiplying the dichotomous variable by the continuous variable of interest, which is centered at the mean. In the current study, REI is a variable conditional on having any restaurants or food outlets and RFEI3 is a variable conditional on having any supermarket or farmers markets. Therefore, REI and RFEI3 were always included with a dichotomous variable representing the condition of having any restaurant/food outlet or any supermarket/farmers market. This allowed for the inclusion of people in the sample who lived in neighborhoods without restaurants, food outlets, supermarkets, and farmers markets. For example, the following simplified equation represents the regression models that use the REI variable:

$$Y = b_0 + b_1(ANYFOOD) + b_2(REI - \overline{REI})(ANYFOOD) + \cdots + b_pX_p$$

In this equation, *ANYFOOD* represents the dichotomous variable, where *ANYFOOD* equals 0 when there are no restaurants or food outlets in the neighborhood, and *ANYFOOD* equals 1 when there are 1 or more restaurants or food outlets in the neighborhood. *REI* is the Restaurant Environment Index, which was centered at the mean by subtracting the mean value of REI in the sample (0.266) from each participant's REI score. As can be seen in this equation, when there are no restaurants or food outlets in the neighborhood, *ANYFOOD* equals 0, dropping the associated coefficients, so that the equation becomes:

$$Y = b_0 + \cdots + b_p X_p$$

Stated simply, the outcome Y is estimated by REI only when there are one or more restaurants or food outlets in the neighborhood. When there are no restaurants or food outlets, Y is then estimated using the other covariates. Without this conditional variable, respondents living in neighborhoods with no restaurants or food outlets would have been excluded from analyses due to missing REI values. The same equation is used with RFEI3, but the dichotomous variable is replaced by a variable representing whether or not there are any supermarkets or farmers markets in the neighborhood.

Recreational facilities were a count of the facilities where physical activities can take place within a 1,600-meter network distance of a respondent's address (Keegan et al., 2014). Recreational facilities were identified using SIC codes that include places such as gymnasiums, dance studios, sporting and recreational campgrounds, gardens, bowling alleys, and other similar facilities. This variable was transformed due to skewedness by taking the square-root.

The **number of parks** was a count of the parks identified in NavTeq's NavStreets 2010 dataset that were within a 1,600-meter network distance of a respondent's address (*NAVSTREETS Street Data Reference Manual v3.7*, 2010). This variable was transformed due to skewedness by taking the square-root.

The **number of liquor stores** was the count of registered establishments that sell packaged alcoholic beverages, such as ale, beer, wine, and liquor, for consumption off the premises, within a 1,600-meter network distance of a respondent's address. These were identified using SIC codes provided by Walls & Associates' National Establishment Time-Series Database. This variable was transformed due to skewedness by taking the square-root.

Traffic density was operationalized as the average vehicle kilometers travelled on the streets within the 1,600-meter network distance around participants' homes. Data came from NavTeq's NavStreets database (*NAVSTREETS Street Data Reference Manual v3.7*, 2010). This variable was transformed due to skewedness by taking the square-root.

In this study, **walkability** was defined as how conducive the street design of a neighborhood is to encourage walking. In theory, the neighborhoods with more connected streets with greater number of intersections encourage more walking than neighborhoods with disconnected streets and long blocks with few intersections (Hoedl, Titze, & Oja, 2010; Marshall, Brauer, & Frank, 2009). Walkability was operationalized using two measures of street connectivity: the alpha index and gamma index (Dill, 2004; Maghelal & Capp, 2011). Both indices are calculated based on links and nodes within networks of streets. Nodes are intersections or the end of a cul-de-sac. Links are the roadway or pathway segments between two nodes. The alpha index is defined as the ratio of the number of actual roadway circuits to the maximum possible number of circuits, and is calculated using the following equation:

$$Alpha\ index = \frac{\#links - \#nodes + 1}{2(\#nodes) - 5}$$

The alpha index ranges from 0 to 1, with higher values representing greater street connectivity, or greater walkability. The gamma index is the ratio of the number of links in a network to the maximum possible number of links between nodes, with the maximum possible number of links being expressed as:

$$Maximum\ number\ of\ links = 3\ x\ (\#nodes - 2)$$

The gamma index can be interpreted as the percentage of street connectivity. For example, a gamma index of 0.48 means that the network is 48% connected. Gamma values also range from 0 to 1, with higher values representing greater street connectivity, and greater walkability. In contrast to the other built environment measures above, the alpha and gamma indices are estimated at the level of the 2010 block group that respondents live in, instead of the 1,600-meter network distance from a respondent's home. Figure 2.2 provides a visual representation of the calculation of the alpha and gamma indices.

====== Figure 2.2 about here ======

Control Variables

Models controlled for age, marital status, Asian ethnicity, survey language, nativity status, education, employment, and insurance status. For controls without breast cancer, **age** was calculated from the date of interview, and for cases with breast cancer, age was calculated from the date of diagnosis. **Marital status** was determined using three categories: married/cohabitating, formerly married, and single. **Asian ethnicity** was a split into the three largest categories: Chinese, Filipina, and other AANHPI. The sample was not large enough to include other AANHPI subgroups as separate categories. **Language of interview** could be English, Chinese (Mandarin or Cantonese), or Tagalog. **Nativity status** was based on respondents being foreign-born or US-born. The sample was highly educated; three categories of **education** were used: high school graduates or less education, some college education, and college graduates. The **employment** variable used three categories: full time employment, part time employment, or not working. **Insurance status** was determined using a dichotomous variable—people with private insurance versus everyone else—since most people had private insurance. People without private insurance either had a form of public insurance or were not insured.

Models with neighborhood-level independent variables also contained neighborhood control variables. These included neighborhood socioeconomic status (SES), urbanicity, and length of time lived in current residence.

Neighborhood SES was measured at the block group-level using the Yang Index, a composite measure based on seven components taken from the 2007 to 2011 American Community Survey (education index, median household income, percent living 200% below poverty level, percent blue-collar workers, percent older than 16 in the workforce without a job, median rent, and median house value). The Yang Index included the same components as the Yost Index, a widely-used composite SES index, which in prior studies has been shown to be associated with breast cancer incidence (Yost, Perkins, Cohen, Morris, & Wright, 2001). The Yang Index was determined by creating quintiles of neighborhood SES based on the California statewide distribution of the components, with 1 indicating the lowest and 5 indicating the highest neighborhood SES. In this Greater San Francisco Area sample, 40.8% of respondents lived in the highest SES neighborhoods (Yang Index=5), while 26.5% lived in the second highest SES neighborhoods (Yang Index = 4). Far fewer respondents lived in neighborhoods with lower SES, with only 5.3% living in neighborhoods where the Yang Index = 1.Therefore, this index was dichotomized into high (Yang Index = 4 or 5) and low (Yang Index = 1, 2, or 3) neighborhood SES. A histogram for the distribution of the Yang Index in the Asian CHI sample can be found in Figure 2.3

====== Figure 2.3 about here ======

Neighborhood **urbanicity** is the degree to which the 2010 block group is urban. This was measured using the categories defined by the 2010 Census. The Census categories for urbanicity were based on population size and population density, and include metropolitan urban, metropolitan suburban, town, and rural block groups. Metropolitan urban block groups are those that are located in urbanized areas with populations greater than 1,000,000 and that have population density in the top quartile compared to other metropolitan block groups in the urbanized area. The rest of the metropolitan block groups with lower population density were considered metropolitan suburban. Towns are block groups located in non-metropolitan areas with populations less than 1,000,000. Those blocks groups with the lowest quartile of population density in non-metropolitan areas were considered rural. Few people in the CHI sample lived in rural areas, so non-metropolitan towns and rural areas were combined into one category.

Length of time lived in current residence was included in some models as a control variable because those who lived longer in the residence are conceivably more cumulatively exposed to their neighborhood environments than those who have only lived in their current residence for a short time. This was determined using a question that asked, “In what year did you first move to your current address?” and subtracting from the year of interview (for controls) or year of cancer diagnosis (for cases).

When having breast cancer was the dependent variable, models also included variables associated with breast cancer risk that may confound the relationship between the focal independent variables and breast cancer. These control variables were number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, menopausal status and hormone therapy use, and family history of breast cancer.

Number of pregnancies was measured using a single question: "How many pregnancies have you had that lasted at least 7 months?" Women with more pregnancies have lower risk of breast cancer (Key, Verkasalo, & Banks, 2001). In addition, having children at younger ages is protective against breast cancer (Key et al., 2001). **Age at first birth** was measured using the question, "How old were you when your first child was born?" This question was only asked of people who had at least one pregnancy. In order to include this variable without dropping women who had never had a given birth, age at first birth was included as a variable conditional on having ever had a pregnancy lasting at least 7 months. As mentioned previously, the creation of conditional variables is described in greater detail elsewhere (Cohen, 1968; Noh et al., 1999; Ross & Mirowsky, 1992). Briefly, the variable for age at first birth was treated as an interaction between age at first birth and a dichotomous variable indicating if respondents had ever been pregnant. **Number of months breastfed** was determined by first asking, "Have you breastfed any of your children?" and then asking respondents who answered in the affirmative to add together the number of months they breastfed their children in total. Women who had never breastfed were coded as having breastfed zero months. Breastfeeding more over the lifetime is associated with lower breast cancer risk (Kotsopoulos et al., 2012; Möller et al., 2002).

Age at first menstrual period was determined by a single question. Starting to menstruate at younger ages exposes women to hormones such as estrogen for longer periods of time, increasing breast cancer risk (Kelsey et al., 1993). **Menopausal status and hormone therapy use** was a single variable determined by first asking women about their menstrual status. Next, women were asked if they ever used menopausal hormone therapy. Women could be in one of three categories: premenopausal, postmenopausal with no hormone therapy use, or postmenopausal and used hormone therapy. Premenopausal women have different breast cancer risk than postmenopausal women. For postmenopausal women, having used menopausal hormone therapy increases risk of breast cancer (Schairer et al., 2000).

Having **family history of breast cancer** was a dichotomous variable that distinguished between women that have any or no immediate family members with breast cancer. Immediate family with breast cancer included only biological mother, sisters, and/or daughters.

ANALYTIC STRATEGY

Stata v.14 was used to run all statistical analyses (StataCorp, 2015). The dependent variables for all three aims of the dissertation were the same: having breast cancer and breast cancer risk behaviors.

The first step was to describe the sample. Bivariate analyses were conducted using t-tests, chi-square tests, and correlation matrices, in order to assess general patterns among the variables used in this study. Descriptive statistics were provided for the total case control sample. In addition, descriptive statistics were stratified by breast cancer status. T-tests and chi-squared tests were used to determine differences between breast cancer cases and controls without breast cancer on the variables used in analyses. Pairwise correlations were calculated for all of the continuous and dichotomous variables. Pearson correlation coefficients were calculated to assess associations between pairs of continuous variables and pairs of dichotomous variables. Point biserial correlations were calculated to assess associations between continuous and dichotomous variables. Correlation matrices are presented for the entire case control sample and separately for the control only sample.

The analysis continued by using regression models. Multivariable logistic regression was used when the outcome of interest was having breast cancer, since this variable is dichotomous (i.e. either being diagnosed with breast cancer or not). Ordinary least squares linear multiple regression was used when the outcomes of interest were breast cancer risk behaviors, including strenuous physical activity, moderate physical activity, fruit consumption, vegetable consumption, and BMI, since the measures are ratio variables. The one exception is when the outcome is alcohol consumption; negative binomial regression was used since this count variable is over-dispersed, with the conditional variance exceeding the conditional mean (UCLA: Statistical Consulting Group, 2016).

When examining breast cancer status as an outcome, the sample included all breast cancer cases and controls (N=621). When examining breast cancer risk behaviors as outcomes, the sample included only breast cancer controls (N=482) because the focus of these analyses was breast cancer risk among women without a cancer diagnosis. The target population for the breast cancer risk behavior analyses was all AANHPI women living in the San Francisco Bay Area who are at risk for getting breast cancer, and the CHI control sample is meant to be representative of this population.

Some of the regression models included variables that were conceptualized at the neighborhood-level, for instance, ethnic enclaves, urbanicity, and neighborhood SES. Multilevel modeling was not used in this dissertation due to the small sample size that caused the average number of respondents per census block group to be low—five at most. Most census block groups in the sample only contained one respondent. Although multilevel modeling was inappropriate with these data, models that contained neighborhood-level variables used standard errors that were clustered by 2010 Census block group, in order to account for the potential correlation of errors for observations within the same neighborhood. In STATA, this adjustment was made using the **`vce(cluster`** *`clustvar`***`)`** option.

Aim 1 examined the relationships between various stressors and breast cancer risk. Hypothesis 1 explored associations between individual-level stressors and breast cancer risk (having breast cancer and breast cancer related behaviors), controlling for known individual risk factors. Hypothesis 2 examined the association between neighborhood stressors and breast cancer risk, controlling for individual- and neighborhood-level variables. Hypothesis 2 also adjusted the standard errors for clustering at the block group level. The following equation was used for Hypotheses 1 and 2:

$$\text{H1:} \qquad Y = a + b_1(STRESS) + \cdots + b_p X_p$$

In this equation and all following, *Y* represents breast cancer risk. For ordinary least squares regression models, *Y* represents breast cancer related behaviors. For logistic models where the dependent variable was having breast cancer or not, *Y* was replaced by (ln $\left[\frac{\hat{p}}{1-\hat{p}}\right]$), where $\hat{p}$ represents the expected probability of having breast cancer (i.e. being a case vs. control). Here, *STRESS* represented either individual or neighborhood stress, and X_p represented the independent control variables. The regression coefficient (b_1) indicated the change in the outcome given a one-unit change in stress, controlling for all other independent variables.

Aim 1, Hypothesis 3 tested the interaction between individual and neighborhood stressors using an interaction model, represented using the following equation:

$$\text{H3:} \qquad Y = a + b_1(INSTRESS) + b_2(NHSTRESS) + b_3(INSTRESS)(NHSTRESS) + \cdots + b_p X_p$$

In this equation, *INSTRESS* represented individual stress, *NHSTRESS* represented neighborhood stress, and *X's* represented individual and neighborhood control variables. Higher neighborhood stress was expected to amplify the effect of individual stress on breast cancer risk, such that living in a more stressful neighborhood increases the positive effect of individual stress on increased breast cancer risk. This equation adjusted standard errors for clustering at the block group level.

Aim 2 examined the effect of living in an ethnic enclave on breast cancer risk. The geographic distribution for cases and controls was examined using ArcGIS v.10.3 software. In an exploratory manner, geographic distribution of cases and controls was assessed for potential clustering in certain geographic areas.

Hypothesis 4 examined the impact of living in an ethnic enclave on breast cancer risk, after controlling for known individual- and neighborhood-level risk factors using the following equation:

$$\text{H4:} \quad Y = a + b_1(ETHENCL) + \cdots + b_p X_p$$

In this equation, *ETHENCL* represented the census block group measure of ethnic enclave, and *X* represented individual and neighborhood control variables. This equation adjusted standard errors for clustering at the block group level.

Hypothesis 5 added nativity status to the model using the following interaction model:

$$\text{H5:} \quad Y = a + b_1(ETHENCL) + b_2(NATIV) + b_3(ETHENCL)(NATIV) + \cdots + b_p X_p$$

In this equation, *NATIV* represented nativity status, which was a dichotomous variable of being either foreign-born or US-born. In this model, people who were foreign-born were expected to have overall lower breast cancer risk than those who were US-born. In addition, people who were foreign born were expected to be more affected by living in an ethnic enclave, such that effect of living in a low enclave versus a high enclave on breast cancer risk was greater for foreign-born women than for US-born women.

Aim 3 explored how built environmental features were associated breast cancer risk, after controlling for known individual- and neighborhood-level risk factors. The built environment features included the restaurant environment, retail food environment, number of parks, number of recreational facilities, traffic density, and walkability.

Hypothesis 6 tested the association between built environment features and breast cancer risk. This hypothesis used equations similar to Hypotheses 1 and 4. Hypothesis 7 added living in an ethnic enclave to the previous model. This hypothesis was intended to examine whether built environment features mediate the relationship between ethnic enclaves and breast cancer risk. In order to evaluate mediation when breast cancer status was the outcome, the decomposed effects of living in an ethnic enclave on breast cancer risk were calculated using the Kohler , Holm, and Breen (**`khb`**) method in STATA (Kohler, Karlson, & Holm, 2011). The decomposed effects consisted of: 1) the total effect of living in an ethnic enclave on breast cancer risk, 2) the direct effect (i.e unmediated effect) of living in an ethnic enclave on breast cancer risk that is not explained by features of the built environment, and 3) the indirect effect (i.e. mediated effect) of living in a high ethnic enclave on breast cancer risk, mediated through the features of the built environment. When alcohol consumption was the outcome, negative binomial regression was used. In order to assess mediation, the **`paramed`** command was used in STATA to calculate the decomposed effects. When all other health behaviors were the outcomes, mediation was assessed using the Sobel test (Baron & Kenny, 1986). The built environment variables were added to models predicting health behaviors using the ethnic enclave variable and covariates. If the coefficients for the built environment variables were statistically significant, and if the coefficient for the ethnic enclave variable decreased in the full model when compared to the model without the mediator, then this was an indicator of possible mediation. A Sobel test was then used to determine whether the mediated effect was significant.

The regression results are presented in tables. The results for the logistic regression analyses are presented using single models that include all of the relevant covariates at once. The logistic regression results were not presented as a series of nested models within tables because coefficients cannot be compared across logistic regression models when variables are added (Aneshensel, 2013). For ordinary least square regression analyses, covariates were added in a series of nested models in order to test whether their addition affected the association between the focal independent and dependent variables. In most of these tables, the first models presented the bivariate associations between the independent and dependent variables of interest. The next models included individual demographic characteristics and individual socioeconomic characteristics. If the focal independent variable was a neighborhood measurement, the full models included neighborhood covariates. Structuring the models this way allowed the analyses to determine whether the main associations were spurious due to the inclusion of demographic characteristics, socioeconomic characteristics, or neighborhood-level factors.

CHAPTER 3: SAMPLE DESCRIPTION

SAMPLE DESCRIPTION

The Asian CHI study sample contains a total of 621 AANHPI female residents of the San Francisco Bay Area. This total sample includes 139 breast cancer cases and 482 age- and ethnicity-matched controls without cancer. Descriptive statistics for the total sample and stratified by breast cancer status can be found in Table 3.1.

====== Table 3.1 about here ======

In this dissertation, breast cancer related health behaviors were only analyzed for the control sample in order to determine breast cancer risk among women without diagnosed breast cancer, but who are at risk for developing breast cancer. The controls sample is meant to represent all AANHPI women living in the San Francisco Bay Area who are at risk for developing breast cancer. Among controls only, women reported on average engaging in 3.66 hours per week of strenuous and 5.13 hours per week of moderate physical activity. In this sample, alcohol use was quite low, with women drinking an average of 1.16 drinks per week. In fact, over half of women (63%) reporting drinking alcohol never or very rarely over the past year. This is not particularly surprising, since Asian women in California generally report drinking less than the overall population (UCLA Center for Health Policy Research, AskCHIS 2003). Women reported consuming fruits and vegetables an average of 8.07 and 8.53 times per week, respectively.

Average body mass index (BMI) for the entire sample was about 23.99 kg/m^2, with cases and controls not differing significantly. This falls in the normal range for BMI according to the World Health Organization standards, which determines normal BMI to fall between 18.5 and 24.99, overweight to be 25 to 29.99, and obese to be 30 and over (World Health Organization, 1998). However, some studies have shown that Asians in general may have higher body fat percentage and disease risk at lower BMIs, starting at 23 kg/m^2 and over (World Health Organization Expert Consultation, 2004). Therefore, the majority of this sample may be at increased health risk.

Tobacco use in the sample was very low, with only eight controls and one case reporting being current smokers. Therefore, tobacco use was not used as a variable in any of the analyses.

Breast cancer cases and controls did not significantly differ in terms of measures of individual and neighborhood stress. General stress in the total sample was roughly normally distributed, with a mean of 2.67 on a stress scale ranging from 1 to 5. Women reported experiencing an average of 3.05 discriminatory events in their lifetimes, although this varied from as low as 0 events to as high as 8 events. Women experienced moderately low levels of day-to-day discrimination, with a mean of 0.48 on a scale ranging from 0 to 3. Acculturative stress was asked only of foreign-born respondents. The average acculturative stress score was 1.5 on a scale ranging from 1 to 4. On average, respondents reported fairly high levels of perceived neighborhood safety (mean=3.24 on a scale of 1 to 4) and low levels of perceived neighborhood problems (mean=2.16 on a scale of 0 to 15). The mean level of collective efficacy was 1.5 on a scale of 0 to 3.

The majority of women in the sample (72.9%) lived in the highest quintile for the ethnic enclave index. In fact, only two women in the entire sample lived in the lowest quintile for the ethnic enclave index. It is not particularly surprising that the majority of the API women living in the San Francisco Bay Area live in neighborhoods with high percentages of other APIs, immigrants, API language speaking households, and limited English proficiency residents. Cases and controls still did not significantly differ in this respect.

The neighborhoods that women in the sample live in did not differ between cases and controls with regards to the restaurant environment or the retail food environment indices. On the other hand, women with breast cancer tended to live in neighborhoods with fewer recreational facilities when compared to women without breast cancer (3.64 for cases compared to 5.24 for controls). Women with and without breast cancer had roughly the same number of parks in their neighborhoods, with a mean of 2.91. Women without breast cancer had more liquor stores in their neighborhoods than women with breast cancer (6.05 liquor stores for controls compared to 3.92 liquor stores for cases). Breast cancer cases lived in neighborhoods that were slightly less walkable than the neighborhoods that the controls lived in, for both measures of walkability. Breast cancer cases also lived in neighborhoods with significantly lower traffic density than controls.

Breast cancer cases were significantly older on average than controls without breast cancer, even though cases and controls were roughly matched based on age group and ethnicity. The case and control samples were not significantly different in terms of Asian ethnicity, marital status, language of interview, education, and insurance status. Slightly over half of the sample identified as Chinese. Roughly two-thirds of the respondents were married at the time of interview. Similarly, two-thirds of respondents conducted the interview in English, about one-quarter conducted the interview in Chinese, and the remaining conducted the interview in Tagalog. The sample was fairly highly educated, with 62% having a college degree. Only 18% had a high school equivalent or lower level of education.

Cases and controls did differ significantly in terms of nativity. Sixty-five percent of controls were foreign-born, compared to 84% of cases. This is a surprising and major difference between the case and control sub-samples. This is opposite of what was expected, since prior studies show that among AANHPIs, US born women have higher rates of breast cancer than foreign born women. Employment status was significantly different for cases compared to controls, with more women with breast cancer reporting not working (48.2% for cases versus 32.8% for controls). This was probably because women left work due to having breast cancer. Homeownership rates were also significantly higher among women with breast cancer (75.5% homeowners) compared to women without breast cancer (61.3% homeowners). This coincides with prior research showing that higher socioeconomic status places women at greater risk for breast cancer (Kohler et al., 2015; Yost et al., 2001).

Models also controlled for risk factors known to be associated with breast cancer that may act as confounders. As expected, a greater proportion of women with breast cancer had a history of breast cancer in their immediate families (25.9% compared to 12.7%). Also coinciding with expectation, women with breast cancer were significantly more likely than those without cancer to have used hormone therapy pills post-menopause, which is associated with greater breast cancer risk. Other breast cancer risk factors—age at first birth, number of months breastfed, and age at first menstrual period—were not significantly different comparing cases with controls. Contrary to expectation, women with breast cancer had significantly higher number of pregnancies than women without breast cancer in this sample. Having had fewer pregnancies increases women's risk of late-onset breast cancer (Key et al., 2001; Kobayashi et al., 2012). However, additional pregnancies do increase risk for early-onset breast cancer, which may explain why in this sample of AANHPI women, breast cancer cases had more pregnancies on average (Kobayashi et al., 2012). Although significant, the mean number of pregnancies did not differ greatly—1.83 for cases compared to 1.49 for controls.

Neighborhood-level control variables were also included. The majority of respondents lived in areas with high neighborhood SES, with over half of respondents living neighborhoods in the highest two quintiles for the neighborhood SES index. This is unsurprising, since the cost of living in the San Francisco Bay Area is high compared to the rest of California. Women with breast cancer were slightly more likely to live in neighborhoods with high SES compared to women without breast cancer (74.5% compared to 65.1%, respectively). This is in the expected direction, since women living in high SES neighborhoods are in general more likely to have breast cancer (Keegan, John, et al., 2010; Kohler et al., 2015; Palmer, Boggs, Wise, Adams-Campbell, & Rosenberg, 2012). In terms of urbanicity, more breast cancer cases lived in non-metropolitan towns and rural areas than controls. The length of time that respondents lived in their current residence did not differ significantly between cases and controls, with a mean of 11 years.

MISSING DATA

As seen in Table 3.1, some variables had more missing values than others. It is important to note that data were collected in two phases: 1) a telephone interview, and 2) a self-administered survey. Of the respondents who completed the telephone interview, 13 cases and 30 controls did not complete the latter self-administered survey. Therefore, these respondents are missing some important variables contained in the self-administered survey, including physical activity, alcohol use, BMI, acculturative stress, perceived safety, neighborhood problems, and years lived at current address. These variables are not missing at random, so it is not possible to conduct multiple imputations in order to recover these missing data. Respondents who did not complete the self-administered survey were therefore excluded from analyses that included those variables.

Several respondents had missing values on physical activity measures. In addition to missing values due to not completing the self-administered survey, several respondents reported “not applicable” to questions on physical activity. It is uncertain what characteristics caused respondents to respond “not applicable.” It is possible that these women had conditions or disabilities that restrained them from engaging in physical activities.

Several neighborhood variables relied on the successful geocoding of respondents’ addresses. One case and 12 controls were not geocoded. Therefore, 13 total respondents had missing neighborhood data. It is likely that these 13 respondents were not missing at random. Perhaps their addresses were in more rural locations that could not be matched with existing street address databases. Alternatively, these respondents may not have provided enough accurate address information. Therefore, multiple imputation was not a good option for recovering missing neighborhood data since these data were not missing at random, so respondents without neighborhood data were dropped from neighborhood analyses.

After excluding respondents with missing data on key variables, the final analytic case control sample size was N=546. Of the original 621 case control respondents, 12% of the respondents were dropped. However, excluding those 43 respondents who did not complete the self-administered questionnaire, only 6% of respondents were dropped due to missing data on important variables. For the control only sample—i.e. sample of women without breast cancer—the final analytic sample size was N=432. Of the original 482 control respondents, 10% were of the respondents were dropped. Excluding those 30 respondents who did not complete the self-administered questionnaire, only 4% of respondents were dropped due to missing data on important variables. Normally, having 10% or less of data missing is acceptable in order to avoid biased statistical analyses (Bennett, 2001). Multiple imputation would not have been appropriate to use, since most of the missing variables were likely not missing at random (Dong & Peng, 2013). Therefore, analyses used listwise deletion of respondents with missing data on key variables.

CORRELATION MATRICES

Table 3.2 presents the pairwise correlations for all continuous and dichotomous variables used when assessing having breast cancer as the outcome. The levels of significance for the correlation coefficients were provided in parentheses. Similarly, Table 3.3 presents the pairwise correlations for all of the continuous and dichotomous variables used when health behaviors were the outcomes. This sample only includes women in the control sample, i.e. without breast cancer.

====== Table 3.2 about here ======

====== Table 3.3 about here ======

These correlation tables will be discussed in greater detail in the following chapters that describe the results of the analyses.

CHAPTER 4: AIM 1 RESULTS

Aim 1 focused on whether individual and neighborhood stressors were associated with breast cancer risk. Hypothesis 1 tested whether the following stressors are associated with greater breast cancer risk: general stress, lifetime discrimination, day-to-day discrimination, and acculturative stress. Hypothesis 2 tested whether the following neighborhood factors were associated with greater breast cancer risk: less neighborhood safety, more neighborhood problems, and less collective efficacy. Hypothesis 3 tested the two-way interactions between individual and neighborhood stressors on breast cancer risk.

Below, the results are organized by outcome. The first section provides the results for analyses with breast cancer status as the outcome. Next, the results for breast cancer related behaviors are provided in the following order: physical activity, alcohol use, fruit and vegetable consumption, and BMI.

BREAST CANCER

Hypothesis 1: Individual-level stressors are associated with breast cancer risk

Having breast cancer was not significantly associated with any individual or neighborhood stressors in Table 3.2. Tables 4A.1 through 4A.4 provide the logistic regression models showing the associations between individual-level stressors and the odds of having breast cancer. In these tables, Model 1 shows the bivariate association between the focal independent variable and odds of having breast cancer. Model 2 provides the full model, which includes all of the individual-level demographic, socioeconomic status, and breast cancer related covariates. The models tested whether individual stressors (i.e. general stress, lifetime discrimination, day-to-day discrimination, and acculturative stress) were associated with odds of having breast cancer. None of the individual stressors were significantly associated with odds of having breast cancer in the bivariate or the full models. For example, general stress was not associated with having breast cancer. In Table 3.2, the correlation coefficient between general stress and having breast cancer was 0.023. In the full regression model in Table 4A.1, general stress was not associated with having breast cancer (OR = 0.97, $p>0.05$) after accounting for individual-level sociodemographic characteristics and known breast cancer risk factors.

====== Tables 4A.1 through 4A.4 about here ======

<u>Hypothesis 2: Neighborhood-level stressors are associated with breast cancer risk</u>

Tables 4A.5 through 4A.7 provide the logistic regression models for odds of having breast cancer on neighborhood stressors. None of the neighborhood stressors (i.e. neighborhood safety, neighborhood problems, and lack of collective efficacy) were significantly associated with having breast cancer. For example, Table 4A.5 shows that odds ratio for having breast cancer on neighborhood safety was not significantly different than 1 (OR = 1.37, $p>0.05$), after accounting for individual-level sociodemographic characteristics, known breast cancer risk factors, and neighborhood-level factors.

====== Tables 4A.5 through 4A.7 about here ======

<u>Hypothesis 3: Neighborhood-level stressors amplify the effect of individual-level stress on breast cancer risk</u>

Tables 4A.8 through 4A.16 provide the logistic regression models for odds of having breast cancer on the interactions between individual- and neighborhood-level stressors. None of the interaction terms were statistically significant at the Bonferroni adjusted p-value ($p<0.006$), after accounting for all of the covariates. For example, Table 4A.8 shows the interaction between general stress and neighborhood safety on having breast cancer. The table shows in Model 2 that the interaction between general stress and neighborhood safety is not significant (OR = 0.59, p>0.05), after accounting for covariates.

====== Tables 4A.8 through 4A.16 about here ======

Collective efficacy seemed to moderate the association between day-to-day discrimination and odds of breast cancer (see Table 4A.15), but this association was only marginally significant in the full model (Model 2) (b=2.70, p<0.05). Additionally, collective efficacy seemed to moderate the association between acculturative stress and odds of breast cancer (see Table 4A.16), but this interaction was only marginally significant (b=3.75, p<0.05). Figures representing these interactions are provided in Appendices 2 and 3.

Other covariates associated with breast cancer risk

Across the various models, other covariates were significantly associated with odds of having breast cancer. Older age was significantly associated with higher cancer risk, such that an additional 10 years of age equated to about 5 to 7 times the odds of having breast cancer. Unsurprisingly, people with a family history of breast cancer had more than twice the odds of having breast cancer. In regards to socioeconomic status, being a homeowner was associated with 2 to 4 times greater risk of breast cancer, compared to renters. Also, people with private insurance had about 2.5 times the odds of having breast cancer as people with public insurance or no insurance, but this association was only statistically significant in some models.

Contrary to expectation, US-born women had about 60% lower odds of having breast cancer than foreign-born women (in Table 4A.1: OR = 0.39, p<0.0125). Also surprising, pre-menopausal women had about 19 times the odds of having breast cancer as post-menopausal women who never used hormone therapy (in Table 4A.1: OR = 0.052, p<0.001), and 9 times the odds of having breast cancer as post-menopausal women who ever used hormone therapy (in

Table 4A.1: OR = 0.11, p<0.001). Usually, post-menopausal women have greater risk of breast cancer as pre-menopausal women.

Some neighborhood covariates were significantly associated with odds of having breast cancer. Living in an API enclave was associated with 2 to 3 times the odds of having breast cancer compared to those not living in an enclave across models (in Table 4A.5: OR =2.87, p<0.0167). In addition, women who lived in their current residence for longer had lower odds of breast cancer (in Table 4A.5: OR = 0.95, p<0.001).

PHYSICAL ACTIVITY

<u>Hypothesis 1: Individual-level stressors are associated with physical activity</u>

Table 3.3 provides a correlation matrix of all of the variables included in Aim 1 models in the control sample (i.e. women without breast cancer). As expected, there was a statistically significant inverse correlation between general stress and moderate physical activity (ρ=-0.126, p<0.01) (see Table 3.3). Moderate physical activity was not correlated with any other individual-level stressor, including lifetime discrimination, day-to-day discrimination, and acculturative stress among foreign-born women. Contrary to expectations, strenuous physical activity was not correlated with any of the individual-level stressors.

Tables 4B.1 through 4B.4 are regression models for individual-level stress on moderate physical activity, and Tables 4C.1 through 4C.4 are regression models for individual-level stress on strenuous physical activity. Model 1 provides the bivariate association between the individual-level stressor and physical activity. Model 2 adds demographic characteristics. Model 3 is the full model that includes socioeconomic status variables.

====== Tables 4B.1 through 4B.4 about here ======

====== Tables 4C.1 through 4C.4 about here ======

Higher general stress was associated with fewer hours per week of moderate physical activity, after accounting for socioeconomic and demographic characteristics (see Table 4B.1). A 2 point increase in general stress, on a scale from 1 to 4, was associated with about 1.6 fewer hours of moderate physical activity per week. In other words, AANHPI women who were more stressed tended to also engage less in moderate physical activities, such as walking, biking, or running errands, even after accounting for other individual characteristics. None of the other stressors—lifetime discrimination, day-to-day discrimination, acculturative stress for foreign-born women—were associated with moderate physical activity in regression models. Individual-level stressors were not associated with strenuous physical activity in regression models.

Hypothesis 2: Neighborhood-level stressors are associated with physical activity

The correlation matrix (Table 3.3) showed that neighborhood-level stressors including neighborhood safety, neighborhood problems, and collective efficacy were not correlated with moderate or strenuous physical activity.

====== Tables 4B.5 through 4B.7 about here ======

====== Tables 4C.5 through 4C.7 about here ======

Tables 4B.5 through 4B.7 and Tables 4C.5 through 4C.7 show the regression models testing whether neighborhood-level stressors were associated with physical activity. Model 1 provides the bivariate associations. Model 2 adds demographic characteristics. Model 3 includes socioeconomic status. Model 4 is the full model that includes neighborhood-level covariates. Greater collective efficacy was associated with higher levels of both moderate (in Table 4B.7, Model 1: $b = 0.68$, $p<0.0167$) and strenuous physical activity (in Table 4C.7, Model 1: $b = 0.19$, $p<0.0167$) in the bivariate models, as expected. However, after controlling for individual-level and neighborhood-level covariates, these associations were only marginally significant. The associations were such that, after controlling for all individual- and neighborhood-level covariates, a 1 point higher collective efficacy score was associated with 0.57 hours per week more moderate physical activity (in Table 4B.7, Model 4: b = 0.57, $p<0.05$) and 0.03 hours per week more strenuous physical activity (in Table 4C.7, Model 4: b = 0.17, $p<0.05$). Physical activity was not associated with neighborhood safety or neighborhood problems in regression models (see Tables 4B.5, 4B.6, 4C.5, and 4C.6).

Hypothesis 3: Neighborhood-level stressors amplify the effect of individual-level stress on physical activity

Tables 4B.8 through 4B.16 and 4C.8 through 4C.16 tested whether neighborhood-level stressors modify the effect of individual-level stressors on physical activity. None of the neighborhood stressors significantly moderated the associations between individual-level stress and physical activity. There were marginally significant interactions at between acculturative stress and neighborhood safety on moderate (in Table 4B.10: b = -1.31, $p<0.05$) and strenuous physical activity (in Table 4C.10: b = -0.50, $p<0.05$). However, these interactions were not considered significant after using the Bonferroni correction to account for multiple comparisons. Figures representing these marginally significant interactions can be found in Appendices 4 and 5.

====== Tables 4B.8 through 4B.16 about here ======

====== Tables 4C.8 through 4C.16 about here ======

Other covariates associated with physical activity

Other covariates were consistently associated with moderate and strenuous physical activity in regression models. US-born AANHPI women engaged in more moderate and strenuous physical activity than their foreign-born counterparts across all models. US-born women engaged in about 1.1 more hours per week of moderate physical activity (in Table 4B.3, Model 3: b = 1.14, p<0.0125) and about 0.16 more hours per week of strenuous physical activity (in Table 4C.3, Model 3: b = 0.42, p<0.001) than their foreign-born counterparts. Additionally, less-educated women engaged in more moderate and strenuous physical activity than college graduates. Women with a high school education or less engaged in about 2 more hours per week of moderate physical activity (in Table 4B.3, Model 3: b = 2.16, p<0.001) and about 0.3 more hours per week of strenuous physical activity (in Table 4C.3, Model 3: b = 0.53, p<0.0125). At the neighborhood-level, living in a high ethnic enclave was associated with about 0.3 hours per week less strenuous physical activity than those living in a low ethnic enclave (in Table 4C.5, Model 4: b = -0.30, p<0.0167).

ALCOHOL USE

<u>Hypothesis 1: Individual-level stressors are associated with alcohol use</u>

Average weekly alcohol use was very weakly correlated with day-to-day discrimination (ρ=0.113, p=0.02) (see Table 3.3). Alcohol use was not significantly correlated with any other individual-level stressor, including general stress, lifetime discrimination, and acculturative stress.

Tables 4D.1 through 4D.4 provide the negative binomial regression results testing the associations between individual-level stress and alcohol use. The association between day-to-day discrimination and alcohol use was not significant after controlling for demographic characteristics, including age, marital status, Asian ethnicity, survey language, and nativity (in Table 4D.3, Model 3: b = 0.15, p>0.05). General stress, lifetime discrimination, and acculturative stress were not associated with alcohol use, after accounting for demographic characteristics and socioeconomic status in regression models (see Tables 4D.1, 4D.2 and 4D.4).

====== Tables 4D.1 through 4D.4 about here ======

Hypothesis 2: Neighborhood-level stressors are associated with alcohol use

In the correlation table, higher alcohol use showed weak positive correlations with neighborhood problems (ρ=0.155, p=0.001) and collective efficacy (ρ=0.113, p=0.019) (see Table 3.3). Tables 4D.5 through 4D.7 provide the negative binomial regression models testing the associations between neighborhood-level stress and alcohol use. These associations were non-significant after controlling for individual-level sociodemographic characteristics (see Tables 4D.6 and 4D.7, Model 2). Therefore, neighborhood-level stressors were not associated with alcohol use after accounting for confounders at the individual-level.

====== Tables 4D.5 through 4D.7 about here ======

Hypothesis 3: Neighborhood-level stressors amplify the effect of individual-level stress on alcohol use

Tables 4D.8 through 4D.16 tested whether neighborhood-level stressors moderated the associations between individual-level stress and alcohol use. Neighborhood safety moderated the association between acculturative stress and alcohol use (in Table 4D.10: b = 1.14, $p<0.05$), but this association was only marginally significant after accounting for the Bonferroni correction. A graph representing this interaction can be found in Appendix 6. The other neighborhood stressors did not significantly moderate any of the associations between individual stress and alcohol use.

====== Tables 4D.8 through 4D.16 about here ======

Other covariates associated with alcohol use

Other consistent patterns emerged among covariates for alcohol use. Most notably, US-born AANHPI women had consistently higher average alcohol use than their foreign-born counterparts (in Table 4D.1, Model 3: b = 0.76, $p<0.0125$). In addition, people with higher educational attainment drank more alcohol than those with lower educational attainment, with the largest difference between college graduates and those with a high school degree or less (in Table 4D.1, Model 3: b = -1.09, p<0.0125). On average, the other AANHPI ethnicity group drank more alcohol per week over the past year, compared to Chinese and Filipinas, taking all other covariates into account (in Table 4D.1, Model 3: b = 0.95, p<0.001). In some models, those who conducted the survey in Tagalog had lower alcohol use than those who conducted the survey in English (in Table 4D.5, Model 3: b = -1.96, p<0.0167). Age, marital status, homeownership, and insurance status were all not significantly associated with alcohol use (see Table 4D.1). When examining the foreign-born only sample in Table 4D.4, none of the covariates were significantly associated with alcohol use.

In models with neighborhood-level covariates (Tables 4D.5 through 4D.7), those living in a high ethnic enclave averaged about 0.55 fewer drinks per week than those not, taking all else into account (in Table 4D.5, Model 4: b = -0.55, p<0.0167). Additionally, AANHPI women living in the suburbs also drank significantly less alcohol per week than women living in metropolitan urban areas (in Table 4D.5, Model 4: b = -0.63, p<0.0167).

FRUIT AND VEGETABLE CONSUMPTION

<u>Hypothesis 1: Individual-level stressors are associated with fruit and vegetable consumption</u>

Bivariate analyses revealed that consumption of fruits or vegetables were not correlated with any of the individual-level stressors, with the exception of greater day-to-day discrimination being weakly correlated with more fruit consumption (ρ=-0.139, p=0.004) (see Table 3.3). In the regression analysis, day-to-day discrimination was associated with fruit consumption in the bivariate model (in Table 4E.3, Model 1: b = -1.26, p<0.0125), but this association was not significant after accounting for demographic characteristics and socioeconomic status (in Table 4E.3, Model 3: b = -0.51, p>0.05). None of the other associations between individual-level stress and consumption of fruit or vegetables were significant after accounting for demographic characteristics and socioeconomic status (see Tables 4E.1 through 4E.4 and Tables 4F.1 through 4F.4).

====== Tables 4E.1 through 4E.4 about here ======

====== Tables 4F.1 through 4F.4 about here ======

Hypothesis 2: Neighborhood-level stressors are associated with fruit and vegetable consumption

In bivariate analyses, collective efficacy was positively correlated with greater fruit and vegetable consumption (ρ=0.231, p=0.000 for fruit and ρ=0.125, p=0.010 for vegetables) (see Table 3.3). In addition, greater neighborhood safety was weakly correlated with higher vegetable consumption (ρ=0.160, p=0.001).

Tables 4E5 through 4E.7 and 4F.5 through 4F.7 provide regression models of the associations between neighborhood stress and consumption of fruits and vegetables. Higher neighborhood collective efficacy was significantly associated with higher average fruit and vegetable consumption per week, after controlling for individual- and neighborhood-level covariates (see Tables 4E.7 and 4F.7). One point higher collective efficacy score (range 0 to 3) was associated with 1.7 more times per week of consuming fruits (Table 4E.7, Model 4: b = 1.70, p<0.001) and 0.78 more times per week of consuming vegetables (Table 4F.7, Model 4: b = 0.78, p<0.0167). In addition, higher levels of reported neighborhood safety were associated with higher vegetable consumption (b=0.81, p<.01) (see Table 4F.5), after accounting for covariates. Neighborhood problems were not associated with fruit or vegetable consumption (see Tables 4E.6 and 4F.6).

====== Tables 4E.5 through 4E.7 about here ======

====== Tables 4F.5 through 4F.7 about here ======

Hypothesis 3: Neighborhood-level stressors amplify the effect of individual-level stress on fruit and vegetable consumption

Tables 4E.8 through 4E.16 and Tables 4F.8 through 4F.16 tested whether neighborhood-level stressors moderated the associations between individual-level stress and consumption of fruit or vegetables. The results showed that neighborhood stressors did not significantly moderate any of the associations between individual stress and consumption of fruit or vegetables. For example, the interaction between general stress and neighborhood safety was not significant, accounting for all covariates (Table 4E.8: b = 0.080, $p<0.05$).

====== Tables 4E.8 through 4E.16 about here ======

====== Tables 4F.8 through 4F.16 about here ======

Other covariates associated with fruit and vegetable consumption

Higher fruit consumption was positively associated with older age, with each decade of older age being associated with approximately 0.75 additional servings of fruit consumed per week (in Table 4E.1, Model 3: b = 0.75, $p<0.0125$). Compared to Chinese and other AANHPI women, Filipina women consumed about 2 servings of vegetables per week fewer (in Table 4F.1, Model 3: b = -2.06, $p<0.0125$). This difference was even more pronounced in the foreign-born only sample, with Filipina women consuming almost 3.5 servings of vegetables less than Chinese women, on average (Table 4F.4, Model 3: b = -3.44, $p<0.001$). Neighborhood-level covariates, including neighborhood socioeconomic status, living in an ethnic enclave, urbanicity, and years lived in current address, were not associated with fruit and vegetable consumption (see Tables 4E.5 through 4E.7 and Tables 4F.5 through 4F.7).

BODY MASS INDEX (BMI)

Hypothesis 1: Individual-level stressors are associated with BMI

Looking at the bivariate associations, greater day-to-day discrimination was associated with higher BMI (ρ=0.148, p=0.003) (see Table 3.3). None of the other individual-level stressors were significantly correlated with BMI.

After accounting for demographic characteristics and socioeconomic status in regression models, general stress, lifetime discrimination, and day-to-day discrimination were all associated with BMI at $p<0.05$ (see Table 4G.1 through 4G.3, Model 3), but these associations were not significant when using the more conservative Bonferroni correction for multiple comparisons ($p<0.0125$ is significant). For example, greater day-to-day discrimination was associated with higher BMI in the bivariate model (Table 4G.3, Model 1: b = 1.50, $p<0.0125$). However, after controlling for demographic characteristics and socioeconomic status, this association was not significant with the Bonferroni correction (Table 4G.3, Model 3: b = 1.17, $p<0.05$). Among foreign-born respondents, acculturative stress was not associated with BMI (see Table 4G.4).

====== Tables 4G.1 through 4G.4 about here ======

Hypothesis 2: Neighborhood-level stressors are associated with BMI

In the correlation matrix in Table 3.3, neighborhood problems were significantly but weakly correlated with BMI (ρ=0.180, p=0.000). In regression analysis, neighborhood problems was only marginally associated with BMI (Table 4G.6, Model 1: b = 0.33, $p<0.05$). After accounting for individual- and neighborhood-level covariates, this association was not significant (Table 4G.6, Model 4: b = 0.20, $p>0.05$). None of the other neighborhood-level stressors, including neighborhood safety and lack of collective efficacy, were associated with BMI after controlling for sociodemographic characteristics (see Tables 4G.5 through 4G.7).

====== Tables 4G.5 through 4G.7 about here ======

Hypothesis 3: Neighborhood-level stressors amplify the effect of individual-level stress on BMI

Tables 4G.8 through 4G.16 tested whether neighborhood-level stressors moderated the associations between individual-level stress and BMI. The results showed that neighborhood stressors did not significantly moderate any of the associations between individual stress and BMI. For example, the interaction between general stress and neighborhood safety was not significantly associated with BMI, accounting for covariates (Table 4G.8: $b = -0.69$, $p>0.05$).

====== Tables 4G.8 through 4G.16 about here ======

Other covariates associated with BMI

Across models, covariates were consistently associated with BMI. Most notably, US-born women had higher BMIs than foreign-born women by over 2 points, controlling for other covariates (in Table 4G.1, Model 3: $b = 2.27$, $p<0.001$). In addition, women reporting ethnicity in the “other AANHPI” category had higher BMI than Chinese women, by an average BMI score of about 1.9 points greater (in Table 4G.1, Model 3: b - 1.94, $p<0.0125$). Among foreign-born women only, there were no significant differences in BMI by Asian ethnicity (see Table 4G.4). Neighborhood-level covariates, including neighborhood socioeconomic status, living in an ethnic enclave, urbanicity, and years lived in the current residence, were not significantly associated with BMI (see Tables 4G.5 through 4G.7).

AIM 1 DISCUSSION

Aim 1 sought to determine if individual and neighborhood stressors contributed to breast cancer risk. This aim furthermore tested whether neighborhood stress moderated the associations between individual stress and breast cancer risk. Contrary to expectation, the results showed that stress did not influence the odds of having breast cancer. In addition, the interactions between stressors at different levels did not influence odds of having breast cancer.

The results were largely the same when examining breast cancer-related health behaviors. Individual stressors—including general stress, discrimination, and acculturative stress—were not associated with health behaviors, with the exception of higher general stress being significantly associated with greater moderate physical activity. Neighborhood stressors—including neighborhood safety, neighborhood problems, and lack of collective efficacy—were largely not associated with health behaviors. The only exceptions were for fruit and vegetable consumption. Lower collective efficacy was significantly associated with less fruit and vegetable consumption. In addition, lower neighborhood safety was associated with less vegetable consumption. None of the interactions between stressors at different levels influenced any of the health behaviors studied. Below I discuss the few significant findings that were found.

This research found that women with high levels of general stress engaged in less moderate physical activity. It is not possible in this study to determine if stress caused women to be less physically active, or if being less physically active led to women having higher stress, due to the cross-sectional nature of this dataset. Prior research using prospective study designs show that exercise leads to better mental health outcomes, including less depression, anxiety, and stress (Fox, 1999; Penedo & Dahn, 2005; Scully, Kremer, Meade, Graham, & Dudgeon, 1998; Teychenne, Ball, & Salmon, 2008). There has also been research on showing that greater stress leads to less physical activity, with one review finding that the majority of prospective studies on the topic indicate that prior psychological stress predicts less physical activity and more sedentary behavior (Stults-Kolehmainen & Sinha, 2014). The current study corroborates these prior findings regarding the relationship between psychological stress and physical activity.

Although moderate physical activity was associated with less stress in this study, strenuous physical activity was not associated with stress. It is plausible that benefits in psychological stress come from moderate levels of physical activity, which include leisurely activities such as walking and low-intensity recreational activities, but not from strenuous activities. Indeed, there have been mixed or null findings in prospective studies examining the relationship between stress and physical activity, which may be due to the different measurements of physical activity (Ainsworth et al., 2012; Tudor-Locke & Myers, 2001). The definition of strenuous physical activity in the Asian CHI questionnaire included activities such as washing windows, vacuuming, heavy lifting, and farm work, as well as other aerobic activities such as swimming laps and running. This definition captures a range of activities, from recreational aerobics to manual labor. One may imagine that stress may be negatively associated with recreational aerobics and positively associated with hard manual labor, though it is impossible to separate these associations with the current data. Therefore, the definitions of moderate and strenuous physical activity likely influenced the present results. Other studies of stress and physical activity may consider the use of more objective measures not subject to reporting bias, such as accelerometers (Dyrstad, Hansen, Holme, & Anderssen, 2014).

The results showed that, as expected, greater neighborhood stress was associated with lower fruit and vegetable consumption. In particular, low collective efficacy was associated with consumption of fewer fruits and vegetables and low neighborhood safety was associated with consumption of fewer vegetables. Reported collective efficacy and neighborhood safety may be indicators of greater social involvement and better neighborhood aesthetics. Recent studies have suggested that greater attachment to one's neighborhood leads to greater social involvement (i.e. getting together with friends and participating in neighborhood community activities) (Dallago et al., 2009; Litt et al., 2011). This neighborhood social involvement provides vital social supports and structures that may promote healthy behaviors (Berkman & Glass, 2000; Carpiano, 2006). Studies showed that greater social participation was indeed associated with consumption of more fruits and vegetables in Sweden, the United Kingdom, and Denver, Colorado (Conklin et al., 2014; Lindström, Hanson, & Östergren, 2001; Litt et al., 2011). The results of this study align with these prior findings. In this study, reported collective efficacy possibly reflects higher levels of social involvement and attachment, leading to greater fruit and vegetable consumption.

Aside from the above discussed findings, the majority of the tested associations were null. There are possible explanations for these null findings. First of all, none of the stressors were significantly associated with risk of having breast cancer. Studies on stress and breast cancer have revealed mixed findings (Chida, Hamer, Wardle, & Steptoe, 2008; Duijts et al., 2003; Petticrew et al., 1999). The null findings in this study may reflect issues with the way stress was measured. In this study, stressors were measured in adulthood, with most of the stressors self-reported for the prior 12 months. From a life course perspective, it is plausible that if stress is indeed associated with breast cancer, that there are sensitive periods during which increased stress may adversely affect later breast cancer development (Elder, 1998). In particular, stress that occurs during or prior to menarche may influence abnormal development of the tissues in the breast, leading to increased cancer risk (Antonova et al., 2011). Researchers have also suggested that abnormal stress occurring in early childhood, including prenatal exposures to maternal stress in the womb, may influence the subsequent development of cancer (Williams, Mohammed, & Shields, 2016). Future studies should take a life course perspective to examine the development of breast cancer from exposure to these early life stressors. This could be accomplished by using longitudinal datasets that have measures of early life or prenatal stress exposures. Alternatively, retrospective datasets may be used if they can be reliably linked to early life stressors. For example, a retrospective study of breast cancer risk among women who grew up in the Japanese internment camps may reasonably assume that living in through internment in early life was a significant stressor.

The timing of the measurement of stress may have also influenced the null findings for health behaviors and BMI. For example, BMI is influenced by genetic, environmental, and behavioral factors that develop over the lifetime (Quick, Wall, Larson, Haines, & Neumark-Sztainer, 2013; Rooney, Mathiason, & Schauberger, 2011). It is possibly less likely that stress reported over the past 12 months influenced current BMI dramatically, as compared with stress that occurred during early childhood, which may represent a critical period for establishing lifelong metabolism rates.

Results of this study showed that other sociodemographic characteristics were stronger predictors of cancer and health behaviors than recently experienced stress. Most notable was nativity status, with US-born and foreign-born women differing considerably in regards to breast cancer risk. Surprisingly, foreign-born women had about 2.5 times greater likelihood of having breast cancer as US-born women, contrary to prior research that shows US-born AANHPI women having higher incidence of breast cancer (Gomez, Quach, et al., 2010). Results for cancer-related health behaviors paint a different picture. US-born women seemed to be healthier than foreign-born women in regards to physical activity, with greater engagement in both moderate and strenuous physical activity. However, US-born women had higher levels of alcohol consumption, a risk factor for breast cancer. In addition, US-born had higher average BMI compared to foreign-born women, which may put them at greater risk for breast cancer post-menopause. Fruit and vegetable consumption did not significantly differ by nativity status. It is important to note that although higher fruit and vegetable consumption may be generally protective against cancer, eating more fruits and vegetables has not been shown to be protective against breast cancer (Aune et al., 2012).

These findings paint a complex picture of how nativity status impacts health and health behaviors. On one hand, it is uncertain why in this sample US-born women had lower breast cancer risk than foreign-born women, despite prior evidence to the contrary for the population of Asian women in California (Gomez, Quach, et al., 2010). If this is a valid finding, then it is possible that breast cancer rates among women from Asian countries has caught up to and even exceeded breast cancer rates in the US in recent years. Alternatively, it is possible that this particular sample in the San Francisco Bay Area represents a population that is vastly different than the rest of the population in California. If the Asian women who immigrate to the San Francisco Bay Area have higher breast cancer incidence compared to other immigrants in the state to begin with, this may explain this seemingly anomalous finding.

When looking at only the sample of women without diagnosed breast cancer, it seems that some cancer-related health behaviors are better and some are worse for foreign-born women compared to US-born women. Much of the prior research on acculturation and health behaviors for immigrants in the US has suggested that acculturation, or more accurately Westernization, leads to worsening health behaviors, particularly among Latinos (Allen et al., 2007; Hawkins, Gillman, Shafer, & Cohen, 2014; Lara, Gamboa, Kahramanian, Morales, & Bautista, 2005).

Fewer studies have noted the varied ways in which acculturation may improve some health behaviors and worsen others (Lesser, Gasevic, & Lear, 2014; Salant & Lauderdale, 2003; Yi, Roberts, Lightstone, Shih, & Trinh-Shevrin, 2015). The current study does not directly measure acculturation, which is defined as the process in which members of one cultural group adopt the beliefs and behaviors of another cultural group (Thomson & Hoffman-Goetz, 2009). Other studies have used measures such as nativity status, length of time lived in the US, or English language proficiency as proxies for acculturation, but these measures do not directly assess how much one cultural group has adopted the beliefs and behaviors of another cultural group. Instead, this study shows that foreign-born differed from US-born Asian women in their health behaviors, and that these differences may be positive or negative depending on the outcome in question. Future studies may develop and incorporate direct measures of AANHPI acculturation to Western culture in examining breast cancer risk. These studies may also explore longitudinally how health behaviors change with longer time lived in the US and among the US-born children and grandchildren of Asian immigrants.

Evaluation of the neighborhood-level covariates showed some consistent patterns, particularly with the ethnic enclave variable. Living in a high API enclave was associated with increased likelihood of having breast cancer, less strenuous physical activity, and less drinking. These associations were explored and discussed in greater depth in Aim 2.

In conclusion, this study did not find evidence for associations between breast cancer risk and stress at both the individual- and neighborhood-levels. Differences were found between US-born and foreign-born AANHPI women in terms of breast cancer risk and related health behaviors, although the results suggest that nativity status does not consistently indicate better or worse chronic disease risk.

CHAPTER 5: AIM 2 RESULTS

Aim 2 sought to determine whether living in an ethnic enclave was related to breast cancer risk. Using GIS mapping, this research describes the geographic distribution of breast cancer cases and controls in the San Francisco Bay Area in relation to ethnic enclaves. Next, regression models tested whether living in an ethnic enclave was related to breast cancer risk and health behaviors. I hypothesized that women living in ethnic enclaves would have lower breast cancer risk than those not. Lastly, nativity status was included as a moderator to test whether the association between living in an ethnic enclave and breast cancer risk varied by nativity.

Below, the results are organized by outcome, starting with breast cancer status. Next, the results for cancer-related health behaviors are provided in the following order: physical activity, alcohol use, fruit and vegetable consumption, and BMI.

Logistic regression models for breast cancer status as the outcome are presented in two tables. The first table tests whether living in an ethnic enclave is associated with having breast cancer, accounting for all individual- and neighborhood-level covariates. The second table tests whether nativity moderates the association between ethnic enclaves and breast cancer status, accounting for all covariates. For the linear regression tables testing whether living in an ethnic enclave is associated with health behaviors, results are presented using four nested models. Model 1 tests whether living in a high API enclave is associated with the health behavior, controlling for individual-level demographic characteristics: nativity, age, marital status, Asian ethnicity, and survey language. Model 2 adds individual-level socioeconomic status factors: education, employment, homeownership, and health insurance status. Model 3 adds neighborhood-level covariates: neighborhood socioeconomic status, urbanicity, and years lived current address. Lastly, Model 4 tests whether nativity status is a moderator by including the interaction between living in an ethnic enclave and nativity status.

Additionally, I carried out a supplementary analysis that tested whether neighborhood socioeconomic status (SES) moderated the association between living in an ethnic enclave and breast cancer risk. These results are discussed below.

GIS MAPPING

Figure 5.1 is a map of the Asian CHI study area, which included Alameda, Contra Costa, San Francisco, San Mateo, and Santa Clara Counties in the Greater San Francisco Bay Area. The residential addresses of Asian CHI respondents were geocoded, and are represented on this map. Yellow dots are the residences of women diagnosed with breast cancer (cases) and dark purple dots are the residences of the women without breast cancer (controls). The sample respondents appear spread out throughout the study area, with some clustering occurring in the smaller, more densely populated San Francisco County. The majority of respondents also seem to live closer to the coastal areas of the 5 counties. Comparing the residential location of cases versus controls visually, there does not appear to be clear differences between the distribution of cases and controls in the study area.

====== Figure 5.1 about here ======

Figure 5.2 presents the same study area, assessing the location of cases and controls in relation to the API ethnic enclave index values in block groups. In this map, the API ethnic enclave index is presented as gradations of purple color based on the quintiles of the index, with values ranging from 1 to 5. Higher values are represented by darker red colors, indicating block groups that are high ethnic enclaves (i.e. low acculturation neighborhoods). This map shows that the majority of cases and controls live in areas that are high ethnic enclaves. This is even clearer in Figure 5.3, which represents the dichotomous ethnic enclave measure. In this map, darker purple indicates high ethnic enclaves (ethnic enclave index = 5) and light purple represents low ethnic enclaves (ethnic enclave index = 1 to 4).

====== Figure 5.2 about here ======

====== Figure 5.3 about here ======

Figures 5.4 through 5.7 represent a sensitivity analysis that examines the residential location of cases and controls relative to the 4 components that make up the ethnic enclave index in block groups: percent AANHPI residents, percent recent immigrants, percent who speak an AANHPI language and have limited English proficiency, and percent of households that are AANHPI language speaking and are linguistically isolated. In each map, the darker colors represent higher percentages. The color gradations were based on quintiles of the distribution of each of the four measures in block groups.

Figure 5.4 shows the location of cases and controls in relation to the percent of block group residents who are AANHPI. This map shows that far fewer respondents live in areas where 54% or more of the block group population identifies as AANHPI. Most respondents live in areas where 10% to 53% of the residents are AANHPI, and several respondents also live in areas where fewer than 10% of residents are AANHPI. From this map, it is not clear that there are differences between the percent of AANHPI residents in the neighborhoods of breast cancer cases versus the neighborhoods of controls without breast cancer.

====== Figure 5.4 about here ======

Figure 5.5 shows the residential location of Asian CHI respondents in relation to the percent of block group residents who are recent immigrants (i.e. immigrated to the US in the past 5 years). A few cases and controls lived in areas where only 0% to 8% of residents were recent immigrants. The majority of respondents seemed to live in areas where the recent immigrant population ranged from 9% to 45%. Few respondents lived in areas where 46% or more of the population were recent immigrants. There were no clear differences between the percent of recent immigrants in neighborhoods occupied by cases versus controls.

====== Figure 5.5 about here ======

Figure 5.6 displays the residential location of respondents in relation to percent of block group households that are API language speaking and are also linguistically isolated. This map shows that many respondents, both cases and controls, lived in areas where 2% or fewer households were linguistically isolated. In general, most respondents tended to live in areas where 16% or fewer households were linguistically isolated. Not many respondents lived in areas where 39% or more households that were API language speaking and also linguistically isolated. These residential location patterns did not appear to differ between cases and controls.

====== Figure 5.6 about here ======

Lastly, Figure 5.7 displays the residential location of cases and controls relative to percent of residents who speak an API language and have limited English proficiency in block groups. As seen from this map, few areas in the San Francisco Bay Area have higher than 4% of API speaking residents who have limited English proficiency. Nevertheless, the respondents seem to be generally clustered around these areas, such that about half of respondents live in neighborhoods with 4% or more residents who speak an API language with limited English proficiency, and half live in neighborhoods with fewer than 4% of similar residents.

====== Figure 5.7 about here ======

BREAST CANCER

Hypothesis 4: Living in an ethnic enclave is associated with lower breast cancer risk

In Table 3.2, having breast cancer was not correlated with living in a high ethnic enclave ($\rho = 0.058$, $p = 0.173$). Table 5A.1 shows the logistic regression results testing the association between living in an ethnic enclave and odds of breast cancer. Accounting for individual sociodemographic characteristics, breast cancer risk factors, and neighborhood characteristics, living in an Asian or Pacific Islander (API) ethnic enclave was associated with 2.6 times higher odds of having breast cancer than women not living in an API ethnic enclave (Table 5A.1: OR = 2.60, $p<0.01$). This revealed that living in ethnic enclaves was significantly associated with breast cancer risk, but in the opposite direction as expected.

====== Table 5A.1 about here ======

Hypothesis 5: Nativity status moderates the association between living in an ethnic enclave and breast cancer risk

Table 5A.2 provides the logistic regression results that test whether nativity status moderates the association between living in an API ethnic enclave and breast cancer risk. The results show that the positive association between living in an API ethnic enclave and higher breast cancer risk did not differ significantly by nativity status (Table 5A.2: OR = 0.46, $p>0.05$), contrary to expectation.

====== Table 5A.2 about here ======

Other covariates associated with breast cancer

Unsurprisingly, older age was significantly associated with having breast cancer, such that every additional 10 years of age increased odds of having breast cancer by 7 fold (Table 5A.1: OR = 7.17, $p<0.001$). Notably, nativity status was not significantly associated with breast cancer, accounting for all other covariates (Table 5A.1: OR = 0.56, $p>0.05$). Being a homeowner was associated with over 4 times the odds of having breast cancer, compared to non-homeowners (Table 5A.1: OR = 4.19, $p<0.001$). Women with history of breast cancer in their families had about 2.4 greater odds of having breast cancer as those without a family history (Table 5A.1: OR = 2.38, $p<0.01$). Living in a high neighborhood SES was significantly associated with almost double the risk of breast cancer, compared to those with lower neighborhood SES (Table 5A.1: OR = 1.96, $p<0.05$), after accounting for living in an ethnic enclave and other covariates.

Surprisingly, women with less than or equal to a high school degree had almost 3 times the odds of having breast cancer as college graduates (Table 5A.1: OR = 2.97, $p<0.01$). Also surprising, post-menopausal women had much lower odds of having breast cancer as premenopausal women, by about 95% (Table 5A.1: OR = 0.047, $p<0.001$).

PHYSICAL ACTIVITY

Hypothesis 4: Living in an ethnic enclave is associated with more physical activity

In Table 3.3, living in a high ethnic enclave was significantly correlated with strenuous physical activity ($\rho = -0.113$, $p = 0.018$), but not moderate physical activity ($\rho = -0.036$, $p=0.479$). Tables 5B and 5C show the regression models testing whether living in an ethnic enclave is associated with moderate and strenuous physical activity, respectively. As shown in Table 5C, Model 3, living in an ethnic enclave was significantly associated with less strenuous physical activity, after controlling for individual- and neighborhood-level covariates. Women living in an API enclave engaged in 0.29 fewer hours of strenuous physical activity than those not living in an API enclave (Table 5C, Model 3: $b = -0.29$, $p<0.009$). This association was in the opposite direction that was expected. Living in an ethnic enclave was not associated with moderate physical activity (Table 5B, Model 3: $b = -0.39$, $p>0.05$).

====== Table 5B about here ======

====== Table 5C about here ======

Hypothesis 5: Nativity status moderates the association between living in an ethnic enclave and physical activity

Tables 5B and 5C show that nativity status did not moderate the associations between living in an ethnic enclave and moderate (Table 5B, Model 4: b = 0.39, p>0.05) or strenuous (Table 5C, Model 4: b = 0.0079, p>0.05) physical activity.

Other covariates associated with physical activity

US-born women engaged in 1.3 more hours per week of moderate physical activity (Table 5B, Model 3: b = 1.27, p<0.009) and 0.2 more hours per week of strenuous physical activity (Table 5C, Model 3: b = 0.40, p<0.009) than foreign-born women. Women with a high school degree or less education engaged in more physical activity than college graduates. Specifically, they engaged in 2.2 more hours of moderate physical activity (Table 5B, Model 3: b = 2.24, p<0.001) and 0.3 more hours of strenuous physical activity per week (Table 5C, Model 3: b = 0.58, p<0.009) than college graduates. None of the other covariates were statistically significant in the full models.

ALCOHOL USE

Hypothesis 4: Living in an ethnic enclave is associated with lower alcohol use

In Table 3.3, living in a high ethnic enclave was significantly correlated with less alcohol consumption (ρ = -0.194, p = 0.000). Table 5D presents the negative binomial regression results testing whether living in an ethnic enclave is associated with average weekly alcohol use. Model 3 shows that living in an API enclave was significantly associated with lower weekly alcohol use than not living in an API enclave. Specifically, women living in an API enclave consumed 0.55

fewer alcohol drinks per week on average than women not living in an API enclave. This association was in the expected direction (Table 5D, Model 3: b = -0.55, p<0.009).

====== Table 5D about here ======

<u>Hypothesis 5: Nativity status moderates the association between living in an ethnic enclave and alcohol use</u>

As shown in Table 5D, Model 4, nativity status did not significantly moderate the association between living in an ethnic enclave and alcohol use (b = -0.36, p>0.05).

<u>Other covariates associated with alcohol use</u>

US-born women drank on average 0.7 more alcoholic drinks per week than their foreign-born counterparts (Table 5D, Model 3: b = 0.72, p<0.009). People in the "other AANHPI" race category drank about 0.9 more alcohol drinks than Chinese (Table 5D, Model 3: b = 0.85, p<0.001), accounting for all else. People who completed the survey in Tagalog drank on average 2 fewer alcoholic beverages per week than people who completed the survey in Egnlish (Table 5D, Model 3: b = -1.82, p<0.009). People living in suburban areas drank 0.6 fewer alcoholic drinks per week than those living in metropolitan urban areas (Table 5D, Model 3: b = -0.63, p<0.009).

FRUIT AND VEGETABLE CONSUMPTION

<u>Hypothesis 4: Living in an ethnic enclave is associated with greater consumption of fruit and vegetables</u>

As shown in Table 3.3, fruit (ρ = -0.016, p = 0.747) and vegetable (ρ = -0.022, p = 0.641) consumption were not significantly correlated with living in a high ethnic enclave. Tables 5E and 5F provide the results of the regression models testing whether living in an ethnic enclave is associated with fruit and vegetable consumption. The regression results show that living in an ethnic enclave is not significantly associated with either fruit (Table 5E, Model 3: b = -0.63, p>0.05) or vegetable consumption (Table 5F, Model 3: b = -0.38, p>0.05).

====== Table 5E about here ======

====== Table 5F about here ======

Hypothesis 5: Nativity status moderates the association between living in an ethnic enclave and consumption of fruit and vegetables

As shown in Tables 5E and 5F, nativity status does not significantly moderate the association between living in an ethnic enclave and consumption of fruit (Table 5E, Model 4: b = -1.25, p>0.05) and vegetables (Table 5F, Model 4: b = -1.71, p>0.05).

Other covariates associated with consumption of fruit and vegetables

Older women tended to eat more fruit. On average, every additional 10 years of age was associated with eating 0.8 more servings of fruit per week (Table 5E, Model 3: b = 0.75, p<0.009). Filipinas ate vegetables 2.2 fewer times per week on average than Chinese women (Table 5F, Model 3: b = -2.22, p<0.009). None of the other covariates were significantly associated with fruit and vegetable consumption (see Tables 5E and 5F).

BODY MASS INDEX (BMI)

Hypothesis 4: Living in an ethnic enclave is associated with lower BMI

In Table 3.3, BMI was not significantly correlated with living in a high ethnic enclave (ρ = -0.071, p = 0.199). Table 5G provides the regression models testing whether living in an ethnic enclave is associated with body mass index. The results show that living in an API enclave is not significantly associated with body mass index (Table 5G, Model 3: -0.52, p>0.05).

====== Table 5G about here ======

Hypothesis 5: Nativity status moderates the association between living in an ethnic enclave and BMI

Table 5G, Model 4 shows that nativity status does not significantly moderate the association between living in an ethnic enclave and BMI ($b = -2.12$, $p>0.05$).

Other covariates associated with BMI

US-born women had 2.2 points higher BMI than foreign-born women (Table 5G, Model 3: $b = 2.22$, $p<0.009$). People in the “other AANHPI” category had 1.9 points higher BMI than Chinese on average (Table 5G, Model 3: $b = 1.89$, $p<0.009$), accounting for all else. None of the other covariates were significantly associated with BMI.

SUPPLEMENTARY ANALYSIS

The following section discusses the results of a supplementary analysis that evaluated whether neighborhood socioeconomic status (SES) moderated the associations between living in an ethnic enclave and breast cancer risk. Neighborhood SES was measured using a dichotomous variable representing high (Yang Index = 4 or 5) versus low neighborhood SES (Yang Index = 1, 2, or 3) (see Chapter 2, “Control Variables”).

Supplemental Analysis: Neighborhood SES moderates the association between living in an ethnic enclave and breast cancer risk

Figure 5.8 presents a map of neighborhood SES in the Asian CHI study area and the residential location of the study respondents. As seen from this map, most of the study area has high neighborhood SES. Therefore, the vast majority of respondents lived in high SES neighborhoods, while few lived in neighborhoods with low neighborhood SES.

====== Figure 5.8 about here ======

Figure 5.9 is a map showing the interaction between neighborhood SES and ethnic enclaves. In this map, 4 different types of neighborhoods are displayed using 4 colors. First, light green represents areas that are low ethnic enclaves, low SES neighborhoods. In the map, this is also labeled as “downward assimilation” neighborhoods. Downward refers to the low SES in neighborhoods, while assimilation refers to low ethnic enclaves. The second area is represented in bright green, indicating areas that are low ethnic enclaves with high neighborhood SES. These types of neighborhoods are labeled “upward assimilation” neighborhoods. Upward refers to the high SES in these neighborhoods. The third area is light pink in color, and it represents neighborhoods that are high ethnic enclaves with low neighborhood SES. This area is also labeled “downward segregation” neighborhoods. Here, downward refers to the low neighborhood SES, and segregation refers to the area being a high ethnic enclave. Fourth, the final area is bright red in color, representing neighborhoods that are high ethnic enclaves and have high neighborhood SES. These neighborhoods are labeled “upward segregation” neighborhoods.

====== Figure 5.9 about here ======

The map in Figure 5.9 shows that the majority of the San Francisco Bay Area consists of low enclave, high SES neighborhoods. However, the study respondents tend to be clustered in high ethnic enclave, high SES neighborhoods. Several cases and controls live in these red “upward segregation” areas. However, several are also scattered in high enclave, low SES neighborhoods and in low enclave, high SES neighborhoods. It appears that very few respondents live in low enclave, low SES neighborhoods. It is difficult to visually identify from this map any differences in the residential location of cases versus controls in relation to neighborhood ethnic enclave and SES.

Table 5A.S presents the logistic regression results for the association between living in an ethnic enclave and odds of having breast cancer, moderated by neighborhood SES. The table shows that there was a significant interaction between living in an API ethnic enclave and neighborhood SES (Table 5A.S: OR = 6.53, $p<0.01$).

====== Table 5A.S about here ======

====== Figure 5.10 about here ======

This interaction is shown in Figure 5.10. This graph shows the predictive probability of having breast cancer on the interaction between living in an ethnic enclave and neighborhood SES. The vertical lines represent the 95% confidence intervals for the predictive probabilities. AANHPI women who live in high neighborhood SES ethnic enclaves have the highest risk of breast cancer. This is in contrast to AANHPI women living in high neighborhood SES neighborhoods that are not ethnic enclaves. These women had the lowest risk of breast cancer. AANHPI women living in low SES neighborhoods had lower risk on average than those living in high SES neighborhoods. However, examining the confidence intervals, these low SES neighborhoods were not significantly different by ethnic makeup.

Additional analyses were performed to determine whether other factors may help to explain the association between ethnic enclaves, neighborhood SES, and breast cancer. In addition to the sociodemographic characteristics, neighborhood characteristics, and breast cancer risk factors already in the model, other covariates were added one at a time to see whether the main association became null. This would indicate possible mediation by the added variable. These possible explanatory covariates included neighborhood stressors (e.g. neighborhood safety, neighborhood problems, collective efficacy), health behaviors (e.g. physical activity, alcohol use, etc.), and dietary factors (e.g. cooking at home, shopping at Asian markets, eating

Asian meals, etc.). The significant association between living in an ethnic enclave, neighborhood SES, and breast cancer remained after the inclusion of these variables. These additional analyses are not shown.

Supplemental Analysis: Neighborhood SES moderates the association between living in an ethnic enclave and health behaviors

Tables 5B.S, 5C.S, 5D.S, 5E.S, 5F.S, and 5G.S tested whether neighborhood SES moderated the associations between living in an ethnic enclave and health behaviors. As shown in these tables, neighborhood SES was not a significant moderator for any of the health behaviors. In these tables, the alpha level of significance was adjusted using the Šidák correction for multiple comparisons so that p-value<0.009 was considered significant. Neighborhood SES may moderate the association between living in an ethnic enclave and body mass index, but this was only significant at p-value<0.05.

====== Tables 5B.S through 5G.S about here ======

AIM 2 DISCUSSION

This aim sought to determine whether living in an ethnic enclave was associated with lower risk of breast cancer. GIS mapping did not reveal differences between the geographic location of the residences of AANHPI women with breast cancer and the residences of those without breast cancer. Furthermore, bivariate analyses did not show any significant differences between having breast cancer and not having breast cancer by living in an ethnic enclave. However, the regression results found a significant association between living in an ethnic enclave and having breast cancer after controlling for covariates, in the opposite direction as expected. AANHPI women living in ethnic enclaves were more likely to have breast cancer than women not living in ethnic enclaves in this sample, after controlling for sociodemographic characteristics, individual-level socioeconomic status, and other breast cancer risk factors. This association did not vary by nativity status. Neighborhood SES was independently associated with breast cancer, such that living in a high SES neighborhood was associated with twice the risk of having breast cancer as living in a low SES neighborhood. This is consistent with prior research showing that women living in higher SES neighborhoods had greater risk of breast cancer than those living in lower SES neighborhoods (Palmer et al., 2012; Robert et al., 2004a; Yost et al., 2001).

Additional analysis tested whether the association between living in ethnic enclaves and breast cancer risk varied by neighborhood SES. Previous studies of breast cancer and neighborhood social characteristics found breast cancer disparities by both living in ethnic enclaves and neighborhood SES (Keegan, John, et al., 2010; Keegan, Quach, et al., 2010; Kuo, Mobley, & Anselin, 2011). The current analysis revealed that neighborhood SES did moderate the association, such that women living in high SES ethnic enclaves had the highest probability of having breast cancer, while those living in high SES neighborhoods that were not ethnic enclaves had the lowest probability of having breast cancer.

In previous studies, higher neighborhood SES has been associated with greater risk of breast cancer, especially among white women (Robert et al., 2004b; Webster et al., 2008). The same pattern has been found among African American women and Hispanic women (Keegan, John, et al., 2010; Palmer et al., 2012), although the association seems to be weaker than for white women. These studies stipulate that these positive associations are likely due to reproductive factors, including parity and age at first birth. The current study shows that for AANHPI women, there also seems to be an association between high neighborhood SES and probability of having breast cancer, independent of individual-level socioeconomic status and reproductive factors. Furthermore, neighborhood ethnic makeup had an interactive effect with neighborhood SES, such that AANHPI women who lived in high SES, high enclave neighborhoods had the highest probability of having breast cancer, controlling for all else.

Prior research on Hispanics in California found that the associations between breast cancer incidence, neighborhood SES, and ethnic enclaves for Hispanics were different (Keegan, John, et al., 2010). Hispanic women living in high SES, low enclaves had the highest breast cancer incidence, while those living in low SES, high enclaves had the lowest. This finding seemed to suggest that for Hispanics, a high SES, low enclave neighborhood represents greater spatial assimilation in the US cultural context, leading to higher breast cancer incidence. In other words, greater spatial assimilation causes higher incidence of breast cancer for Hispanics.

Applying this same logic to the current research, is it possible that greater spatial assimilation causes higher incidence of breast cancer for AANHPIs? Contrary to what was expected, AANHPI women living in high SES, high ethnic enclaves had the highest risk of breast cancer. Nevertheless, it is possible that for high SES, high ethnic enclaves represent highly assimilated neighborhoods for AANHPIs living in the San Francisco Bay Area. Many AANHPIs may choose to live around co-ethnics, given the ability to do so. For example, living in a neighborhood like Palo Alto, with a fairly high Asian population that also has high neighborhood SES, may represent the pinnacle of "successful" assimilation.

This reasoning coincides with segmented assimilation theory. Classic assimilation theory assumes that immigrants predictably experience upward mobility trajectories, moving out of poor ethnic enclaves and into wealthier dominant-culture neighborhoods (Gordon, 1964). Alternatively, segmented assimilation theory suggests three possible pathways of spatial assimilation for immigrants: 1) traditional integration into the mainstream (i.e. white) middle class neighborhoods; 2) downward assimilation into neighborhood disadvantage due to segregation and discrimination; and 3) upward mobility by benefiting from living and working in ethnically homogenous communities (Jensen & Chitose, 1994; Portes & Zhou, 1993). Some of the immigration literature has been critical of the classic assimilation idea that spatial assimilation means that ethnic minorities tend to, or desire to, move to areas where more whites live over time (Portes & Rumbaut, 2014; Wright, Ellis, & Parks, 2005). While this may be true for some ethnic minorities, or in different places and times, it may be the case that assimilation for AANHPIs does not mean moving to a neighborhood with higher proportions of whites, but being able to have the choice to co-reside with other AANHPIs who have "made it" in terms of social and economic status. Some recent studies have examined the segmented assimilation theory in relation to health (Akresh et al., 2016; Frank, Cerda, & Rendon, 2007; Xie & Greenman, 2011), and have in general found significant interactions between neighborhood disadvantage and level of assimilation on health. These studies found that the associations between assimilation and health depend on neighborhood context. Specifically, neighborhood SES and neighborhood ethnic composition had independent and interacting effects on health. Furthermore, the spatial assimilation may have different effects on health for different immigrant groups, such as Latinos versus Asians (Xie & Greenman, 2011).

The findings of this study support segmented assimilation theory, but applies it to breast cancer for AANHPI women. In accordance with segmented assimilation theory, the findings of this study suggest that for AANHPI women who live in the San Francisco Bay Area, living in an area of "upward mobility," represented by a high SES ethnic enclave, is associated with greater breast cancer risk. On the other hand, traditional integration into mainstream (i.e. white) neighborhoods with high SES is associated with lower breast cancer risk. While it is uncertain why these different types of neighborhood assimilation patterns are associated with different levels of breast cancer risk, this study supports the idea that the health effect of spatial assimilation varies by neighborhood SES. More research is needed to examine why this was the case. Additional analyses were performed in this study to determine what might explain how spatial assimilation was associated with breast cancer. Neighborhood social stressors and various dietary factors were tested, and none of these explained the association between high SES ethnic enclaves and greater odds of breast cancer. Therefore, there must be unmeasured factors influencing breast cancer risk among women living in these neighborhoods. It could be that women living in high SES ethnic enclaves are exposed to different kinds of chemical toxins than women living in high SES non-enclaves. These differences in chemical exposures may be due to differences in ambient pollution in these neighborhoods or various types of chemical products commonly used in these neighborhoods.

As mentioned earlier, living in an ethnic enclave seems to be more salient for breast cancer risk than neighborhood SES, but in opposite directions for Asians and Hispanics. Why would the associations between ethnic enclaves and health differ between Asians compared to Hispanics and other racial/ethnic groups? Research has shown that segregated neighborhoods look different for Blacks, Latinos, and Asians. For Blacks and Latinos, residential segregation is often associated with greater neighborhood disadvantage, including lower SES (Logan, 2011; Massey & Denton, 1993; Williams & Collins, 2001). On the contrary, Asian ethnic neighborhoods and non-Asian neighborhoods where Asian Americans live do not differ significantly in terms of social and socioeconomic resources (Walton, 2012). In other words, residential segregation of Asian Americans is not associated with concentrated social disadvantage. Furthermore, the relationships between neighborhood SES and health may differ based on neighborhood ethnic composition for Asians. Walton (2012) found that higher neighborhood-level education was associated with better self-rated health for Asian Americans, only in ethnic enclaves. Walton argued that this result means that in ethnic neighborhoods, co-ethnic individuals are able to take greater advantage of socioeconomic resources because of the ethnic nature of neighborhood resources. This finding is similar to the current study, since neighborhood SES seems to matter most for breast cancer risk in ethnic enclaves.

It is also important to note that the methods used in the current study were different than previous research examining breast cancer incidence and ethnic enclaves for Hispanics (Keegan, John, et al., 2010). The current study did not examine incidence rates for breast cancer among AANHPIs. Instead, regression models were used to examine associations between breast cancer prevalence and living in ethnic enclaves in a case control sample, controlling for other factors potentially related to breast cancer risk. This is different than the Keegan, John, et al. (2010) study that calculated age-adjusted incidence rates of breast cancer among Hispanics in California. The current study did not find significant bivariate associations between neighborhood residential location and having breast cancer. Significant associations were only found after controlling for other breast cancer risk factors, sociodemographic characteristics, and other neighborhood characteristics. Therefore, this study revealed an association between ethnic enclaves, neighborhood SES, and having breast cancer above and beyond other known breast cancer risk factors. A study examining incidence rates of breast cancer among AANHPIs in ethnic enclaves across the state of California would be more comparable to the Keegan, John, et al. (2010) study. Furthermore, regression analyses may be used in future studies of breast cancer and ethnic enclaves among Hispanics to find factors that explain the association between living in ethnic enclaves and breast cancer incidence.

The results of this study were mixed for the associations between living in ethnic enclaves and health behaviors. AANHPI women living in ethnic enclaves engaged in less physical activity. Other studies have similarly found lower levels of physical activity in ethnic enclaves for Asians and Hispanics (Brewer & Kimbro, 2014; Osypuk et al., 2009) . There are possible social environment and built environment explanations for this association between neighborhood ethnic context and physical activity. The social environment in neighborhoods involves processes such as collective efficacy, social capital, and social ties. These factors have shown to be positively associated with physical activity levels (Kimbro, Brooks-Gunn, & McLanahan, 2011; Legh-Jones & Moore, 2012). Research has also shown that people living in neighborhoods with higher racial/ethnic minority composition report lower levels of these social resources, such as collective efficacy, collective socialization, and social ties (Burchfield & Silver, 2013; Franzini et al., 2010). It is therefore plausible that if people living in ethnic enclaves have fewer social resources related to physical activity, then they will have lower physical activity rates. However, more research is needed to confirm whether or not these social factors help to explain the association between ethnic enclaves and physical activity. In terms of the built environment, ethnic enclaves may not be places that are conducive to physical exercise due to dense traffic, lack of recreational spaces, or poor physical infrastructure. To provide an example, Osypuk et al. (2009) found that for Hispanics, the association between living in an ethnic enclave and lower physical activity was fully mediated by neighborhood walkability. This dissertation research examines the role of the built environment in mediating the association between living in an ethnic enclave and health in Chapter 6.

While this study found that living in ethnic enclaves was detrimental for physical activity levels, on the other hand, living in ethnic enclaves may be protective against high alcohol consumption. Again, this may be due to social or built environment features of the neighborhood. Possibly, living in ethnic enclaves reinforces social or cultural norms that discourage heavy drinking (Bécares, Nazroo, & Stafford, 2011). Additionally, research shows that concentration of alcohol outlets in a neighborhood is associated with higher alcohol consumption (Bryden, Roberts, McKee, & Petticrew, 2012; Kavanagh et al., 2011; Young, Macdonald, & Ellaway, 2013). Therefore, if ethnic enclaves have fewer alcohol outlets, this may help to explain the association between living in an ethnic enclave and lower alcohol use. Chapter 6 explores this further.

Living in ethnic enclaves was not associated with other health behaviors such as diet for AANHPIs, nor was it associated with BMI. This is contrary to prior evidence that living in ethnic enclaves was associated with better diet quality (Osypuk et al., 2009) and lower BMI (Nobari et al., 2013) among Chinese. However, other research has shown that living in a neighborhood with high Asian concentration is not significantly associated with lower BMI among Asians (Kirby, Liang, Chen, & Wang, 2012). More research is needed to elucidate the associations between ethnic enclaves, diet, and BMI for AANHPIs in general. Overall, these results indicate that living in ethnic enclaves can be both impeding and promoting of healthy behaviors.

One may predict that AANHPI women living in high SES, high enclave neighborhoods might exhibit worse health behaviors since these women had the highest probability of having breast cancer. But, among the health behaviors examined in this study, there were no significant differences in health behaviors by neighborhood SES and ethnic enclave. There are likely other factors associated with living in a high SES, high enclave that increased breast cancer incidence for AANHPI women that were not measured in the current study. For example, these women may have been exposed to higher levels of environmental toxins in their neighborhoods. Prior studies have shown that AANHPI communities have higher levels of exposure to cancer causing environmental toxins (Morello-Frosch & Lopez, 2006; Morey, 2014).

Importantly, the current study does support the suggestion that ethnic enclaves are consummately healthier places to live in than non-ethnic neighborhoods (Dubowitz, Subramanian, Acevedo-Garcia, Osypuk, & Peterson, 2008; Lê-Scherban, Albrecht, Osypuk, Sánchez, & Diez Roux, 2014; Patel, Eschbach, Rudkin, Peek, & Markides, 2003). Instead, this study aligns with prior research that shows both positive and negative effect of living in an ethnic enclave on health (Markides & Eschbach, 2011; Osypuk et al., 2009). Furthermore, this study contributes to a broader discussion of the role of neighborhood segregation and health, showing that the effects of racial/ethnic segregation vary by racial/ethnic group (Kershaw, Albrecht, & Carnethon, 2013; Mair et al., 2010; Mason et al., 2011). Much of the prior research on immigrant enclaves and health have focused on Hispanic enclaves (Akresh et al., 2016; Craddock & Folse, 2016; Do et al., 2007; Keegan, John, et al., 2010; Lê-Scherban et al., 2014). There is a growing body of literature examining how AANHPI health is affected by ethnic enclaves (Lim, Yi, Lundy De La Cruz, & Trinh-Shevrin, 2017; Nobari et al., 2013; Walton, 2015), but much more research is needed.

The current research found that, contrary to expectation, living in an AANHPI ethnic enclave increased risk for breast cancer. Living in an AANHPI ethnic enclave had positive and negative associations with health behaviors. Ethnic enclaves have different health implications for AANHPIs than for other racial/ethnic groups. From a segmented assimilation perspective (Portes & Zhou, 1993), it seems that upward mobility of AANHPIs, as represented by living in high SES neighborhoods in the San Francisco Bay Area that have high ethnic concentration, leads to the greatest breast cancer risk. On the other hand, traditional assimilation into high SES neighborhoods with low ethnic concentration appears to be protective against breast cancer for AANHPIs. More research is needed to determine the mechanisms behind these associations.

These findings must be interpreted with some limitations in mind. Notably, this study examines the relationship between ethnic enclaves and breast cancer risk only in the San Francisco Bay Area, an area known to have higher proportions of AANHPIs and higher neighborhood socioeconomic status, compared to other areas of California and of the US in general. The findings discussed above may only pertain to this area of northern California, and not to other areas of the state or the country. Also, there may not have been enough variation in neighborhood variables to see more significant associations between neighborhood social characteristics and breast cancer risk.

This research is the first to my knowledge to study the associations between ethnic enclaves and breast cancer risk specifically for AANHPIs. It reveals that there are likely different mechanisms between living in ethnic neighborhoods and health outcomes for AANHPIs compared to other racial/ethnic groups. Future studies can explore the nature of AANHPI ethnic enclaves in greater depth, to reveal how where AANHPIs live in the US can influence their health.

CHAPTER 6: AIM 3 RESULTS

The first goal of Aim 3 was to determine whether various aspects of the built environment were associated with breast cancer risk. The second goal was to determine whether these aspects of the built environment explained any of the associations between living in an ethnic enclave and breast cancer risk.

The first section of this chapter describes the built environment of the ethnic enclaves that respondents lived in using bivariate descriptive statistics. The built environment included the restaurant environment, retail food environment, number of liquor stores, number of recreational facilities, number or parks, walkability, and traffic density. Next, this chapter provides the results of the regression analyses that test whether these features of the built environment were associated with breast cancer risk. Lastly, the results are provided for analyses that test whether the built environment mediated the association between living in an ethnic enclave and breast cancer risk.

The results of the regression analyses are organized by dependent variable. The dependent variables included having breast cancer and breast cancer-related health behaviors. For the health behaviors, I did not test whether every aspect of the built environment was associated with every behavior. Instead, I only tested the associations that were plausibly related. For example, I tested whether the restaurant food environment was associated with fruit and vegetable consumption, but I did not test whether the restaurant food environment was associated with physical activity. Similarly, I tested whether the number of recreational facilities was associated with physical activity, but I did not test whether the number of recreational facilities was associated with alcohol use. The tests of mediation were only conducted when living in an ethnic enclave was significantly associated with the outcome. Therefore, mediation by the built environment was only tested for the following outcomes: having breast cancer, strenuous physical activity, and alcohol use (see Chapter 5, Aim 2 results).

DESCRIPTIVE ANALYSIS: THE BUILT ENVIRONMENT IN ETHNIC ENCLAVES

Table 3.2 provides the correlations between all of the continuous and dichotomous variables for the entire Asian CHI case control sample. Point biserial correlations were calculated between the dichotomous high API enclave variable and the continuous built environment variables. These correlations show that high ethnic enclaves differed from low ethnic enclaves in regards to all of the measures of the built environment with a statistical significance of p=0.001 or lower. People living in high API enclaves had significantly poorer food environments, with a higher ratio of fast food restaurants to other restaurants and foot outlets (REI) (ρ=0.174) and a higher ratio of convenience and fast food outlets to supermarkets and farmers markets (RFEI3) (ρ=0.165). Those living in high API enclaves also had more liquor stores in their neighborhoods (ρ=0.129). High API enclaves also had higher traffic density (ρ=0.183), which one may assume would be worse for health and safety. However, high API enclaves were not entirely unhealthy places to live. Those living in high enclaves had more recreational facilities (ρ=0.126), more parks (ρ=0.172), and better walkability scores (alpha index: ρ=0.138; gamma index: ρ=0.146) in than those living in low enclave neighborhoods. Although all of the correlations mentioned above were statistically significant, the magnitudes of the correlations were low: none of the correlation coefficients were above 0.2.

BREAST CANCER

<u>Hypothesis 6: Features of the built environment are associated with breast cancer risk</u>

In Table 3.2, the point biserial correlations between the features of the built environment and having breast cancer were all low—below 0.2—even though some of the correlations were statistically significant. Fewer liquor stores (ρ=-0.124), fewer recreational facilities (ρ=0.133), worse walkability scores (alpha index: ρ=-0.144; gamma index: ρ=-0.144), and lower traffic density (ρ=0.119) were all significantly correlated with having breast cancer. Features of the food environment (REI: ρ=-0.035; RFEI3: ρ=-0.035) and number of parks in one's neighborhood (ρ=-0.060) were not significantly correlated with having breast cancer.

Tables 6A.1 through 6A.8 provide the logistic regression analyses that tested whether features of the built environment were associated with having breast cancer, controlling for individual- and neighborhood-level sociodemographic characteristics and other breast cancer risk factors. None of the associations between features of the built environment and breast cancer risk were significant, after using the Šidák correction for multiple comparisons (α=0.006). For example, REI was not significantly associated with odds of having breast cancer, accounting for covariates (Table 6A.1: OR=0.42, p>0.05).

====== Tables 6A.1 through 6A.8 about here ======

Hypothesis 7: Features of the built environment explain some of the association between living in an ethnic enclave and breast cancer risk

Given that none of the features of the built environment were significantly associated with breast cancer risk after accounting for living in a high ethnic enclave and covariates, it was not possible that any of the features of the built environment would significantly mediate the association between living in a high ethnic enclave and having breast cancer. Nevertheless, Tables 6B.1 through 6B.8 provide the decomposed effects of living in an ethnic enclave on breast cancer, mediated by features of the built environment, using the Kohler, Holm, and Breen (KHB) method in STATA (Kohler et al., 2011). For each feature of the built environment, the total, direct, and indirect effects are provided. The total effect is the magnitude of the association between living in an ethnic enclave and having breast cancer. The direct effect is the unmediated effect of living in an ethnic enclave on having breast cancer, taking the built environment into account. The indirect effect is the magnitude of the pathway between living in an ethnic enclave and breast cancer that is mediated by the feature of the built environment. If the indirect effect is statistically significant, then this indicates that there is probable mediation occurring.

====== Tables 6B.1 through 6B.8 about here ======

As seen in the tables, none of the indirect effects were statistically significant. For example, Table 6B.1 shows the decomposed effect of living in a high ethnic enclave on breast cancer risk that is potentially mediated by REI (the ratio of fast food restaurants to total number of restaurants). The indirect effect is small and non-significant, indicated no mediation by REI (b=-0.03, p=0.54). The direct/unmediated effect of living in a high ethnic enclave on breast cancer risk (b=1.00, p=0.01) is essentially the same as the total effect of living in a high ethnic enclave on breast cancer risk (b=0.97, p=0.01). This and the other KHB analyses confirm that the features of the built environment did not mediate the association between living in an ethnic enclave and having breast cancer. The total effect of living in an ethnic enclave on having breast cancer remained the same across the models with the inclusion of the built environment variables, such that living in a high ethnic enclave was associated with about 2.6 times higher odds of breast cancer than living in a low ethnic enclave.

Other covariates associated with having breast cancer

Across the logistic regression models, some covariates were consistently associated with having breast cancer. Older age was associated with higher odds of breast cancer (in Table 6A.1: OR=7.12, p<0.001), unsurprisingly. Being a homeowner was also associated with about four times greater odds of breast cancer, compared to non-homeowners (in Table 6A.1: OR=4.18, p<0.001). Surprisingly, women with less than high school education had over three times the odds of having breast cancer as college graduates (in Table 6A.1: OR=3.04, p<0.05), accounting for all else. Women who lived longer in their current address had lower odds of having breast cancer (in Table 6A.1: OR=0.95, p<0.001). Living in a high ethnic enclave was associated with about 2.7 times greater odds of having breast cancer compared to those living in a low ethnic enclave, however this association was only marginally significant (p<0.05) when using the Šidák correction for multiple comparisons (in Table 6A.1: OR=2.72, p<0.05).

PHYSICAL ACTIVITY

Hypothesis 6: Features of the built environment are associated with physical activity

Physical activity levels were hypothesized to be associated with the number of recreational facilities, number of parks, walkability (i.e. alpha and gamma measures), and traffic density. Examining the bivariate associations in Table 3.3, none of these features of the built environment were significantly correlated with moderate or strenuous physical activity.

Tables 6C.1 through 6C.5 and Tables 6D.1 through 6D.5 provide the regression models testing whether the features of the built environment were associated with moderate and strenuous physical activity, respectively. In these tables, Model 1 provides the bivariate association between the built environment and physical activity. Model 2 includes individual-level covariates. Model 3 is the full model which additionally includes neighborhood-level covariates. These tables show that after accounting for covariates, none of the features of the built environment were significantly associated with moderate or strenuous physical activity. For example, number of recreational facilities was not significantly associated with moderate physical activity, after accounting for covariates (in Table 6C.1, Model 3: b=-0.04, p>0.05).

====== Tables 6C.1 through 6C.5 about here ======

====== Tables 6D.1 through 6D.5 about here ======

<u>Hypothesis 7: Features of the built environment explain some of the association between living in an ethnic enclave and less physical activity</u>

Given that none of the associations between features of the built environment and physical activity were significant, these same variables could not be mediators of the association between living in a high ethnic enclave and strenuous physical activity. To emphasize this, the mediation analyses are provided in Table 6D.6. The first model in Table 6D.6 shows the association between living in a high ethnic enclave and strenuous physical activity, accounting for individual- and neighborhood-level covariates. Models 2 through 6 add the following features of the built environment one at a time: number of recreational facilities, number of parks, alpha measure, gamma measure, and traffic density. If any of the features of the built environment were mediators, one would expect the coefficient for living in a high API enclave to decrease in magnitude compared to the same coefficient in Model 1, once the built environment variable was added. In Models 2 through 6, the coefficient for living in a high API enclave remained the same ($b=-0.29$, $p<0.01$) after the inclusion of the built environment variables. Additionally, none of the coefficients for the built environment variables were significant. Therefore, features of the built environment did not mediate the association between living in a high ethnic enclave and lower strenuous physical activity.

====== Table 6D.6 about here ======

<u>Other covariates associated with physical activity</u>

Other covariates were significantly associated with physical activity across regression models. US-born women were more physically active than their foreign-born counterparts, engaging in about 1.3 more hours per week of moderate physical activity (in Table 6C.1, Model

3: b=1.27, p<0.01) and 0.2 more hours per week of strenuous physical activity (in Table 6D.1, Model 3: b=0.40, p<0.01), accounting for all else. In addition, women with lower levels of education were more physically active. Compared to women with a college degree, women with a high school degree or less education engaged in over 2 more hours per week of moderate physical activity (in Table 6C.1, Model 3: b=2.24, p<0.001) and 0.3 more hours per week of strenuous physical activity (in Table 6D.1, Model 3: b=0.57, p<0.01), accounting for all else. Consistent with the previous findings, living in a high ethnic enclave was associated with lower levels of strenuous physical activity compared to those living in a low ethnic enclave. However, the magnitude of this difference in strenuous physical activity was not large. Those living in a high ethnic enclave engaged in about 0.1 fewer hours per week of strenuous physical activity than those living in a low ethnic enclave (in Table 6D.1, Model 3: b=-0.29, p<0.01), accounting for all other individual- and neighborhood-level covariates.

ALCOHOL USE

<u>Hypothesis 6: Features of the built environment are associated with alcohol use</u>

Alcohol use was hypothesized to be associated with number of liquor stores in one's neighborhood. In Table 3.3, number of liquor stores in one's neighborhood was not significantly correlated with alcohol consumption (ρ=0.078, p=0.106). Table 6E.1 presents the negative binomial regression analysis that tests whether number of liquor stores is associated with alcohol consumption after accounting for individual- and neighborhood-level covariates. The results are presented in a single full model, since coefficients cannot be compared across negative binomial regression models (Aneshensel, 2013; Cameron & Trivedi, 1998). This table shows that, after accounting for covariates, number of liquor stores in one's neighborhood is not significantly associated with alcohol consumption (Table 6E.1: b=-0.011, p>0.050.

====== Table 6E.1 about here ======

Hypothesis 7: Features of the built environment explain some of the association between living in an ethnic enclave and less alcohol use

Number of liquor stores in one's neighborhood cannot mediate the association between living in an ethnic enclave and lower alcohol use given the prior results. To confirm this, Table 6E.2 presents the decomposed effects of living in an ethnic enclave on weekly alcohol use, mediated by the number of liquor stores. Using the `paramed` command in STATA for testing mediation using negative binomial regression (Emsley & Liu, 2013), the results show that the indirect effect (i.e. mediated effect) was not significant (b=1.01, p=0.46). The total effect of living in a high ethnic enclave on alcohol use remained unchanged, such that living in a high ethnic enclave was associated with drinking half a drink less of alcohol per week compared to those living in a low ethnic enclave (b=0.52, p=0.01). In sum, neighborhood liquor stores did not mediate the association between living in a high ethnic enclave and weekly alcohol use.

====== Table 6E.2 about here ======

Other covariates associated with alcohol use

Other covariates were significantly associated with alcohol use in Table 6E.1. Women in the "other AANHPI" ethnicity category drank about 0.9 more drinks per week on average than Chinese women, accounting for all else (b=0.85, $p<0.01$). Those who participated in the survey in Tagalog drank 1.8 drinks per week less on average than those who took the survey in English in the full model (b=-1.82, $p<0.01$). US-born AANHPI women drank 0.7 drinks per week more than foreign-born AANHPI women (b=0.72, $p<0.01$). Compared to women with a college degree, those with a high school degree or less education drank about 1 alcoholic drink less per week (b=-1.04, $p<0.05$). Those living in a metropolitan suburb drank 0.7 fewer drinks per week than those living in metropolitan urban areas ($b=-0.65$, $p<0.05$). Lastly, those living in a high API ethnic enclave drank about 0.6 fewer drinks per week than those not living in an ethnic enclave ($b=-0.55$, $p<0.01$).

FRUIT AND VEGETABLE CONSUMPTION

Hypothesis 6: Features of the built environment are associated with fruit and vegetable consumption

Fruit and vegetable consumption were hypothesized to be associated with the neighborhood food environment. Two variables were used to measure the built environment in regards to food. The first was the restaurant environment index (REI), which was the ratio of fast food restaurants to total number of other restaurants and food outlets. The second was the retail food environment 3 (RFEI3), which was the ratio of the number of fast food restaurants and convenience stores to the total number of supermarkets and farmers markets. In Table 3.3, fruit and vegetable consumption were not significantly associated with either the REI (fruit: $\rho=0.019$, $p>0.05$; vegetable: $\rho=-0.016$, $p>0.05$) or the RFEI3 (fruit: $\rho=-0.049$, $p>0.05$; vegetable: $\rho=0.064$, $p>0.05$).

Tables 6F.1, 6F.2, 6G.1, and 6G.2 tested the associations between the food environment variables and fruit and vegetable consumption. The first model tested the bivariate association. Model 2 included individual-level covariates, and Model 3 included neighborhood-level covariates. The tables show that in the full models, the food environment variables were not significantly associated with either fruit or vegetable consumption. For example, fruit consumption was not significantly associated with REI score (Table 6F.1, Model 3: $b=2.30$, $p>0.05$).

====== Tables 6F.1 and 6F.2 about here ======

====== Tables 6G.1 and 6G.2 about here ======

Other covariates associated with fruit and vegetable consumption

After including individual- and neighborhood-level covariates, greater fruit consumption was associated with older age, such an age of 10 years older was associated with eating fruits on average 0.8 times per week more often (in Table 6F.1, Model 3: b=0.77, p<0.025). Filipina women ate vegetables 2 times per week less often than Chinese women (in Table 6G.1, Model 3: b=-2.25, p<0.025), accounting for all else. None of the other covariates were significantly associated with fruit or vegetable consumption.

BODY MASS INDEX (BMI)

Hypothesis 6: Features of the built environment are associated with BMI

BMI was hypothesized to have associations with the food environment, number of recreational facilities, number of parks, walkability, and traffic density in one's neighborhood. In Table 3.3, BMI was not significantly correlated with any of these features of the built environment.

Tables 6H.1 through 6H.7 tested whether features of the built environment were associated with BMI. Model 1 provides the bivariate association. Model 2 includes the individual-level covariates. Model 3 adds the neighborhood-level covariates. In the tables, none of the features of the built environment were significantly associated with BMI, accounting for the covariates. For example, REI was not significantly associated with BMI, accounting for all individual- and neighborhood-level covariates (Table 6H.1, Model 3: b=0.58, p>0.05).

====== Tables 6H.1 through 6H.7 about here ======

<u>Other covariates associated with BMI</u>

Other covariates were significantly associated with BMI. Women in the other AANHPI ethnicity category had higher BMIs on average, compared to Chinese women, by about 2 points on the BMI scale after controlling for all else (in Table 6H.1, Model 3: $b=1.88$, $p<0.007$). In addition, US-born women had BMIs over 2 points higher than foreign-born women, accounting for all else (in Table 6H.1, Model 3: $b=2.15$, $p<0.007$). None of the other individual- or neighborhood-level covariates were significantly associated with BMI.

AIM 3 DISCUSSION

This aim sought to determine whether features of the built environment were associated with breast cancer risk, and whether the built environment explained the association between living in a high ethnic enclave and breast cancer risk. This study found that unhealthy food availability, number of liquor stores, number of recreational facilities, number of parks, walkability, and traffic density in participants' neighborhoods were not associated with breast cancer. Moreover, these same features were not significantly associated with health behaviors. Physical activity levels were not associated with number of recreational facilities, number of parks, walkability, or traffic density. Alcohol consumption was not significantly associated with number of liquor stores in the neighborhood. Fruit and vegetable consumption was not significantly associated with the availability of unhealthy restaurants or retail food outlets in the neighborhood. Additionally, BMI was not associated with the food environment, number of recreational facilities, number of parks, walkability, or traffic density in the neighborhood. None of the features of the built environment, therefore, could explain the association between living in an ethnic enclave and breast cancer, nor could they explain the associations between living in an ethnic enclave and strenuous physical activity and between living in an ethnic enclave and alcohol use.

There was some initial evidence suggesting that an unfavorable built environment might be related to having breast cancer. For example, women with breast cancer tended to live in neighborhoods with slightly fewer recreational facilities and worse walkability than women without breast cancer. On the other hand, some seemingly healthy aspects of the built environment also seemed like they might have been associated with having breast cancer. Women with breast cancer tended to live in neighborhoods with slightly fewer liquor stores and lower traffic density. However, none of these bivariate associations were statistically significant in regression models, and were likely spurious. Given that these correlations were weak, there is no strong evidence for the built environment to be associated with having breast cancer.

Associations between living in a high ethnic enclave and breast cancer risk were not explained by features of the built environment in this study. This is despite the fact that the neighborhood built environment features differed between women living in high ethnic enclaves and low ethnic enclaves. The neighborhoods of women living in high ethnic enclaves had worse food environments (i.e. greater availability of fast foods and convenience stores), more liquor stores, and higher traffic density. On the other hand, women living in high ethnic enclaves also had more recreational facilities, parks, and better walkability in their neighborhoods. Many of these findings about the built environment in ethnic enclaves in the current study were in the opposite direction as prior research on immigrant enclaves. Past research found healthier food environments, fewer recreational facilities, and worse walkability in immigrant enclaves (Moore, Diez Roux, Evenson, McGinn, & Brines, 2008; Osypuk et al., 2009). This perhaps indicates that there are vital differences between the ethnic enclaves in the San Francisco Bay Area in this study and in other study areas, for different populations. Many of the AANHPI ethnic enclaves in this study tended to also have high neighborhood SES, which may reflect this particular area that is known to have high percentages of high income and AANHPI residents, compared to other parts of the state and country. The differences in built environment between high and low ethnic enclaves may have also partly been due to level of urbanicity in this study. About 40% of high ethnic enclaves were in metropolitan urban areas, as compared to 20% of low ethnic enclaves. More low enclaves were in non-metropolitan/rural areas (19%) compared to high ethnic enclaves (1%). Despite these built environmental differences between high and low ethnic enclaves in this study, these differences did not help to explain disparities in breast cancer, strenuous physical activity, or alcohol use by living in an ethnic enclave.

There may be other explanations for why living in an ethnic enclave was associated with having breast cancer, lower strenuous physical activity, and lower alcohol consumption. One hypothesis is that the social attitudes, norms, and behaviors in ethnic enclaves may have had more impact on breast cancer risk. For example, a social norm to delay childbirth until older ages in high ethnic enclave, high socioeconomic status neighborhoods may increase breast cancer risk among those residents. Another possibility is that other environmental exposures, such as chemical toxins, in high ethnic enclaves are associated with breast cancer risk. Future studies may explore these possible explanations for why living in an ethnic enclave is associated with having breast cancer and health behaviors.

One explanation for the lack of association between the built environment and breast cancer risk in this study is the timing and nature of the measures of the built environment. The built environment variables were based on the respondents' addresses either at the time of interview (controls) or time of cancer diagnosis (cases). Although the regression models control for length of time lived at current address, it is possible that a length of “exposure” to a neighborhood environment for one, or even five years prior to interview had little impact on having breast cancer. Life course perspective suggests that cancer risk may be determined at critical periods of life (e.g. adolescence) and accumulates over time (Diez Roux & Mair, 2010; Elder, 1998). Unfortunately, having the respondents’ most recent address is not indicative of prior neighborhood environments that people were exposed to throughout their life spans. It is possible that prior exposures in early life to neighborhood environments did have an impact on later breast cancer diagnosis, but this could not be tested with the current dataset.

Nevertheless, it was surprising that none of the features of the built environment were associated with health behaviors or BMI, as expected. Prior research has often linked the built environment to health behaviors. Studies have found significant associations between the food environment and diet (Smith, Cummins, Clark, & Stansfeld, 2013; Wang, Cubbin, Ahn, & Winkleby, 2008), between walkability and physical activity (Arvidsson, Kawakami, Ohlsson, & Sundquist, 2012; Carlson et al., 2012; Siqueira Reis, Hino, Ricardo Rech, Kerr, & Curi Hallal, 2013), between access to recreational spaces and physical activity (Cerin et al., 2013; Ranchod, Diez Roux, Evenson, Sánchez, & Moore, 2014; Richardson, Pearce, Mitchell, & Kingham, 2013), and between alcohol outlets and alcohol consumption (Kavanagh et al., 2011; Paschall, Grube, Thomas, Cannon, & Treffers, 2012; Young et al., 2013). Other studies have found BMI to be associated with a range of built environment features, including food availability, walkability, etc. (Carroll-Scott et al., 2013; Casagrande et al., 2011; Wen & Maloney, 2011). Yet, several studies have failed to find associations between the built environment and health (An & Sturm, 2012; Hirsch et al., 2014; Nichol, Janssen, & Pickett, 2010). In addition, several review articles have noted that the evidence linking the built environment and health has been inconsistent, with some articles finding associations that are null or in the opposite direction as expected (Bryden et al., 2012; Caspi, Sorensen, Subramanian, & Kawachi, 2012; Mackenbach et al., 2014; O. Ferdinand, Sen, Rahurkar, Engler, & Menachemi, 2012; Van Cauwenberg et al., 2011). This may be due to differences in built environment measures, population groups, or geographical areas. More research is needed to confirm whether the features of the built environment impact health and health behaviors, and whether these associations vary by geographic location or population characteristics.

There were limitations to the current study of the built environment and health. This study made the assumption that the health behaviors of women in the sample would be most affected by the neighborhood features in the immediate 1,600-meters surrounding the homes where they live. However, we know that people are likely are exposed to other neighborhoods where they spend time working, studying, or recreating (Perchoux, Chaix, Cummins, & Kestens, 2013). The measures of built environment used in this study are limited in not capturing past neighborhood exposures or environments beyond place of residence.

Ideally, studies examining the built environment effects on chronic diseases such as cancer should examine neighborhood exposures over longer periods of time in one's life, or at least during critical ages that are hypothesized to be sensitive periods for impacting disease risk. Future research would greatly benefit from longitudinal datasets that include ways to link respondents with neighborhood data at different points in life (Williams et al., 2016). In addition, research that incorporates more accurate measures of environmental exposures are warranted. Some studies have used global positioning system (GPS) tracking to gain a much more accurate view of the way individuals move through neighborhoods to (Kerr, Duncan, & Schipperjin, 2011; Perchoux et al., 2013). Such methods might be useful in garnering a more accurate picture of the environments that people are impacted by.

Overall, this study found that the built environment in neighborhoods was not associated with having breast cancer, health behaviors, or BMI. The neighborhood built environment features did vary slightly between women with and without breast cancer, and between high and low ethnic enclaves. These null findings may coincide with prior research showing no association, or mixed findings regards to the association between features of the built environment and health in general.

CHAPTER 7: FINAL DISCUSSION

The purpose of this dissertation was to identify how psychosocial stress and neighborhood environments were associated with breast cancer risk for AANHPI women in the San Francisco Bay Area. In doing so, this research explored potential associations between aspects of neighborhood contexts and breast cancer risk. The first aim examined the associations between individual- and neighborhood-level social stressors and breast cancer risk. The second aim examined how living in an AANHPI ethnic enclave was associated with breast cancer risk. The third aim examined how features of the neighborhood built environment were associated with breast cancer risk. Summaries of the main findings may be found in Figure 7A through Figure 7G, which present the overall dissertation results in a series of forest plots that are organized by outcome: having breast cancer, moderate physical activity, strenuous physical activity, alcohol use, fruit consumption, vegetable consumption, and BMI.

====== Figures 7A through 7G about here ======

Social stressors did not seem to be associated with having breast cancer. However, some social stressors were associated with health behaviors in the expected directions, such that higher individual and neighborhood stress was associated with lower physical activity and lower fruit and vegetable consumption. There were marginally significant associations between higher individual stress and higher BMI. Furthermore, there were some marginally significant interactions between individual and neighborhood social stressors that showed that in neighborhoods with greater collective efficacy, people experiencing higher individual stress were at greater risk for breast cancer than those with less individual stress. Similarly, AANHPI women living in neighborhoods with greater social resources seemed to have worse health behaviors—

including lower physical activity and higher alcohol consumption—as a results of individual social stressors.

These findings seem to suggest that having greater neighborhood social resources may not buffer the effects of individual stress, such as discrimination, as expected. This finding is contradictory to stress buffering models, which suggest that social support protects well-being when experiencing stressful events due to the availability of interpersonal resources (Cohen & Wills, 1985). On the contrary, AANHPIs with neighborhood social resources may experience worse health as a result of experiences stress related to discrimination and immigration. Perhaps a consequence of social connectedness among AANHPIs is that individual health responses to social stressors are more amplified, since these stressors represent anomalous experiences of being treated as an outsider. For example, an AANHPI woman may live in an area where neighbors are like-minded and support one another. However, when she travels beyond her own neighborhood for work or other daily activities, she encounters discrimination and is treated as a perpetual “outsider.” These unfair experiences are amplified because they are apart from the normative experiences of this woman. Therefore, her health is worsened as a result. This finding aligns with prior theoretical research on social capital that shows that, in certain cases, social resources may be detrimental to health (Carpiano, 2006). In the literature on immigrant groups, there is evidence of detrimental effects of social capital on health, showing that higher social capital among immigrants may lead to isolation and disempowerment (Portes, 1998; Portes & Sensenbrenner, 1993). This research adds to the understanding of the relationships between social resources and health for AANHPIs. Importantly, social resources such as collective efficacy may serve to amplify the negative effects of individual experiences of discrimination on health for this mostly immigrant group.

This dissertation found that breast cancer risk and health behaviors varied by living in an ethnic enclave. The directions of these associations were different, depending on the outcome. On one hand, living in an ethnic enclave was a risk factor for health, being associated with higher odds of breast cancer and lower strenuous physical activity. On the other hand, living in an ethnic enclave was protective, being associated with lower alcohol consumption.

The finding that AANHPI women living in high ethnic enclaves had higher odds of having breast cancer, compared to those living in low ethnic enclaves, was the opposite of what was originally hypothesized. This association did not vary by nativity, as expected. Neighborhood socioeconomic status was independently associated with odds of breast cancer, such that AANHPI women living in neighborhoods with high socioeconomic status had higher odds of breast cancer compared to women living in neighborhoods with lower socioeconomic status. This finding coincides with prior research showing that high neighborhood socioeconomic status is associated with higher breast cancer incidence (Keegan, John, et al., 2010; Palmer et al., 2012; Robert et al., 2004b). When testing whether neighborhood socioeconomic status moderated the association between living in a high ethnic enclave and odds of having breast cancer, the results showed that AANHPI women living in high socioeconomic status, high ethnic enclaves were at the greatest risk of having breast cancer. On the other hand, living in a low enclave, high socioeconomic status neighborhood was associated with the lowest breast cancer risk. These findings are different than what was expected based on prior research among Hispanics in California. Hispanic women living in high ethnic enclave, low socioeconomic status neighborhoods had the lowest breast cancer incidence, while those living in low ethnic enclave, high socioeconomic status neighborhoods had the highest incidence (Keegan, John, et al., 2010).

I suggest that the current findings on the association between ethnic enclaves, neighborhood socioeconomic status, and odds of having breast cancer among AANHPI women align with segmented assimilation theory (Portes & Zhou, 1993). Segmented assimilation theory posits that there are different ways in which immigrants assimilate to a US context. Traditional assimilation theory suggests that "successful" assimilation occurs when immigrants increase their social standing and integrate into the majority culture. However, downward mobility can occur when socioeconomic restraints are placed on immigrant groups, who are then forced to reside in segregated communities with few resources. Furthermore, immigrants can experience upward mobility by drawing on the resources within their immigrant communities and increase their social status, without completely integrating into a mainstream culture.

Applying these theoretical concepts, I conjecture that AANHPIs who live in neighborhoods that have high socioeconomic status and high percentage of AANHPI immigrants may be the most successfully assimilated people among this sample. This successful assimilation is represented spatially by being able to live in neighborhoods that have co-ethnics that have many socioeconomic resources. However, this successful spatial assimilation comes with risks, namely, higher risk of breast cancer. On the other hand, traditional spatial assimilation, as represented by AANHPI women who live in low ethnic enclave, high socioeconomic status neighborhoods, had the lowest risk of breast cancer. Therefore, these traditionally assimilated women may actually be less successfully assimilated and have less upward mobility than those living in high ethnic enclave, high socioeconomic status neighborhoods. This form of assimilation is actually protective against breast cancer for AANHPI women. Therefore, it seems that traditional spatial integration into majority white, high class neighborhoods seems to be protective against breast cancer for AANHPIs. This lower social status may be protective against breast cancer, since prior research has found an association between lower socioeconomic status and decreased risk of breast cancer (Palmer et al., 2012; Pudrovska & Anikputa, 2011; Yost et al., 2001).

This research contributes to the existing literature on breast cancer by showing that for AANHPIs, living in an ethnic enclave neighborhood with high socioeconomic status is associated with greater breast cancer risk. This association exists after controlling for individual-level socioeconomic status and other known risk factors for breast cancer. This suggests that other environmental or behavioral factors related to spatial assimilation increase risk of breast cancer among AANHPI women. In addition, this research contributes to spatial assimilation theory. While immigrants may experience upward mobility in the US by drawing on the resources in ethnic enclaves to increase their socioeconomic status, this “successful” assimilation comes with health risks. By successfully assimilating to the US, AANHPI women increase their risk of breast cancer.

Living in an ethnic enclave was a robust predictor of not only having breast cancer, but also of engaging in less physical activity and of drinking less alcohol. This research examined whether the built environment may help to explain some of these associations between living in ethnic enclaves and health. However, the features of the neighborhood built environment were not associated with having breast cancer or health behaviors, and they did not mediate any of the associations between living in an ethnic enclave and breast cancer risk.

Therefore, it is unclear exactly what may explain the associations between living in ethnic enclaves and health outcomes. Importantly, the associations between living in an ethnic enclave, neighborhood socioeconomic status, and having breast cancer remained even after controlling for reproductive and hormonal factors such as age at first birth, number of pregnancies, breast feeding history, and use of postmenopausal hormone therapy. Prior research has suggested that these individual-level reproductive factors may explain the associations between the neighborhood-level social environment and breast cancer risk (Keegan, John, et al., 2010; Palmer et al., 2012). This study found associations between the neighborhood social environment and breast cancer that were above and beyond these reproductive factors. Furthermore, these associations persisted even after controlling for individual sociodemographic characteristics and individual socioeconomic status. Additional tests were performed in order to examine whether other neighborhood social characteristics (e.g. neighborhood safety) or health behaviors (e.g. diet) may have been explanations, but none of them were.

This indicates that there are other unmeasured factors related to the social and physical environment that are impacting breast cancer risk. Perhaps AANHPI women living in high socioeconomic status ethnic enclaves are more likely to purchase and use certain personal care products with chemicals that are cancer-inducing. Ambient pollution may be another factor in those neighborhoods with higher breast cancer risk. Previous studies have shown that AANHPIs living in neighborhoods with high AANHPI concentration have higher exposures to environmental toxins (Morello-Frosch, Pastor, & Sadd, 2001; Morey, 2014). Future research may examine these and other possible mechanisms by which neighborhood ethnic composition and socioeconomic status are associated with breast cancer for AANHPI women.

It is likely that the women in this sample spend time in places outside of the home. Past research has shown that women are usually more affected than men by their immediate residential neighborhoods, because they spend more time there (Kaczynski, Potwarka, Smale, & Havitz, 2009; Van Dyck et al., 2012). However given this relatively high socioeconomic status sample and the driving culture in California, it is likely that the respondents in this sample are more mobile and spend less time in their immediate neighborhoods.

LIMITATIONS

There are limitations to this study which should be noted. First, these data were cross-sectional. Self-reports of past events and past behaviors are retrospective, and therefore subject to reporting and recall biases. Similarly, address data were only available for place of residence at the time of breast cancer diagnosis or the time of interview. Therefore, it was not possible to examine how past exposures to stress and neighborhood environments earlier in life impacted health status.

The lack of significant associations between stress and breast cancer in this study may reflect the reality that stress does not increase breast cancer risk. However, these null findings may have reflected problems with the timing and measurement of stress. Stress reported over the past 12 months prior to interview was unlikely to have an impact on breast cancer diagnosis. Furthermore, experiences of stress due to immigration and discrimination may have real effects on breast cancer risk, but depend on when they occurred during a person’s life. Past research has shown that when stress occurs at critical periods of development or change, such as during menarche or menopause, this can have a profound impact on breast cancer risk later in life (Williams et al., 2016). Reports of the stress, such as lifetime discrimination, that occurred in the past are subject to recall bias in case control studies such as this one. This may be why prospective studies have shown stronger associations between stress and breast cancer than case control studies (Duijts et al., 2003). Conducting research on how prior or early life stress impacts breast cancer risk and health behaviors would require longitudinal data, which was unavailable in this case control dataset.

Another possible reason for why stress was not significantly associated with breast cancer in this study may involve the specific measures of stress used in the Asian CHI study. These stress measures may not have fully captured the stress experiences of AANHPI women living in the US. As an example, the measure of acculturative stress in this study was intended to capture the “perceived stress attributed to living in the US as an immigrant” and was adapted from the Noh Acculturative Stress Index (Noh & Avison, 1996). However, items may have captured slightly different constructs. One item asks whether living in the US is stressful “because you are unable to do the things you used to enjoy when you were in your country of origin.” This item is slightly vague, seeming to attempt to capture a level of homesickness or nostalgia for one’s country of origin. Another item asks whether living in the US is stressful “because you have or had a job that is below your experience of qualifications.” This item is more specific, appearing to capture the concept of relative social standing in the US. A third item asks whether living in the US is stressful “because you have few, if any, opportunities to participate in American politics.” This item is even more specific. It seems to assume that immigrants in general want to be involved in American politics, which may not be the case at all. This item may not capture acculturative stress, but instead capture a person’s desire or ambivalence to being involved in American politics in the first place. Taking these three items into consideration, it seems like they vary in their level of specificity and in the construct they are measuring. Together, this measure may not truly capture the stress attributed to living in the US as an immigrant. Furthermore, these items are specific to the experiences of first generation immigrants, although second generation immigrants and beyond may also experience acculturative stress in the US (Portes & Zhou, 1993). Unfortunately, acculturative stress could not be measured among US-born AANHPIs in this study, since many of the items did not apply to them. The absence of significant associations between features of the built environment and breast cancer risk may have also been due to measurement issues. Although previous studies have shown associations between the built environment and health, this research did not corroborate those findings (Berrigan & McKinno, 2008; Booth, 2016; Carroll-Scott et al., 2013; Renalds, Smith, & Hale, 2010). The neighborhood-level variables were measured based on the immediate neighborhoods around people's homes. There have been many criticisms of using residential neighborhood to determine neighborhood exposures (Chakraborty, Maantay, & Brender, 2011; Kerr et al., 2011; Perchoux et al., 2013). People often spend a large proportion of their time outside of their residential neighborhoods. These other places where people work, learn, or recreate may be more influential for health and health behaviors than their place of residence. Unfortunately, this data is restricted in the use of residential addresses. Future studies may make use of global positioning systems data to gain a more accurate sense of the places where people spend their time (Kerr et al., 2011).

In addition, due to the sample size, this study was unable to make use of multilevel models. The sample size limited the number of people represented in each neighborhood to one or two respondents. A larger sample with more people representing each neighborhood would be needed to use hierarchical linear modeling. Instead, this study used single-level models that accounted for potential clustering of the standard errors within block groups.

Furthermore, there were limitations with the control data (i.e. respondents without diagnosis breast cancer). The control dataset was used to conduct analyses when health behaviors were the outcome. The control data were found to be comparable to the target population—all AANHPI women living in the San Francisco Bay Area at risk for breast cancer—on key demographic characteristics (Wong et al., 2016b). However, this sample may not be truly representative of the overall target population because it was not randomly selected. There was no sampling frame, so it is not possible to calculate response rates. Therefore, findings using the control dataset only should be interpreted with some caution, and may not be generalizable to the population of AANHPIs living in the San Francisco Bay Area.

Lastly, this dataset was collected of AANHPI women living in the Greater San Francisco Bay Area, which is likely a unique population compared to the rest of California and the rest of the US. The San Francisco Bay Area is known to be a relatively racially and ethnically diverse area with high cost of living. The findings from this study are not generalizable to the population of AANHPI women outside of this area of California, or to the rest of the US.

STRENGTHS

This study has a number of strengths, despite the limitations noted above. First, the Asian CHI dataset is uniquely positioned to examine breast cancer risk factors specific to AANHPI women. The case control design allows for the examination of factors related to breast cancer for a minority group that is often left out of cancer studies due to their relatively small representation in larger population-based studies. The Asian CHI study used the Greater San Francisco Bay Area Breast Cancer Registry to survey the population of AANHPI women diagnosed with breast cancer. In addition, it matched controls based on age and ethnicity to provide a sample of AANHPI women without cancer, who were at risk for developing breast cancer. The case control design was appropriate for examining breast cancer, a relatively rare event, in a racial minority group. Importantly, the survey instruments were implemented in multiple languages—English, Mandarin, Cantonese, and Tagalog—which was important to gathering data from a group as linguistically diverse as AANHPIs. Therefore, the Asian CHI is one of the few datasets available to adequately examine breast cancer risk factors specific to AANHPI women.

In addition to the benefits of the study design, the Asian CHI survey contained a number of unique items that allowed for the study of how individual- and neighborhood-level factors were associated with breast cancer risk. In particular, the Asian CHI included questions on stress, discrimination, acculturative stress, neighborhood safety, collective efficacy, and neighborhood problems. In addition, the Asian CHI data were geocoded, enabling the study of neighborhood factors, including ethnic makeup, neighborhood socioeconomic status, and the built environment. This allowed for the examination of how factors not previously studied in AANHPI populations were related to breast cancer risk.

FUTURE DIRECTIONS

This study opens the door for further inquiry into unique factors that contribute to breast cancer risk among AANHPIs. Future work may apply a life course perspective to examine how prior stressors and life events around the critical periods of menarche and menopause impact breast cancer risk. Such research may make use of longitudinal data to examine how early life exposures affect later breast cancer outcomes. This dissertation raised questions about the role of ethnic enclaves in breast cancer risk among AANHPIs. More work is needed to identify the mechanisms behind which living in ethnic enclaves impacted breast cancer for AANHPI women. Such studies should take a nuanced approach to examine the various types of ethnic enclaves, including how variations in neighborhood socioeconomic status and other resources in ethnic enclaves create different kinds of health environments. More work is also needed to examine how toxic exposures impact breast cancer risk across the life course, especially for racial/ethnic minorities like AANHPIs who have been shown to be disproportionately exposed to environmental hazards (Morello-Frosch et al., 2001; Morey, 2014). Exposure to environmental toxins may increase risk for breast cancer. These toxins may be ambient in living and work environments. Toxins may also enter the body through behavioral mechanisms, namely, the chemical products that people use and consume. More study is needed in this area.

Future work may consider revisiting measures of stress for AANHPIs. A new measure for acculturative stress may attempt to capture the stress associated with being an immigrant or of immigrant descent, so that both foreign-born and US-born AANHPIs may be included. For AANHPIs in particular, the stress of being an immigrant in the US may be better captured using items that indicate the stress of being treated as a perpetual foreigner, of striving to provide for one's family, and of struggling to achieve acceptance in "American mainstream" culture (Parrillo & Donoghue, 2005; Portes & Rumbaut, 2014).

More datasets like the Asian CHI are necessary to examine unique risk factors among minority groups. Future studies examining cancer risk among AANHPIs may use methods similar to that of the Asian CHI to collect data in different geographical areas with larger sample sizes, in order to make the findings more generalizable to diverse populations.

CONCLUSION

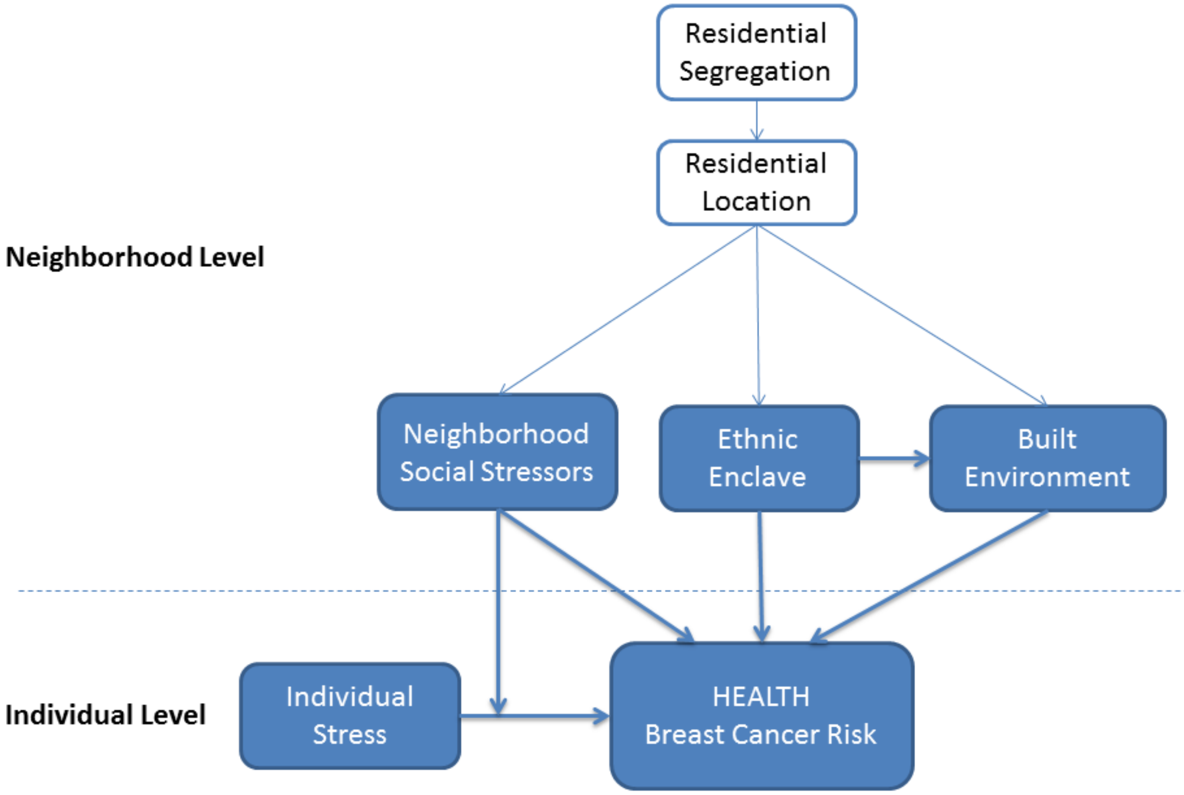
Among AANHPI women, odds of having breast cancer is greater in high socioeconomic status ethnic enclaves, accounting for all else. This seems to suggest that the upward mobility that comes with "successful" assimilation to a US context also comes with health risks. By assimilating to the US, AANHPI women are at greater risk of diseases more common in the US, such as breast cancer. Therefore, while assimilation may provide more economic resources for immigrant groups, there may also be costs to health in regards to chronic disease such as cancer. Further research is needed to examine the various mechanisms linking ethnic enclaves and health for AANHPIs.

This dissertation contributes to prior literature on assimilation, neighborhoods, and health for AANHPI women specifically. This research adds to a growing body of work that shows the unique relationships that AANHPIs have with their neighborhood contexts that are different than other immigrant and ethnic minority groups. As the number of AANHPIs living in the US continues to increase, research that examines their changing health profiles are warranted. In addition, studying how AANHPI health changes with increasing assimilation provides a unique opportunity to show how changing social mobility and neighborhood contexts impact health outcomes.

TABLES AND FIGURES

Tables and figures are organized by chapter. The first number refers to the chapter. Letters represent the different dependent variables (i.e. breast cancer status, physical activity, alcohol use, fruit and vegetable consumption, and body mass index). Subsequent numbers and letters refer to their sequence in the chapter.

Figure 1.1: Overall conceptual framework[1] (adapted from the Stress-Exposure Disease Model) (Gee & Payne-Sturges, 2004)



[1] Boxes with white fill are unmeasured variables in this dissertation. The blue fill boxes were measured.

Figure 1.2: Aim 1 conceptual model: How individual and neighborhood social stressors are associated with breast cancer risk

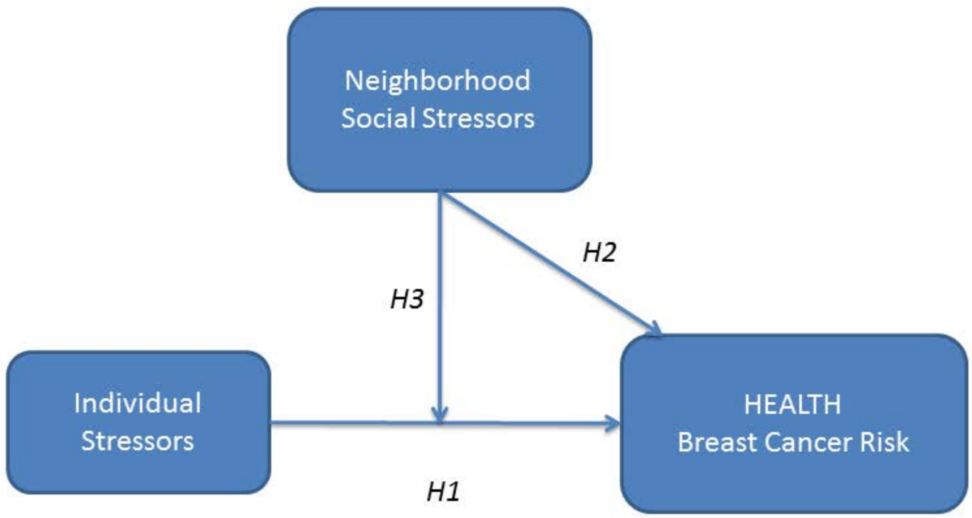


Figure 1.3: Aim 2 conceptual model: How living in an ethnic enclave is associated with breast cancer risk

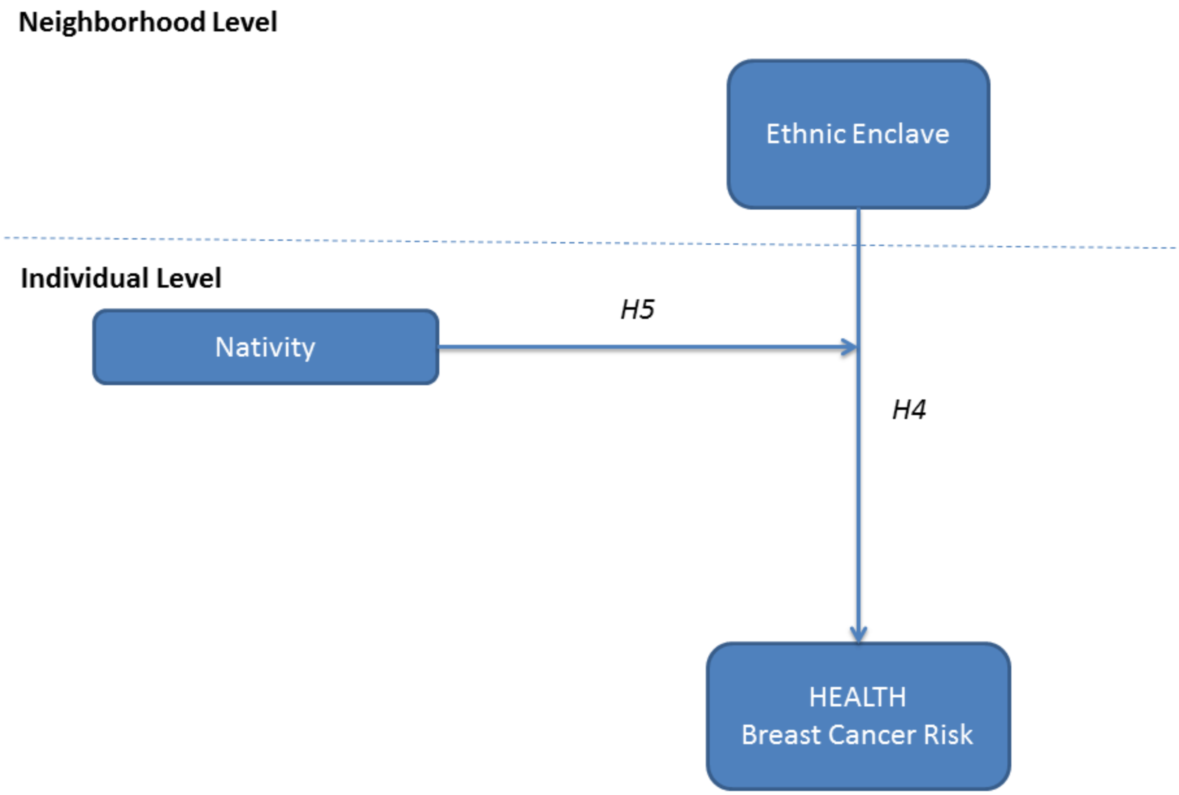


Figure 1.4: Aim 3 conceptual model: How features of the built environment are associated with breast cancer risk, and how this may explain the association between living in an ethnic enclave and breast cancer risk

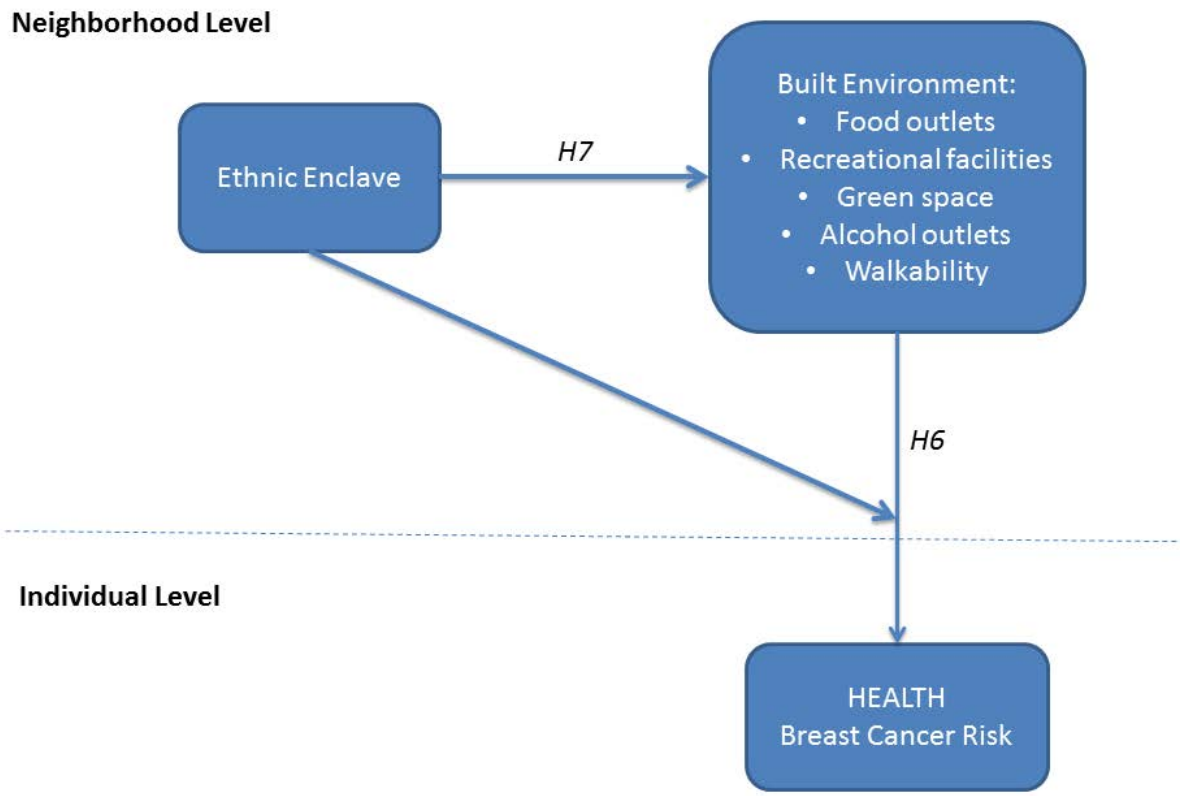


Table 2.1: Sampling method and recruitment of controls. Asian Community Health Initiative, 2013-2014
(N=482)

Sampling Method	**Number of Controls Recruited**
Community health centers:	
Asian Health Services	58
Asian Americans for Community Involvement	39
Army of Women	63
Online-based methods:	
Craigslist	81
Facebook, Twitter, & other	77
Address directory-based mailing	49
Community-based methods	115
Total Number of Controls =	482

Table 2.2. Description of Study Variables

Variable	Description	Nature	Possible Range
DEPENDENT VARIABLES:			
Breast cancer	Having breast cancer or not (case vs. control)	Categorical	No/Yes (0-1)
Moderate physical activity (controls only)	Reported hours per week engaged in strenuous physical activity in the past 12 months. Includes activities such as brisk walking, walking to school or work, shopping, running errands, golf, volleyball, riding a bike on level streets, recreational tennis, or softball.	Continuous	0-11
Strenuous physical activity (controls only)	Reported hours per week engaged in strenuous physical activity in the past 12 months. Includes activities such as vacuuming, washing windows, heavy lifting, farm work, mowing the lawn, swimming laps, aerobics, running, basketball, riding a bike on hills, or racquetball. Transformed in analyses by taking the square-root.	Continuous	0-3.32
Alcohol use (controls only)	Average number of alcoholic drinks per week in the past 12 months. Includes beer, wine, champagne, sake, soju, liquor, whisky, or mixed drinks.	Continuous	0-14
Fruit consumption (controls only)	Average number of times ate fruit per week in the past 12 months.	Continuous	0-14
Vegetable consumption (controls only)	Average number of times ate vegetables per week in the past 12 months.	Continuous	0-14
Body mass index (controls only)	Calculated using self-reported height and weight in kg/m^2.	Continuous	15-60

INDEPENDENT VARIABLES:			
AIM 1			
Individual Variables:			
General stress	Cohen's perceived stress scale (10 items) reported in past 12 months (Cohen et al., 1983; Cohen & Williamson, 1988).	Continuous	1-5
Lifetime discrimination	Total number of 8 discriminatory situations experienced over lifetime (Shariff-Marco et al., 2009).	Continuous	0-8
Day-to-day discrimination	Average frequency of 9 day-to-day discriminatory events (Shariff-Marco et al., 2009). (Never=0, Rarely=1, Sometimes=2, or Often=3)	Continuous	0-3
Acculturative stress	Average stressfulness of 12 experiences related to living in the US (Noh & Avison, 1996). (Never=1, Sometimes=2, Often=3, or Very Often=4)	Continuous	1-4
Neighborhood Variables:			
Perceived safety	"How often do you feel safe in your current neighborhood?" (None of the time=1, Some of the time=2, Most of the time=3, All of the time=4). Level of geography = self-reported neighborhood.	Continuous	1-4
Neighborhood problems	Sum of 5 items: neighborhood crime, traffic, noise, trash/litter, and lighting at night (Not really a problem=0, Minor problem=1, Somewhat serious problem=2, A very serious problem=3). Level of geography = self-reported neighborhood.	Continuous	0-15

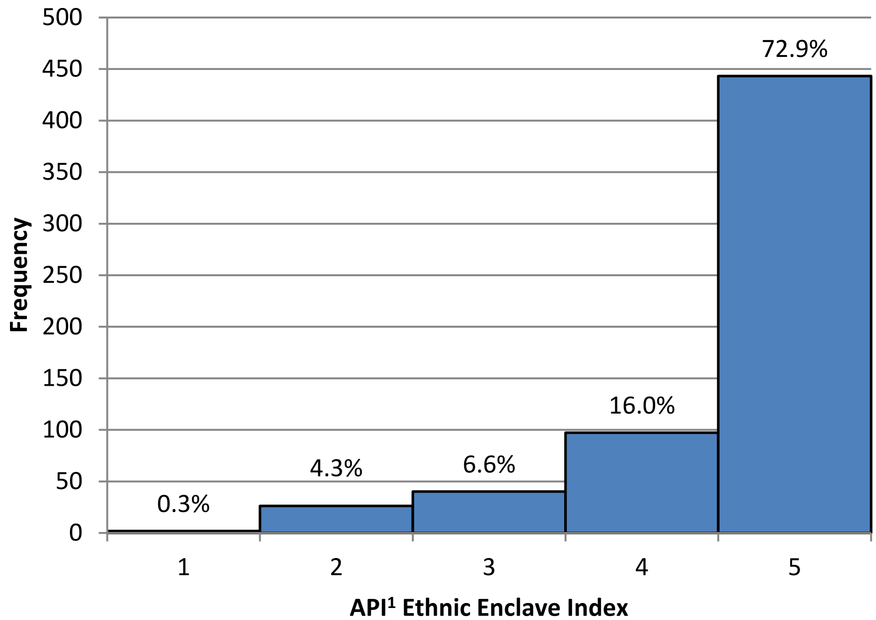
Collective efficacy	Average of 5 items of social trust and willingness to intervene on behalf of the common good (None/Never=0, Rarely/Few=1, Sometimes/Some=2, Often/A lot=3). Level of geography = self-reported neighborhood.	Continuous	0-3
AIM 2			
Ethnic enclave	Dichotomized index for neighborhood immigration/acculturation for Asian/Pacific Islanders (Gomez et al., 2011) Level of geography = Census block group.	Categorical	Low, High (0-1)
AIM 3			
Restaurant environment	Restaurant Environment Index (REI) = Ratio of number of fast-food restaurants to other restaurants and other food stores in neighborhood (Babey, Diamant, Hastert, & Harvey, 2008). Level of geography = 1,600-m network distance from individual's address.	Continuous	0-1
Retail food environment	Retail Food Environment Index 3 (RFEI 3) = Ratio of number of convenience stores and fast-food restaurants to supermarkets and farmers' markets in neighborhood (Babey et al., 2008) Level of geography = 1,600-m network distance from individual's address.	Continuous	0-4
Number of recreational facilities	Number of facilities where physical activities can take place (e.g. fitness centers) in neighborhood (Keegan et	Continuous	0-7

	al., 2014). Transformed by taking the square-root. Level of geography = 1,600-m network distance from individual's address.		
Number of parks	Count of parks (*NAVSTREETS Street Data Reference Manual v3.7*, 2010). Transformed by taking the square-root. Level of geography = 1,600-m network distance from individual's address.	Continuous	0-4
Number of liquor stores	Count of liquor stores (i.e. establishments that sell packaged alcoholic beverages for consumption off the premises). Transformed by taking the square-root. Level of geography = 1,600-m network distance from individual's address.	Continuous	0-8
Traffic density	Average vehicle kilometers travelled on streets. Transformed by taking the square-root. Level of geography = 1,600-m network distance from individual's address.	Continuous	0-2
Alpha measure	Ratio of actual number of complete loops to the maximum number of possible loops given the number of intersections (Dill, 2004; Gomez et al., 2011). Level of geography = Census block group.	Continuous	0-1
Gamma measure	Ratio of actual number of street segments to maximum possible number of intersections (Dill, 2004; Gomez et al., 2011). Level of geography = Census block group.	Continuous	0-1

CONTROL VARIABLES:			
Age	Age at time of diagnosis (for cases) or at time of interview (for controls).	Continuous	22-87
Marital status	Self-reported	Categorical	Married/cohabiting, formerly married, single
Asian ethnicity	Self-reported	Categorical	Chinese, Filipina, other AANHPI
Language of interview	Reported by interviewer	Categorical	English, Chinese (Mandarin or Cantonese), Tagalog
Nativity status	Self-reported	Categorical	US-born, foreign-born
Education	Self-reported	Categorical	<=high school graduate, some college, college graduate
Employment	Self-reported	Categorical	Full time, part time, not working
Insurance status	Self-reported	Categorical	Private insurance, public insurance/uninsured
Neighborhood socioeconomic status	Dichotomized Yang Index (Yost et al., 2001). Level of geography = block group.	Categorical	Low, High (0-1)
Urbanicity	2010 Census-defined urbanicity. Level of geography = block group	Categorical	Metropolitan urban, metropolitan suburban, non-metropolitan town/rural
Length of time lived at current residence	Calculated from year first moved to address at time of cancer diagnosis (for cases) or address at time of interview (for controls).	Continuous	0-54
Number of pregnancies	"How many pregnancies have you had that lasted at least 7 months?	Continuous	0-6
Age at first birth	"How old were you when your first child was born?	Continuous	17-44
Ever pregnant	Based on number of pregnancies. Included with age at first birth to make it a conditional variable.	Categorical	No, Yes (0-1)

Number of months breastfed	Total number of months respondent reported breastfeeding children.	Continuous	0-121
Age at first menstrual period	"How old were you when you had your first menstrual period?	Continuous	8-20
Menopausal status and hormone therapy use	Self-reported menopausal status and reported use of hormone therapy.	Categorical	Premenopausal, postmenopausal/No hormone therapy use, postmenopausal/Hormone therapy user
Family history of breast cancer	Reporting having any immediate family members with breast cancer, including biological mother, sisters, and/or daughters.	Categorical	No, Yes (0-1)

Figure 2.1: Histogram of the distribution of the ethnic enclave index variable in the Asian CHI sample (N=608)



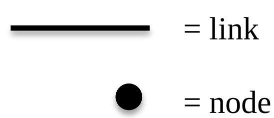
[1] API = Asian and Pacific Islander

Figure 2.2: A visual representation of alpha and gamma indeces

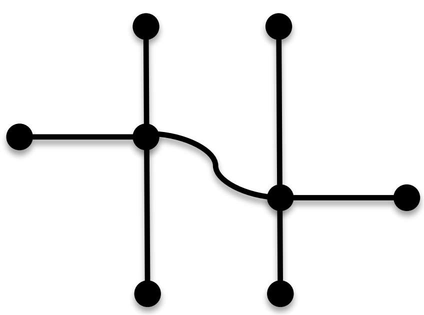
$$Alpha\ index = \frac{\#links - \#nodes + 1}{2(\#nodes) - 5}$$

$$Gamma\ index = \frac{Number\ of\ links\ in\ a\ network}{Maximum\ possible\ number\ of\ links}$$

$$Maximum\ possible\ number\ of\ links = 3\ x\ (\#nodes - 2)$$



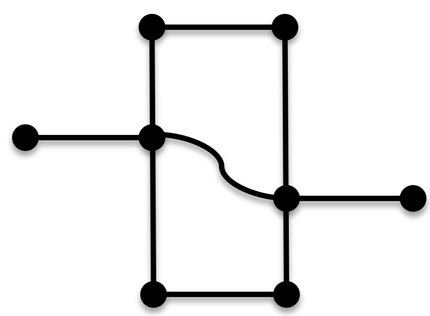
Block Group A



$$Alpha\ index = \frac{7-8+1}{2(8)-5} = 0$$

$$Gamma\ index = \frac{7}{3(8-2)} = 0.39$$

Block Group B



$$Alpha\ index = \frac{9-8+1}{2(8)-5} = 0.18$$

$$Gamma\ index = \frac{9}{3(8-2)} = 0.50$$

Figure 2.3: Histogram of the distribution of the Yang Index variable for neighborhood socioeconomic status in the Asian CHI sample (N=608)

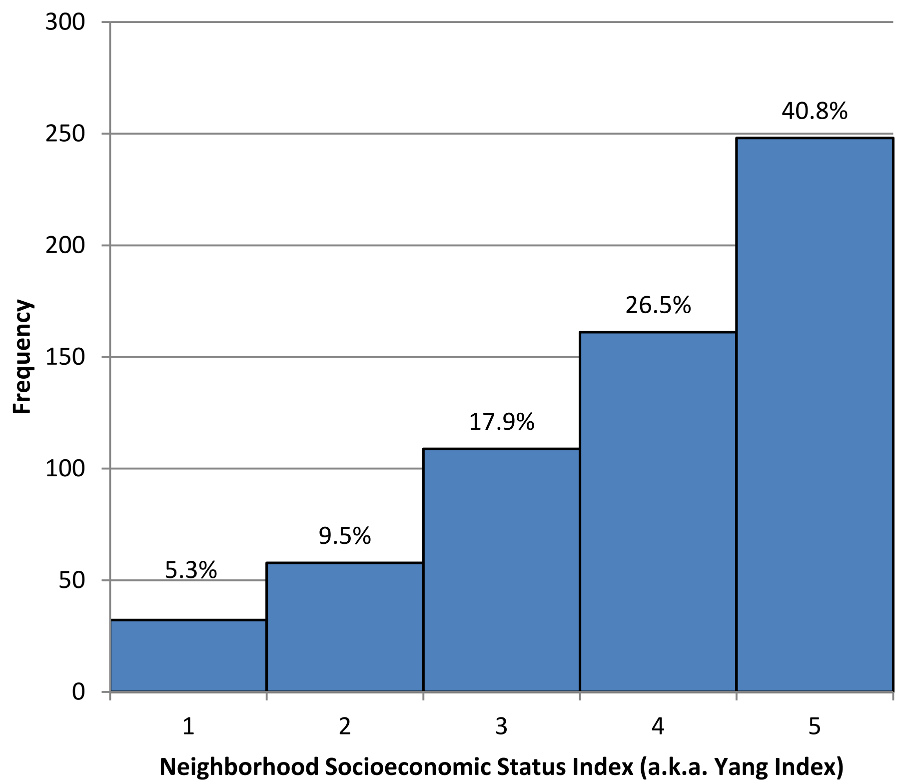


Table 3.1: Descriptive table for Asian Community Health Initiative 2014 Total Sample and Stratified by Breast Cancer Status (N=621)

	TOTAL SAMPLE (N=621)			CONTROLS (N=482)			BREAST CANCER CASES (N=139)			
	Mean (SD[2]) or %	**Range**	**MV[3]**	**Mean (SD) or %**	**Range**	**MV**	**Mean (SD) or %**	**Range**	**MV**	**T-test or Chi-square Significance[4]**
DEPENDENT VARIABLES[5]										
Breast cancer risk behaviors (past 12 months):										
Strenuous physical activity (hours per week)	3.55 (3.34)	0-11	66	3.66 (3.38)	0-11	52	3.20 (3.17)	0-11	14	
Strenuous physical activity (square-root of hours per week)	1.60 (0.99)	0-3.32	66	1.64 (0.98)	0-3.32	52	1.48 (1.01)	0-3.32	14	
Moderate physical activity (hours per week)	5.14 (3.53)	0-11	57	5.13 (3.52)	0-11	44	5.20 (3.57)	0-11	13	
Alcohol use (drinks per week)	1.04 (2.46)	0-14	45	1.16 (2.56)	0-14	32	0.60 (2.03)	0-14	13	**
Fruit consumption (times per week)	8.17 (4.75)	0-14	9	8.07 (4.75)	0-14	9	8.52 (4.76)	0-14	0	
Vegetable consumption (times per week)	8.70 (4.52)	0-14	8	8.53 (4.51)	0-14	8	9.27 (4.52)	0-14	0	*
Body mass index	23.99 (4.50)	15.6-59.8	28	24.08 (4.78)	15.6-59.8	26	23.69 (3.42)	16.9-36.0	2	
Smoking status:[6]										
Current smoker	1.6%		39	1.8%		39	0.7%		0	
Non-smoker	98.5%			98.2%			99.3%			

[2] SD = standard deviation
[3] MV = number of missing values
[4] Tests if controls differ significantly from breast cancer cases. * p<.1, **p<.05, ***p<.01
[5] When the dependent variables are breast cancer risk behaviors, only the control sample were analyzed. However, distributions for these variables among cases and the total sample are still reported here.
[6] Few people smoke in this sample. This was going to be examined as a dependent variable, but too few people smoke to do this analysis.

Table 3.1 continued.

	TOTAL SAMPLE (N=621)			CONTROLS (N=482)			BREAST CANCER CASES (N=139)			
	Mean (SD[7]) or %	**Range**	**MV[8]**	**Mean (SD) or %**	**Range**	**MV**	**Mean (SD) or %**	**Range**	**MV**	**T-test or Chi-square Significance[9]**
AIM 1 INDEPENDENT VARIABLES										
General stress (past 12 months)	2.67 (0.59)	1.2-4.4	30	2.67 (0.59)	1.2-4.4	30	2.62 (0.80)	1-5	0	
Lifetime discrimination	3.05 (2.32)	0-8	0	3.08 (2.34)	0-8	0	2.97 (2.22)	0-8	0	
Day to day discrimination	0.48 (0.47)	0-2.4	0	0.49 (0.47)	0-2.2	0	0.42 (0.47)	0-2.4	0	
Acculturative stress (immigrants only)	1.50 (0.41)	1-3.6	192	1.50 (0.40)	1-2.8	167	1.49 (0.46)	1-3.6	25	
Perceived safety	3.24 (0.78)	1-4	43	3.21 (0.79)	1-4	30	3.33 (0.77)	1-4	13	
Neighborhood problems	2.16 (2.60)	0-15	44	2.25 (2.65)	0-15	30	1.84 (2.38)	0-15	14	
Collective efficacy	1.50 (0.69)	0-3	30	1.51 (0.69)	0-3	30	1.49 (0.68)	0-3	0	
AIM 2 INDEPENDENT VARIABLE										
Ethnic enclave index										
1 – low enclave (high acculturation)	0.3%		13	0.2%		12	0.7%		1	
2	4.3%			5.1%			1.5%			
3	6.6%			6.4%			7.3%			
4	16.0%			16.6%			13.8%			
5 – high enclave (low acculturation)	72.9%			71.7%			76.8%			
Ethnic enclave dichotomized high/low[10]										
Low	27.1%		13	28.3%		12	23.2%		1	
High	72.9%			71.7%			76.8%			

[7] SD = standard deviation
[8] MV = number of missing values
[9] Tests if controls differ significantly from breast cancer cases. * p<.1, **p<.05, ***p<.01
[10] High ethnic enclave = ethnic enclave index is 5; low ethnic enclave = ethnic enclave index ≤ 4.

Table 3.1 continued.

	TOTAL SAMPLE (N=621)			CONTROLS (N=482)			BREAST CANCER CASES (N=139)			
	Mean (SD[11]) or %	**Range**	**MV[12]**	**Mean (SD) or %**	**Range**	**MV**	**Mean (SD) or %**	**Range**	**MV**	**T-test or Chi-square Significance[13]**
AIM 3 INDEPENDENT VARIABLES										
Restaurant Environment Index (REI)[14]	0.11 (0.12)	0-1	30	0.11 (0.12)	0-1	21	0.10 (0.14)	0-1	9	
REI (square-root)	0.27 (0.19)	0-1	30	0.27 (0.18)	0-1	21	0.25 (0.20)	0-1	9	
Retail Food Environment Index (RFEI3)[15]	0.49 (0.49)	0-4	62	0.50 (0.49)	0-4	44	0.46 (0.46)	0-2.67	18	
RFEI3 (square-root)	0.61 (0.34)	0-2	62	0.62 (0.34)	0-2	44	0.58 (0.35)	0-1.63	18	
Number of recreational facilities	4.88 (7.08)	0-43.67	13	5.24 (7.54)	0-43.67	12	3.64 (5.09)	0-39.33	1	**
Number of recreational facilities (square-root)	1.84 (1.23)	0-6.61	13	1.91 (1.26)	0-6.61	12	1.58 (1.07)	0-6.27	1	***
Number of parks	2.91 (2.58)	0-13	13	2.98 (2.60)	0-13	12	2.66 (2.49)	0-13	1	
Number of parks (square-root)	1.51 (0.79)	0-3.61	13	1.53 (0.80)	0-3.61	12	1.44 (0.76)	0-3.61	1	
Number of liquor stores	5.57 (9.42)	0-61.3	13	6.05 (10.05)	0-61.3	12	3.92 (6.63)	0-53	1	**
Number of liquor stores (square-root)	1.80 (1.53)	0-7.83	13	1.89 (1.57)	0-7.83	12	1.47 (1.33)	0-7.28	1	***
Alpha index	0.18 (0.10)	0-0.56	13	0.19 (0.10)	0-0.56	12	0.17 (0.10)	0-0.44	1	*
Gamma index	0.46 (0.07)	0.33-0.71	13	0.47 (0.07)	0.33-0.71	12	0.45 (0.07)	0.33-0.64	1	*

[11] SD = standard deviation
[12] MV = number of missing values
[13] Tests if controls differ significantly from breast cancer cases. * p<.1, **p<.05, ***p<.01
[14] Restaurant Environment Index = ([fast food] / [other restaurants + other food stores])
[15] Retail Food Environment Index = ([convenience stores + fast food] / [supermarkets + farmers markets])

Table 3.1 continued.

	TOTAL SAMPLE (N=621)			CONTROLS (N=482)			BREAST CANCER CASES (N=139)			
	Mean (SD[16]) or %	**Range**	**MV[17]**	**Mean (SD) or %**	**Range**	**MV**	**Mean (SD) or %**	**Range**	**MV**	**T-test or Chi-square Significance[18]**
Traffic density	0.76 (0.77)	0-3.70	13	0.81 (0.79)	0-3.70	12	0.60 (0.67)	0-3.57	1	***
Traffic density (square-root)	0.76 (0.42)	0-1.92	13	0.79 (0.42)	0-1.92	12	0.67 (0.39)	0-1.89	1	***
INDIVIDUAL CONTROL VARIABLES										
Age	52.22 (11.90)	22-87	0	50.59 (11.72)	22-81	0	57.87 (10.78)	29-87	0	***
Asian ethnicity:										
Chinese	51.2%		0	50.4%		0	54.0%		0	
Filipino	20.0%			19.5%			21.6%			
Other AANHPI[19]	28.8%			30.1%			24.5%			
Marital status:										
Married	66.6%		1	66.3%		1	67.6%		0	
Formerly married	16.0%			15.0%			19.4%			
Single	17.4%			18.7%			13.0%			
Language of interview:										
English	66.2%		0	67.6%		0	61.2%		0	
Chinese	28.0%			26.4%			33.8%			
Tagalog	5.8%			6.0%			5.0%			
Nativity:										
Foreign-born	69.6%		0	65.4%		0	84.2%		0	***
US-born	30.4%			34.7%			15.8%			
Education:										
<=High school	17.9%		1	16.6%		1	22.3%		0	
Some college	19.8%			20.8%			16.6%			
College graduate	62.3%			62.6%			61.2%			

[16] SD = standard deviation
[17] MV = number of missing values
[18] Tests if controls differ significantly from breast cancer cases. * p<.1, **p<.05, ***p<.01
[19] AANHPI = Asian American or Native Hawaiian or Pacific Islander

Table 3.1 continued.

	TOTAL SAMPLE (N=621)			CONTROLS (N=482)			BREAST CANCER CASES (N=139)			
	Mean (SD[20]) or %	**Range**	**MV[21]**	**Mean (SD) or %**	**Range**	**MV**	**Mean (SD) or %**	**Range**	**MV**	**T-test or Chi-square Significance[22]**
Employment:										
Full time	43.3%		0	44.8%		0	38.1%		0	***
Part time	20.5%			22.4%			13.7%			
Not working	36.2%			32.8%			48.2%			
Homeownership										
Renter/other non-homeowner	35.5%		2	38.8%		2	24.5%		0	***
Homeowner	64.5%			61.3%			75.5%			
Insurance status:										
Private insurance	72.3%		0	70.8%		0	77.7%		0	
Public/other/no insurance	27.7%			29.3%			22.3%			

[20] SD = standard deviation
[21] MV = number of missing values
[22] Tests if controls differ significantly from breast cancer cases. * p<.1, **p<.05, ***p<.01

Table 3.1 continued.

	TOTAL SAMPLE (N=621)			CONTROLS (N=482)			BREAST CANCER CASES (N=139)			
	Mean (SD[23]) or %	**Range**	**MV[24]**	**Mean (SD) or %**	**Range**	**MV**	**Mean (SD) or %**	**Range**	**MV**	**T-test or Chi-square Significance[25]**
BREAST CANCER-RELATED CONTROL VARIABLES[26]										
Number of pregnancies	1.57 (1.32)	0-6	2	1.49 (1.32)	0-6	2	1.83 (1.29)	0-6	0	***
Ever pregnant										
No	27.3%		2	29.8%		2	18.7%		0	**
Yes	72.7%			70.2%			81.3%			
Age at first birth[27]	28.39 (5.53)	17-44	171	28.16 (5.60)	17-44	145	29.09 (5.27)	18-44	26	
Number of months breastfed[28]	11.03 (16.51)	0-121	2	11.10 (16.85)	0-121	2	10.86 (15.35)	0-80	0	
Age at first menstrual period	12.86 (1.73)	8-20	4	12.86 (1.74)	8-20	3	12.88 (1.70)	9-18	1	
Any immediate family history of breast cancer										
No	84.4%		0	87.3%		0	74.1%		0	***
Yes	15.6%			12.7%			25.9%			
Menopausal status & hormone therapy use										
Premenopausal	52.5%		4	52.0%		3	54.4%		1	***
Postmenopausal/No hormone therapy use	39.6%			42.0%			31.2%			
Postmenopausal/Hormone therapy user	7.9%			6.1%			14.5%			

[23] SD = standard deviation
[24] MV = number of missing values
[25] Tests if controls differ significantly from breast cancer cases. * p<.1, **p<.05, ***p<.01
[26] Only included in analyses with breast cancer status as the dependent variable.
[27] This question is only asked of people who have given birth before. Here, anyone who has not given birth is missing. In order for everyone to be included in analyses, this variable was made conditional on having given birth. Therefore, it is always included with the dichotomous "ever pregnant" variable in analyses.
[28] This question was asked only of people who have ever breastfed. In order to include everyone, those who have never given birth and who have never breastfed before are coded as "0" for number of months breastfed.

Table 3.1 continued.

	TOTAL SAMPLE (N=621)			CONTROLS (N=482)			BREAST CANCER CASES (N=139)			
	Mean (SD[29]) or %	**Range**	**MV[30]**	**Mean (SD) or %**	**Range**	**MV**	**Mean (SD) or %**	**Range**	**MV**	**T-test or Chi-square Significance[31]**
NEIGHBORHOOD CONTROL VARIABLES[32]										
Quintile of neighborhood SES[33]:										
1 – low neighborhood SES	5.3%		13	6.4%		12	1.5%		1	*
2	9.5%			10.4%			6.5%			
3	17.9%			18.1%			17.4%			
4	26.5%			26.2%			27.5%			
5 – high neighborhood SES	40.8%			38.9%			47.1%			
Neighborhood SES dichotomized high/low[34]										
Low	32.7%		13	34.9%		12	25.4%		1	**
High	67.3%			65.1%			74.6%			
Urbanicity:										
Non-metropolitan town/Rural[35]	6.1%		13	4.9%		12	10.1%		1	*
Metropolitan suburb[36]	59.9%			60.4%			58.0%			
Metropolitan urban[37]	34.0%			34.7%			31.9%			
Years lived at current address[38]	10.93 (9.76)	0-54	52	10.88 (9.91)	0-54	35	11.15 (9.24)	0-39	17	

[29] SD = standard deviation
[30] MV = number of missing values
[31] Tests if controls differ significantly from breast cancer cases. * p<.1, **p<.05, ***p<.01
[32] Only included in analyses with neighborhood focal independent or dependent variables.
[33] SES = socioeconomic status
[34] High neighborhood SES = quintile of neighborhood SES is 4 or 5; low neighborhood SES = quintile of neighborhood SES is ≤ 3.
[35] Non-metropolitan town/Rural = non-metropolitan areas with populations less than 1,000,000 and low population density.
[36] Metropolitan suburb = block group is in a metropolitan area with population greater than 1,000,000 and in the bottom 3 quartiles for population density.
[37] Metropolitan urban = block group is in a metropolitan area with population greater than 1,000,000 and in the top quartile for population density.
[38] For controls, length of time lived at current address is measured from the year respondent moved in to the year of interview. For cases, length of time lived at current address is measured from the year respondent moved in to the year of breast cancer diagnosis.

Table 3.2: Correlation matrix of all continuous and dichotomous variables for breast cancer outcome analyses. Asian Community Health Initiative, case control sample with no missing data. (N=546)

		1 Breast cancer case	**2** General stress	**3** Lifetime discrimi-nation	**4** Day-to-day discrimi-nation	**5** Accultu-rative stress	**6** Neighbor-hood safety	**7** Neighbor-hood problems	**8** Collective efficacy	**9** REI[39] (sqrt)[40]	**10** RFEI3[41] (sqrt)
1	Breast cancer case	1.000									
2	General stress	-0.023	1.000								
3	Lifetime discrimination	-0.017	**0.322** ***	1.000							
4	Day-to-day discrimination	-0.042	**0.325** ***	**0.420** ***	1.000						
5	Acculturative stress	-0.017	**0.449** ***	**0.325** ***	**0.324** ***	1.000					
6	Neighborhood safety	0.070	**-0.226** ***	**-0.099** *	**-0.128** **	**-0.240** ***	1.000				
7	Neighborhood problems	-0.064	**0.130** **	**0.178** ***	**0.242** ***	**0.151** **	**-0.299** ***	1.000			
8	Collective efficacy	-0.051	0.028	0.049	-0.057	0.014	0.051	-0.007	1.000		
9	REI (sqrt)	-0.035	-0.025	0.007	-0.004	0.101	-0.057	-0.032	-0.060	1.000	
10	RFEI3 (sqrt)	-0.035	-0.007	0.055	0.031	0.051	-0.025	**-0.105** **	**-0.100** *	**0.593** ***	1.000

Bold text = significant at p<0.05; * p<0.05, ** p<0.01, *** p<0.001

[39] REI = Restaurant Environment Index = (fast food)/(other restaurants + other food stores)
[40] sqrt = transformed by taking the square-root
[41] RFEI = Retail Food Environment Index = (convenience stores + fast food)/(supermarkets + farmers markets)

Table 3.2 continued.

		1 Breast cancer case	2 General stress	3 Lifetime discrimi-nation	4 Day-to-day discrimi-nation	5 Accultur-ative stress	6 Neighbor-hood safety	7 Neighbor-hood problems	8 Collective efficacy	9 REI[42] (sqrt)[43]	10 RFEI3[44] (sqrt)
11	Number of liquor stores (sqrt)	**-0.124** **	0.056	0.016	-0.030	**0.126** *	**-0.161** ***	**0.174** ***	**0.112** **	0.014	**-0.130** **
12	Number of recreational facilities (sqrt)	**-0.133** ***	**0.092** *	0.007	-0.016	0.076	**-0.111** *	**0.184** ***	**0.100** *	-0.035	**-0.123** **
13	Number of parks (sqrt)	-0.060	0.032	-0.059	-0.050	0.052	**-0.177** ***	**0.188** ***	**0.110** *	-0.057	**-0.128** **
14	Alpha	**-0.114** **	0.036	-0.045	-0.049	0.084	**-0.152** ***	**0.222** ***	0.062	0.001	**-0.173** ***
15	Gamma	**-0.114** **	0.038	-0.042	-0.047	0.086	**-0.161** ***	**0.230** ***	0.057	0.000	**-0.175** ***
16	Traffic density (sqrt)	**-0.119** **	0.016	0.030	0.043	**0.119** *	**-0.105** *	**0.142** **	0.049	0.081 (0.060)	0.008
17	Age	**0.254** ***	**-0.142** **	**-0.180** ***	**-0.226** ***	-0.090	-0.019	**-0.178** ***	0.003		-0.069
18	US-born	**-0.160** ***	**-0.136** **	0.041	**0.116** **	--- ---	0.027	**0.201** ***	0.024	**-0.093** *	-0.051
19	Homeowner	**0.138** **	-0.071	-0.020	-0.003	**-0.269** ***	**0.164** ***	-0.084	0.023	-0.051	-0.022
20	Public insurance/ Not insured	-0.055	0.077	-0.030	**-0.097** *	**0.230** ***	**-0.246** ***	0.035	0.025	**0.097** *	-0.029

Bold text = significant at p<0.05; * p<0.05, ** p<0.01, *** p<0.001

[42] REI = Restaurant Environment Index = (fast food)/(other restaurants + other food stores)
[43] sqrt = transformed by taking the square-root
[44] RFEI = Retail Food Environment Index = (convenience stores + fast food)/(supermarkets + farmers markets)

Table 3.2 continued.

		1 Breast cancer case	2 General stress	3 Lifetime discrimi-nation	4 Day-to-day discrimi-nation	5 Accultur-ative stress	6 Neighbor-hood safety	7 Neighbor-hood problems	8 Collective efficacy	9 REI[45] (sqrt)[46]	10 RFEI3[47] (sqrt)
21	Ever pregnant	**0.100** *	0.001	**-0.113** **	**-0.159** **	0.038	0.038	**-0.169** ***	**0.089** *	0.058	-0.012
22	Number of pregnancies	**0.102** *	-0.045	**-0.138** **	**-0.130** **	-0.056	0.005	**-0.137** **	0.062	0.080	0.014
23	Age at first birth	0.062	0.044	0.073	0.039	0.019	0.044	-0.023	**0.109** *	0.012	-0.022
24	Number of months breastfed	-0.017	-0.049	**-0.102** *	**-0.103** *	-0.027	0.023	-0.056	**0.145** **	0.009	0.000
25	Age of first menstrual period	-0.009	0.081	-0.050	**-0.116** **	0.044	-0.092	**-0.156** ***	0.040	0.008	0.029
26	Any family history of breast cancer	**0.137** **	-0.052	-0.019	0.034	**-0.105** *	0.056	0.003	0.011	-0.024	-0.036
27	Years lived at current address	-0.014	**-0.095** *	-0.044	0.023	**-0.129** *	0.073	-0.052	0.045	-0.023	-0.065
28	High neighborhood SES[48]	**0.091** *	-0.049	-0.074	**0.097** *	**-0.134** *	**0.179** ***	-0.051	-0.004	**-0.236** ***	-0.044
29	High API[49] enclave	0.058	0.052	-0.032	-0.011	0.082	-0.057	0.013	-0.080	0.174 ***	0.165 ***

Bold text = significant at p<0.05; * p<0.05, ** p<0.01, *** p<0.001

45 REI = Restaurant Environment Index = (fast food)/(other restaurants + other food stores)
46 sqrt = transformed by taking the square-root
47 RFEI = Retail Food Environment Index = (convenience stores + fast food)/(supermarkets + farmers markets)
48 SES = socioeconomic status
49 API = Asian or Pacific Islander

Table 3.2 continued.

		11 Number of liquor stores (sqrt)[50]	**12** Number of recreation-al facilities (sqrt)	**13** Number of parks (sqrt)	**14** Alpha	**15** Gamma	**16** Traffic density (sqrt)	**17** Age	**18** US-born	**19** Home-owner	**20** Public insurance/ Not insured
11	Number of liquor stores (sqrt)	1.000									
12	Number of recreational facilities (sqrt)	**0.878** ***	1.000								
13	Number of parks (sqrt)	**0.599** ***	**0.634** ***	1.000							
14	Alpha	**0.429** ***	**0.423** ***	**0.424** ***	1.000						
15	Gamma	**0.455** ***	**0.452** ***	**0.442** ***	**0.996** ***	1.000					
16	Traffic density (sqrt)	**0.490** ***	**0.501** ***	**0.370** ***	**0.405** ***	**0.409** ***	1.000				
17	Age	0.033	0.027	**0.104** *	-0.022	-0.012	-0.019	1.000			
18	US-born	-0.034	-0.015	-0.028	0.005	0.007	-0.026	**-0.185** ***	1.000		
19	Homeowner	**-0.323** ***	**-0.300** ***	**-0.307** ***	**-0.176** ***	**-0.191** ***	**-0.295** ***	**-0.092** *	**0.091** *	1.000	
20	Public insurance/ Not insured	**0.196** ***	**0.135** **	**0.240** ***	**0.137** **	**0.144** ***	**0.189** ***	**0.300** ***	**-0.187** ***	**-0.474** ***	1.000

Bold text = significant at p<0.05; * p<0.05, ** p<0.01, *** p<0.001

[50] sqrt = transformed by taking the square-root

Table 3.2 continued.

	11 Number of liquor stores (sqrt)[51]	**12** Number of recreation-al facilities (sqrt)	**13** Number of parks (sqrt)	**14** Alpha	**15** Gamma	**16** Traffic density (sqrt)	**17** Age	**18** US-born	**19** Home-owner	**20** Public insurance /Not insured
21 Ever pregnant	**-0.101** *	**-0.120** **	-0.051	**-0.093** *	**-0.099** *	-0.083	**0.285** ***	**-0.254** ***	0.032	**0.105** *
22 Number of pregnancies	**-0.086** *	**-0.086** *	0.015	-0.031	-0.031	**-0.099** *	**0.359** ***	**-0.239** ***	-0.071	**0.211** ***
23 Age at first birth	-0.063	-0.039	**-0.130** **	**-0.106** *	**-0.112** **	-0.041	**-0.172** ***	0.072	**0.256** ***	**-0.248** ***
24 Number of months breastfed	-0.047	-0.062	0.016	-0.016	-0.014	-0.053	**0.095** *	-0.039	-0.048	0.089
25 Age of first menstrual period	0.076	0.066	0.073	0.052	0.057	0.050	**0.219** ***	**-0.181** ***	-0.075	**0.225** ***
26 Any family history of breast cancer	**-0.146** ***	**-0.122** ***	**-0.159** ***	**-0.112** **	**-0.108** **	**-0.142** ***	**0.096** *	0.026	-0.047	-0.048
27 Years lived at current address	-0.070	-0.018	-0.082	**-0.106** *	**-0.101** *	**-0.115** **	**0.286** ***	**0.171** ***	**0.299** ***	**-0.152** ***
28 High neighborhood SES[52]	**-0.323** ***	**-0.222** ***	**-0.294** ***	**-0.216** ***	**-0.226** ***	**-0.264** ***	-0.054	**0.221** ***	**0.333** ***	**-0.340** ***
29 High API[53] enclave	**0.129** **	**0.126** **	**0.172** ***	**0.138** ***	**0.146** ***	**0.183** ***	0.021	**-0.212** ***	**-0.087** *	**0.121** **

Bold text = significant at p<0.05; * p<0.05, ** p<0.01, *** p<0.001

[51] sqrt = transformed by taking the square-root
[52] SES = socioeconomic status
[53] API = Asian or Pacific Islander

Table 3.2 continued.

	21 Ever pregnant	22 Number of pregnan-cies	23 Age at first birth	24 Number of months breastfed	25 Age at first menstrual period	26 Any family history of breast cancer	27 Years lived at current address	28 High neighborhood SES[54]	29 High API[55] enclave
21 Ever pregnant	1.000								
22 Number of pregnancies	--- ---	1.000							
23 Age at first birth	--- ---	**-0.306** ***	1.000						
24 Number of months breastfed	--- ---	**0.598** ***	**-0.153** ***	1.000					
25 Age of first menstrual period	**0.160** ***	**0.171** ***	-0.077	**0.159** ***	1.000				
26 Any family history of breast cancer	-0.002	-0.045 (0.331)	-0.020	0.019 (0.651)	0.073	1.000			
27 Years lived at current address	-0.008	-0.032	0.061	**-0.094** *	**-0.086** *	**0.111** *	1.000		
28 High neighborhood SES	-0.076	0.043 (0.319)	-0.113 (0.007)	0.037 (0.383)	0.186 (0.000)	**0.160** ***	-0.196 (0.000)	1.000	
29 High API enclave	**0.118** **	0.070	-0.098	0.007	**0.132** **	**-0.114** **	-0.075	**-0.197** ***	1.000

Bold text = significant at p<0.05; * p<0.05, ** p<0.01, *** p<0.001

[54] SES = socioeconomic status
[55] API = Asian or Pacific Islander

Table 3.3: Correlation matrix of all continuous and dichotomous variables in health behavior analyses. Asian Community Health Initiative, control sample with no missing data only. N=432

	1 Moderate physical activity	**2** Strenuous physical activity	**3** Alcohol consump-tion	**4** Fruit consump-tion	**5** Vegetable consump-tion	**6** Body mass index	**7** General stress	**8** Lifetime discrimi-nation	**9** Day-to-day discrimi-nation	**10** Accultur-ative stress
1 Moderate physical activity	1.000									
2 Strenuous physical activity	**0.502** ***	1.000								
3 Alcohol consumption	0.034	0.088	1.000							
4 Fruit consumption	0.008	0.052	-0.042	1.000						
5 Vegetable consumption	0.096	**0.118** *	0.026	**0.392** ***	1.000					
6 Body mass index	-0.048	0.033	0.098	-0.046	**-0.118** *	1.000				
7 General stress	**-0.126** *	-0.061	-0.075	0.017	-0.072	0.072	1.000			
8 Lifetime discrimination	0.024	-0.055	0.079	-0.034	0.008	0.077	**0.245** ***	1.000		
9 Day-to-day discrimination	-0.024	-0.024	**0.113** *	**-0.139** **	-0.081	**0.148** **	**0.285** ***	**0.392** ***	1.000	
10 Acculturative stress	0.013	0.009	-0.032	-0.107	0.023	0.104	**0.401** ***	**0.283** ***	**0.272** ***	1.000

Bold text = significant at $p<0.05$; * $p<0.05$, ** $p<0.01$, *** $p<0.001$

Table 3.3 continued.

		1 Moderate physical activity	2 Strenuous physical activity	3 Alcohol consump-tion	4 Fruit consump-tion	5 Vegetable consump-tion	6 Body mass index	7 General stress	8 Lifetime discrimi-nation	9 Day-to-day discrimi-nation	10 Accultur-ative stress
11	Neighborhood safety	-0.028	0.057	-0.023	0.016	**0.160** **	**-0.100** *	-0.222 ***	-0.093	**-0.150** **	**-0.268** ***
12	Neighborhood problems	0.078	0.095	**0.155** **	-0.007	-0.053	**0.180** ***	**0.130** **	**0.182** ***	**0.265** ***	**0.174** **
13	Collective efficacy	**0.131** **	**0.130** **	**0.113** *	**0.231** ***	**0.125** *	0.024	-0.022	0.031	**-0.118** *	-0.063
14	REI[56] (sqrt)[57]	-0.067	-0.065	-0.074	0.019	-0.016	0.060	-0.071	0.025	0.019	0.080
15	RFEI3[58] (sqrt)	**-0.123** *	**-0.120** *	**-0.098** *	-0.049	-0.064	-0.012	-0.013	**0.106** *	0.077	0.065
16	Number of liquor stores (sqrt)	0.022	0.023	0.078	**0.136** **	0.017	0.002	0.049	0.003	-0.052	0.067
17	Number of recreational facilities (sqrt)	0.024	0.064	0.050	**0.114** *	0.026	-0.010	0.069	-0.021	-0.063	0.029
18	Number of parks (sqrt)	0.059	0.034	0.061	**0.119** *	0.016	**0.109** *	0.061	-0.068	-0.065	0.065
19	Alpha	0.023	-0.007	-0.013	0.029	0.062	0.082	0.025	-0.069	-0.083	0.041
20	Gamma	0.023	-0.006	-0.007	0.029	0.053	0.084	0.029	-0.067	-0.082	0.042

Bold text = significant at $p<0.05$; * $p<0.05$, ** $p<0.01$, *** $p<0.001$

[56] REI = Restaurant Environment Index = (fast food)/(other restaurants + other food stores)
[57] sqrt = transformed by taking the square-root
[58] RFEI = Retail Food Environment Index = (convenience stores + fast food)/(supermarkets + farmers markets)

Table 3.3 continued.

		1 Moderate physical activity	2 Strenuous physical activity	3 Alcohol consump-tion	4 Fruit consump-tion	5 Vegetable consump-tion	6 Body mass index	7 General stress	8 Lifetime discrimi-nation	9 Day-to-day discrimi-nation	10 Accultur-ative stress
21	Traffic density (sqrt)[59]	-0.020	0.017	0.072	0.004	-0.031	0.049	0.020	0.045	0.026	0.098
22	Age	-0.024	-0.045	**-0.147** **	**0.159** **	0.039	-0.004	**-0.117** *	**-0.145** **	**-0.270** ***	-0.053
23	Years lived in current residence	0.038	0.065	-0.016	-0.011	0.008	-0.032	**-0.111** *	-0.041	0.010	**-0.124** *
24	US-born	**0.155** **	**0.192** ***	**0.291** ***	**-0.102** *	-0.059	**0.192** ***	**-0.134** **	0.058	**0.133** **	---- ----
25	Homeowner	-0.038	0.013	0.043	0.034	0.085	**-0.157** ***	-0.082	-0.018)	0.034	**-0.244** ***
26	Public Insurance/Not insured	0.023	-0.075	**-0.110** *	0.001	-0.031	**0.141** **	0.064	-0.027	**-0.124** **	**0.172** **
27	High neighborhood SES[60]	-0.042	-0.006	**0.099** *	-0.036	0.064	**-0.116** *	-0.087	0.063	**0.096** *	**-0.183** **
28	High API[61] enclave	-0.036	**-0.113** *	**-0.194** ***	-0.016	-0.022	-0.071	0.063	-0.025	-0.011	0.042

Bold text = significant at $p<0.05$; * $p<0.05$, ** $p<0.01$, *** $p<0.001$

[59] sqrt = transformed by taking the square-root
[60] SES = socioeconomic status
[61] API = Asian or Pacific Islander

Table 3.3 continued.

	11 Neighbor-hood safety	**12** Neighbor-hood problems	**13** Collective efficacy	**14** REI[62] (sqrt)[63]	**15** RFEI3[64] (sqrt)	**16** Number of liquor stores (sqrt)	**17** Number of recreation-al facilities (sqrt)	**18** Number of parks (sqrt)	**19** Alpha	**20** Gamma
11 Neighborhood safety	1.000									
12 Neighborhood problems	**-0.280** ***	1.000								
13 Collective efficacy	0.091	-0.035	1.000							
14 REI (sqrt)	-0.024	-0.048	-0.095	1.000						
15 RFEI3 (sqrt)	-0.037	**-0.112** *	**-0.143** **	**0.585** ***	1.000					
16 Number of liquor stores (sqrt)	**-0.146** **	**0.167** **	**0.113** *	0.006	**-0.149** **	1.000				
17 Number of recreational facilities (sqrt)	-0.086	**0.169** ***	**0.110** *	-0.061	**-0.147** **	**0.884** ***	1.000			
18 Number of parks (sqrt)	**-0.145** **	**0.167** **	**0.120** *	-0.071	**-0.145** **	**0.604** ***	**0.636** ***	1.000		
19 Alpha	**-0.115** *	**0.232** ***	0.028	-0.016	**-0.201** ***	**0.395** ***	**0.392** ***	**0.410** ***	1.000	
20 Gamma	**-0.125** **	**0.238** ***	0.029	-0.016	**-0.202** ***	**0.420** ***	**0.420** ***	**0.426** ***	**0.996** ***	1.000

Bold text = significant at p<0.05; * p<0.05, ** p<0.01, *** p<0.001

[62] REI = Restaurant Environment Index = (fast food)/(other restaurants + other food stores)
[63] sqrt = transformed by taking the square-root
[64] RFEI = Retail Food Environment Index = (convenience stores + fast food)/(supermarkets + farmers markets)

Table 3.3 continued.

	11 Neighbor-hood safety	12 Neighbor-hood problems	13 Collective efficacy	14 REI[65] (sqrt)[66]	15 RFEI3[67] (sqrt)	16 Number of liquor stores (sqrt)	17 Number of recreation-al facilities (sqrt)	18 Number of parks (sqrt)	19 Alpha	20 Gamma
21 Traffic density (sqrt)	-0.070	**0.153** **	0.013	0.077	-0.001	**0.479** ***	**0.498** ***	**0.360** ***	**0.391** ***	**0.393** ***
22 Age	-0.014	**-0.208** ***	0.047	-0.027	-0.066	0.042	0.029	**0.095** *	-0.032	-0.024
23 Years lived in current residence	0.072	-0.061	**0.113** *	0.004	-0.045	**-0.101** *	-0.056	-0.091	**-0.136** **	**-0.135** **
24 US-born	0.025	**0.220** ***	0.053	-0.086	-0.074	-0.059	-0.033	-0.033	-0.025	-0.022
25 Homeowner	**0.158** **	-0.073	0.069	-0.047	-0.035	**-0.288** ***	**-0.263** ***	**-0.292** ***	**-0.147** **	**-0.164** **
26 Public Insurance/Not insured	**-0.230** ***	0.021	-0.019	**0.103** *	-0.004	**0.178** ***	**0.125** *	**0.231** ***	**0.115** *	**0.125** **
27 High neighborhood SES[68]	**0.182** ***	-0.037	0.041	**-0.234** ***	-0.043	**-0.332** ***	**-0.224** ***	**-0.288** ***	**-0.193** ***	**-0.200** ***
28 High API[69] enclave	-0.061	0.025	**-0.099** *	**0.179** ***	**0.178** ***	**0.117** **	**0.123** **	**0.167** ***	**0.149** **	**0.156** ***

Bold text = significant at p<0.05; * p<0.05, ** p<0.01, *** p<0.001

[65] REI = Restaurant Environment Index = (fast food)/(other restaurants + other food stores)
[66] sqrt = transformed by taking the square-root
[67] RFEI = Retail Food Environment Index = (convenience stores + fast food)/(supermarkets + farmers markets)
[68] SES = socioeconomic status
[69] API = Asian or Pacific Islander

Table 3.3 continued.

	21 Traffic density (sqrt)[70]	22 Age	23 Years lived in current residence	24 US-born	25 Home-owner	26 Public insurance/ Not insured	27 High neighbor-hood SES[71]	28 High API[72] enclave
21 Traffic density (sqrt)	1.000							
22 Age	-0.021	1.000						
23 Years lived in current residence	**-0.156** **	**0.275** ***	1.000					
24 US-born	-0.027	**-0.172** ***	**0.186** ***	1.000				
25 Homeowner	**-0.284** ***	**-0.140** **	**0.348** ***	**0.109** *	1.000			
26 Public Insurance/Not insured	**0.180** ***	**0.355** ***	**-0.135** **	**-0.214** ***	**-0.485** ***	1.000		
27 High neighborhood SES	**-0.246** ***	-0.067	**0.180** ***	**0.233** ***	**0.317** ***	**-0.349** ***	1.000	
28 High API enclave	**0.146** **	-0.011	-0.094	**-0.201** ***	**-0.101** *	**0.120** *	**-0.228** ***	1.000

Bold text = significant at p<0.05; * p<0.05, ** p<0.01, *** p<0.001

[70] sqrt = transformed by taking the square-root
[71] SES = socioeconomic status
[72] API = Asian or Pacific Islander

Table 4A.1: Logistic regression of odds of breast cancer on general stress and covariates. Asian Community Health Initiative, N=581

	Odds of having breast cancer OR (se)	
VARIABLES	Model 1	Model 2
General stress	0.90	0.97
	(0.14)	(0.19)
Age (10 years, centered at 59)		4.80**
		(0.98)
Marital status (ref = Married)		
Formerly married		1.25
		(0.42)
Single		1.57
		(0.69)
Asian ethnicity (ref = Chinese)		
Filipina		2.23
		(0.95)
Other AANHPI		1.69
		(0.58)
Survey language (ref = English)		
Chinese		1.26
		(0.50)
Tagalog		0.80
		(0.51)
US-born (ref = Foreign-born)		0.39*
		(0.13)
Education (ref = College graduate)		
<=High school		1.97
		(0.74)
Some college		0.74
		(0.26)
Employment (ref = Full time)		
Part time		0.69
		(0.24)
Not working		1.09
		(0.32)
Homeowner (ref = renter/other non-homeowner)		2.32*
		(0.71)
Public insurance/Other/Not insured (ref = private		0.43†

insurance)		
		(0.16)
Ever pregnant (ref = never pregnant)		1.05
		(0.53)
Number of pregnancies		1.18
		(0.21)
Age at first birth		1.05
		(0.032)
Number of months breastfed		0.99
		(0.0095)
Age at first menstrual period		0.92
		(0.069)
Any family history of breast cancer (ref = none)		2.12*
		(0.61)
Menopausal status (ref = premenopausal)		
Post-menopausal, no hormone therapy		0.052**
		(0.022)
Post-menopausal, used hormone therapy		0.11**
		(0.058)
Constant	0.41†	0.66
	(0.17)	(0.77)

Standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4A.2: Logistic regression of odds of breast cancer on lifetime discrimination and covariates.
Asian Community Health Initiative, N=611

	Odds of having breast cancer OR (se)	
VARIABLES	Model 1	Model 2
Lifetime discrimination	0.98 (0.041)	1.04 (0.056)
Age (10 years, centered at 59)		5.08** (1.04)
Marital status (ref = Married)		
Formerly married		1.20 (0.40)
Single		1.41 (0.59)
Asian ethnicity (ref = Chinese)		
Filipina		2.26 (0.95)
Other AANHPI		1.62 (0.55)
Survey language (ref = English)		
Chinese		1.30 (0.51)
Tagalog		0.89 (0.56)
US-born (ref = Foreign-born)		0.40* (0.13)
Education (ref = College graduate)		
<=High school		2.04 (0.77)
Some college		0.75 (0.26)
Employment (ref = Full time)		
Part time		0.70 (0.25)
Not working		1.13 (0.33)
Homeowner (ref = renter/other non-homeowner)		2.44* (0.74)
Public insurance/Other/Not insured (ref = private		0.41†

insurance)		
		(0.15)
Ever pregnant (ref = never pregnant)		1.04
		(0.51)
Number of pregnancies		1.16
		(0.20)
Age at first birth		1.05
		(0.031)
Number of months breastfed		0.99
		(0.0095)
Age at first menstrual period		0.92
		(0.068)
Any family history of breast cancer (ref = none)		2.19*
		(0.63)
Menopausal status (ref = premenopausal)		
Post-menopausal, no hormone therapy		0.051**
		(0.021)
Post-menopausal, used hormone therapy		0.11**
		(0.055)
Constant	0.31**	0.50
	(0.049)	(0.55)

Standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4A.3: Logistic regression of odds of breast cancer on day-to-day discrimination and covariates.
Asian Community Health Initiative, N=611

	Odds of having breast cancer OR (se)	
VARIABLES	Model 1	Model 2
Day-to-day discrimination	0.75	1.01
	(0.16)	(0.27)
Age (10 years, centered at 59)		4.97**
		(1.01)
Marital status (ref = Married)		
Formerly married		1.23
		(0.41)
Single		1.45
		(0.61)
Asian ethnicity (ref = Chinese)		
Filipina		2.19
		(0.92)
Other AANHPI		1.62
		(0.55)
Survey language (ref = English)		
Chinese		1.33
		(0.52)
Tagalog		0.84
		(0.53)
US-born (ref = Foreign-born)		0.40*
		(0.13)
Education (ref = College graduate)		
<=High school		2.04
		(0.77)
Some college		0.76
		(0.26)
Employment (ref = Full time)		
Part time		0.72
		(0.25)
Not working		1.14
		(0.33)
Homeowner (ref = renter/other non-homeowner)		2.39*
		(0.73)
Public insurance/Other/Not insured (ref = private insurance)		0.40*
		(0.15)
Ever pregnant (ref = never pregnant)		1.04

		(0.51)
Number of pregnancies		1.16
		(0.20)
Age at first birth		1.05
		(0.031)
Number of months breastfed		0.99
		(0.0095)
Age at first menstrual period		0.92
		(0.068)
Any family history of breast cancer (ref = none)		2.19*
		(0.63)
Menopausal status (ref = premenopausal)		
Post-menopausal, no hormone therapy		0.052**
		(0.021)
Post-menopausal, used hormone therapy		0.11**
		(0.055)
Constant	0.33**	0.59
	(0.045)	(0.64)

Standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4A.4: Logistic regression of odds of breast cancer on acculturative stress and covariates.
Asian Community Health Initiative, foreign-born sample only, N=422

	Odds of having breast cancer OR (se)	
VARIABLES	Model 1	Model 2
Acculturative stress	0.96	1.91
	(0.26)	(0.69)
Age (10 years, centered at 59)		5.91**
		(1.49)
Marital status (ref = Married)		
Formerly married		1.11
		(0.43)
Single		1.68
		(0.90)
Asian ethnicity (ref = Chinese)		
Filipina		3.67*
		(1.86)
Other AANHPI		2.81†
		(1.34)
Survey language (ref = English)		
Chinese		1.76
		(0.82)
Tagalog		0.75
		(0.49)
Education (ref = College graduate)		
<=High school		1.89
		(0.79)
Some college		0.82
		(0.33)
Employment (ref = Full time)		
Part time		0.70
		(0.30)
Not working		1.27
		(0.43)
Homeowner (ref = renter/other non-homeowner)		2.24†
		(0.78)
Public insurance/Other/Not insured (ref = private insurance)		0.32*

		(0.13)
Ever pregnant (ref = never pregnant)		0.74
		(0.44)
Number of pregnancies		1.20
		(0.23)
Age at first birth		1.03
		(0.037)
Number of months breastfed		0.99
		(0.011)
Age at first menstrual period		0.99
		(0.084)
Any family history of breast cancer (ref = none)		2.42*
		(0.82)
Menopausal status (ref = premenopausal)		
Post-menopausal, no hormone therapy		0.035**
		(0.018)
Post-menopausal, used hormone therapy		0.10**
		(0.060)
Constant	0.38†	0.087†
	(0.16)	(0.12)

Standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4A.5: Logistic regression of odds of breast cancer on neighborhood safety and covariates.

Asian Community Health Initiative, N=536		
	Odds of having breast cancer OR (se)	
VARIABLES	Model 1	Model 2
Neighborhood safety	1.26	1.37
	(0.19)	(0.25)
Age (10 years, centered at 59)		7.29**
		(1.90)
Marital status (ref = Married)		
Formerly married		1.21
		(0.50)
Single		2.01
		(0.89)
Asian ethnicity (ref = Chinese)		
Filipina		3.03†
		(1.43)
Other AANHPI		1.68
		(0.70)
Survey language (ref = English)		
Chinese		1.53
		(0.62)
Tagalog		0.34
		(0.26)
US-born (ref = Foreign-born)		0.57
		(0.23)
Education (ref = College graduate)		
<=High school		2.70†
		(1.17)
Some college		1.08
		(0.44)
Employment (ref = Full time)		
Part time		0.78
		(0.34)
Not working		1.11
		(0.36)
Homeowner (ref = renter/other non-homeowner)		3.80**
		(1.54)

Public insurance/Other/Not insured (ref = private insurance)		0.50
		(0.27)
Ever pregnant (ref = never pregnant)		0.93
		(0.50)
Number of pregnancies		1.17
		(0.24)
Age at first birth		1.06
		(0.035)
Number of months breastfed		0.99
		(0.011)
Age at first menstrual period		0.87
		(0.078)
Any family history of breast cancer (ref = none)		2.59*
		(0.88)
Menopausal status (ref = premenopausal)		
Post-menopausal, no hormone therapy		0.043**
		(0.019)
Post-menopausal, used hormone therapy		0.068**
		(0.037)
High neighborhood SES (ref = low neighborhood SES)		1.91
		(0.64)
High API enclave (ref = low API enclave)		2.87*
		(1.11)
Urbanicity (ref = metropolitan urban)		
Non-metropolitan city/Rural		3.29
		(2.23)
Metropolitan suburb		1.06
		(0.33)
Years lived at current address		0.95**
		(0.015)
Constant	0.12**	0.072
	(0.060)	(0.11)

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4A.6: Logistic regression of odds of breast cancer on neighborhood problems and covariates.

Asian Community Health Initiative, N=535

	Odds of having breast cancer OR (se)	
VARIABLES	Model 1	Model 2
Neighborhood problems	0.94	0.99
	(0.044)	(0.056)
Age (10 years, centered at 59)		7.11**
		(1.84)
Marital status (ref = Married)		
Formerly married		1.28
		(0.53)
Single		1.93
		(0.85)
Asian ethnicity (ref = Chinese)		
Filipina		2.75†
		(1.27)
Other AANHPI		1.64
		(0.67)
Survey language (ref = English)		
Chinese		1.47
		(0.59)
Tagalog		0.34
		(0.27)
US-born (ref = Foreign-born)		0.56
		(0.22)
Education (ref = College graduate)		
<=High school		2.32
		(1.00)
Some college		0.98
		(0.40)
Employment (ref = Full time)		
Part time		0.71
		(0.32)
Not working		1.11
		(0.36)
Homeowner (ref = renter/other non-homeowner)		4.07**
		(1.69)
Public insurance/Other/Not insured (ref = private insurance)		0.46
		(0.25)
Ever pregnant (ref = never pregnant)		0.89
		(0.47)

Number of pregnancies		1.20
		(0.24)
Age at first birth		1.05
		(0.034)
Number of months breastfed		0.99
		(0.011)
Age at first menstrual period		0.85†
		(0.073)
Any family history of breast cancer (ref = none)		2.43*
		(0.80)
Menopausal status (ref = premenopausal)		
Post-menopausal, no hormone therapy		0.047**
		(0.021)
Post-menopausal, used hormone therapy		0.070**
		(0.037)
High neighborhood SES (ref = low neighborhood SES)		1.82
		(0.61)
High API enclave (ref = low API enclave)		2.77*
		(1.05)
Urbanicity (ref = metropolitan urban)		
Non-metropolitan city/Rural		3.73†
		(2.42)
Metropolitan suburb		1.12
		(0.34)
Years lived at current address		0.95*
		(0.015)
Constant	0.29**	0.35
	(0.041)	(0.46)

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4A.7: Logistic regression of odds of breast cancer on collective efficacy and covariates.
Asian Community Health Initiative, N=546

	Odds of having breast cancer OR (se)	
VARIABLES	Model 1	Model 2
Collective efficacy	0.83	0.85
	(0.13)	(0.16)
Age (10 years, centered at 59)		7.13**
		(1.78)
Marital status (ref = Married)		
Formerly married		1.21
		(0.48)
Single		2.02
		(0.89)
Asian ethnicity (ref = Chinese)		
Filipina		3.13*
		(1.43)
Other AANHPI		2.07
		(0.82)
Survey language (ref = English)		
Chinese		1.36
		(0.54)
Tagalog		0.30
		(0.23)
US-born (ref = Foreign-born)		0.56
		(0.21)
Education (ref = College graduate)		
<=High school		2.96*
		(1.19)
Some college		0.92
		(0.39)
Employment (ref = Full time)		
Part time		0.77
		(0.32)
Not working		1.03
		(0.32)
Homeowner (ref = renter/other non-homeowner)		4.15**
		(1.61)
Public insurance/Other/Not insured (ref = private		0.47

insurance)		
		(0.24)
Ever pregnant (ref = never pregnant)		1.00
		(0.51)
Number of pregnancies		1.20
		(0.22)
Age at first birth		1.06
		(0.033)
Number of months breastfed		0.99
		(0.011)
Age at first menstrual period		0.87
		(0.072)
Any family history of breast cancer (ref = none)		2.38*
		(0.77)
Menopausal status (ref = premenopausal)		
Post-menopausal, no hormone therapy		0.046**
		(0.020)
Post-menopausal, used hormone therapy		0.084**
		(0.043)
High neighborhood SES (ref = low neighborhood SES)		1.99†
		(0.64)
High API enclave (ref = low API enclave)		2.55*
		(0.92)
Urbanicity (ref = metropolitan urban)		
Non-metropolitan city/Rural		2.94
		(1.86)
Metropolitan suburb		1.02
		(0.31)
Years lived at current address		0.95**
		(0.015)
Constant	0.36**	0.30
	(0.090)	(0.39)

Robust standard errors in parentheses

** p<0.001, * p<0.0167, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4A.8: Logistic regression of odds of breast cancer on general stress moderated by neighborhood safety and covariates.
Asian Community Health Initiative, N=536

	Odds of having breast cancer OR (se)	
VARIABLES	Model 1	Model 2
General stress	3.09	5.86#
	(2.38)	(4.99)
Neighborhood safety	2.78	5.94
	(2.46)	(5.86)
General stress x neighborhood safety	0.72	0.59
	(0.18)	(0.17)
Age (10 years, centered at 59)		7.59**
		(2.04)
Marital status (ref = Married)		
Formerly married		1.17
		(0.48)
Single		1.92
		(0.85)
Asian ethnicity (ref = Chinese)		
Filipina		2.79#
		(1.34)
Other AANHPI		1.71
		(0.70)
Survey language (ref = English)		
Chinese		1.55
		(0.63)
Tagalog		0.34
		(0.27)
US-born (ref = Foreign-born)		0.57
		(0.22)
Education (ref = College graduate)		
<=High school		2.66#
		(1.14)
Some college		1.09
		(0.45)
Employment (ref = Full time)		
Part time		0.82
		(0.36)

Not working		1.16
		(0.38)
Homeowner (ref = renter/other non-homeowner)		4.08**
		(1.69)
Public insurance/Other/Not insured (ref = private insurance)		0.48
		(0.27)
Ever pregnant (ref = never pregnant)		0.84
		(0.46)
Number of pregnancies		1.21
		(0.26)
Age at first birth		1.06
		(0.035)
Number of months breastfed		0.99
		(0.011)
Age at first menstrual period		0.84
		(0.076)
Any family history of breast cancer (ref = none)		2.54*
		(0.86)
Menopausal status (ref = premenopausal)		
Post-menopausal, no hormone therapy		0.042**
		(0.019)
Post-menopausal, used hormone therapy		0.064**
		(0.037)
High neighborhood SES (ref = low neighborhood SES)		1.77
		(0.60)
High API enclave (ref = low API enclave)		3.04*
		(1.17)
Urbanicity (ref = metropolitan urban)		
Non-metropolitan city/Rural		3.43
		(2.32)
Metropolitan suburb		1.15
		(0.37)
Years lived at current address		0.95**
		(0.015)
Constant	0.0067	0.000056*
	(0.018)	(0.00018)

Robust standard errors in parentheses. ** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0006 is considered significant. Continuous covariates are centered at the mean,

including age, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, and years lived at current address.

Table 4A.9: Logistic regression of odds of breast cancer on day-to-day discrimination moderated by neighborhood safety and covariates. Asian Community Health Initiative, N=536

	Odds of having breast cancer OR (se)	
VARIABLES	Model 1	Model 2
Day-to-day discrimination	0.35	1.26
	(0.37)	(1.86)
Neighborhood safety	1.10	1.40
	(0.23)	(0.34)
Day-to-day discrimination x neighborhood safety	1.34	0.99
	(0.44)	(0.44)
Age (10 years, centered at 59)		7.41**
		(1.91)
Marital status (ref = Married)		
Formerly married		1.17
		(0.48)
Single		1.96
		(0.88)
Asian ethnicity (ref = Chinese)		
Filipina		3.08†
		(1.47)
Other AANHPI		1.68
		(0.70)
Survey language (ref = English)		
Chinese		1.57
		(0.63)
Tagalog		0.35
		(0.27)
US-born (ref = Foreign-born)		0.58
		(0.23)
Education (ref = College graduate)		
<=High school		2.66†
		(1.14)
Some college		1.06
		(0.44)
Employment (ref = Full time)		
Part time		0.79
		(0.35)
Not working		1.10

		(0.36)
Homeowner (ref = renter/other non-homeowner)		3.86**
		(1.56)
Public insurance/Other/Not insured (ref = private insurance)		0.51
		(0.27)
Ever pregnant (ref = never pregnant)		0.92
		(0.50)
Number of pregnancies		1.18
		(0.24)
Age at first birth		1.06
		(0.035)
Number of months breastfed		0.99
		(0.011)
Age at first menstrual period		0.88
		(0.078)
Any family history of breast cancer (ref = none)		2.56*
		(0.86)
Menopausal status (ref = premenopausal)		
Post-menopausal, no hormone therapy		0.043**
		(0.019)
Post-menopausal, used hormone therapy		0.067**
		(0.037)
High neighborhood SES (ref = low neighborhood SES)		1.88
		(0.63)
High API enclave (ref = low API enclave)		2.81†
		(1.10)
Urbanicity (ref = metropolitan urban)		
Non-metropolitan city/Rural		3.25
		(2.24)
Metropolitan suburb		1.05
		(0.33)
Years lived at current address		0.95**
		(0.015)
Constant	0.19†	0.0069**
	(0.14)	(0.0086)

Robust standard errors in parentheses. ** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0006 is considered significant. Continuous covariates are centered at the mean, including age, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, and years lived at current address.

Table 4A.10: Logistic regression of odds of breast cancer on acculturative stress moderated by neighborhood safety and covariates.
Asian Community Health Initiative, foreign-born sample only, N=372

	Odds of having breast cancer OR (se)	
VARIABLES	Model 1	Model 2
Acculturative stress	1.02	2.84
	(1.31)	(4.20)
Neighborhood safety	1.18	1.61
	(0.75)	(1.21)
Acculturative stress x neighborhood safety	0.99	0.92
	(0.39)	(0.46)
Age (10 years, centered at 59)		10.1**
		(3.60)
Marital status (ref = Married)		
Formerly married		1.20
		(0.60)
Single		3.34†
		(1.99)
Asian ethnicity (ref = Chinese)		
Filipina		7.43*
		(4.61)
Other AANHPI		5.41*
		(3.15)
Survey language (ref = English)		
Chinese		2.73†
		(1.32)
Tagalog		0.30
		(0.23)
Education (ref = College graduate)		
<=High school		2.41
		(1.28)
Some college		1.34
		(0.69)
Employment (ref = Full time)		
Part time		0.88
		(0.47)
Not working		1.36
		(0.53)

Homeowner (ref = renter/other non-homeowner)		4.96*
		(2.57)
Public insurance/Other/Not insured (ref = private insurance)		0.37
		(0.25)
Ever pregnant (ref = never pregnant)		0.45
		(0.29)
Number of pregnancies		1.34
		(0.28)
Age at first birth		1.08
		(0.046)
Number of months breastfed		0.99
		(0.012)
Age at first menstrual period		0.98
		(0.092)
Any family history of breast cancer (ref = none)		2.97†
		(1.31)
Menopausal status (ref = premenopausal)		
Post-menopausal, no hormone therapy		0.020**
		(0.012)
Post-menopausal, used hormone therapy		0.047**
		(0.035)
High neighborhood SES (ref = low neighborhood SES)		1.84
		(0.71)
High API enclave (ref = low API enclave)		5.31*
		(2.73)
Urbanicity (ref = metropolitan urban)		
Non-metropolitan city/Rural		2.56
		(1.98)
Metropolitan suburb		1.00
		(0.39)
Years lived at current address		0.93**
		(0.019)
Constant	0.18	0.00067†
	(0.39)	(0.0018)

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0006 is considered significant. Continuous covariates are centered at the mean, including age, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, and years lived at current address.

Table 4A.11: Logistic regression of odds of breast cancer on general stress moderated by neighborhood problems and covariates.
Asian Community Health Initiative, N=535

	Odds of having breast cancer OR (se)	
VARIABLES	Model 1	Model 2
General stress	0.77	0.85
	(0.20)	(0.23)
Neighborhood problems	0.74	0.79
	(0.18)	(0.20)
General stress x neighborhood problems	1.09	1.08
	(0.084)	(0.094)
Age (10 years, centered at 59)		7.11**
		(1.84)
Marital status (ref = Married)		
Formerly married		1.31
		(0.55)
Single		1.93
		(0.83)
Asian ethnicity (ref = Chinese)		
Filipina		2.78†
		(1.29)
Other AANHPI		1.69
		(0.69)
Survey language (ref = English)		
Chinese		1.50
		(0.62)
Tagalog		0.34
		(0.27)
US-born (ref = Foreign-born)		0.57
		(0.23)
Education (ref = College graduate)		
<=High school		2.32
		(1.00)
Some college		0.98
		(0.40)
Employment (ref = Full time)		
Part time		0.73
		(0.32)
Not working		1.13

		(0.37)
Homeowner (ref = renter/other non-homeowner)		4.21**
		(1.78)
Public insurance/Other/Not insured (ref = private insurance)		0.44
		(0.24)
Ever pregnant (ref = never pregnant)		0.88
		(0.46)
Number of pregnancies		1.21
		(0.24)
Age at first birth		1.05
		(0.035)
Number of months breastfed		0.99
		(0.011)
Age at first menstrual period		0.85
		(0.074)
Any family history of breast cancer (ref = none)		2.38†
		(0.79)
Menopausal status (ref = premenopausal)		
Post-menopausal, no hormone therapy		0.047**
		(0.020)
Post-menopausal, used hormone therapy		0.073**
		(0.038)
High neighborhood SES (ref = low neighborhood SES)		1.81
		(0.62)
High API enclave (ref = low API enclave)		2.75†
		(1.04)
Urbanicity (ref = metropolitan urban)		
Non-metropolitan city/Rural		3.67†
		(2.35)
Metropolitan suburb		1.12
		(0.35)
Years lived at current address		0.95*
		(0.016)
Constant	0.58	0.038*
	(0.40)	(0.040)

Robust standard errors in parentheses. ** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0006 is considered significant. Continuous covariates are centered at the mean, including age, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, and years lived at current address.

Table 4A.12: Logistic regression of odds of breast cancer on day-to-day discrimination moderated by neighborhood problems and covariates. Asian Community Health Initiative, N=535

	Odds of having breast cancer OR (se)	
VARIABLES	Model 1	Model 2
Day-to-day discrimination	1.02	1.07
	(0.36)	(0.43)
Neighborhood problems	0.96	0.97
	(0.062)	(0.073)
Day-to-day discrimination x neighborhood problems	0.97	1.03
	(0.080)	(0.10)
Age (10 years, centered at 59)		7.24**
		(1.85)
Marital status (ref = Married)		
Formerly married		1.26
		(0.53)
Single		1.91
		(0.84)
Asian ethnicity (ref = Chinese)		
Filipina		2.77†
		(1.29)
Other AANHPI		1.64
		(0.68)
Survey language (ref = English)		
Chinese		1.49
		(0.60)
Tagalog		0.35
		(0.28)
US-born (ref = Foreign-born)		0.57
		(0.23)
Education (ref = College graduate)		
<=High school		2.30
		(0.99)
Some college		0.97
		(0.41)
Employment (ref = Full time)		
Part time		0.72
		(0.32)
Not working		1.11

		(0.37)
Homeowner (ref = renter/other non-homeowner)		4.16**
		(1.72)
Public insurance/Other/Not insured (ref = private insurance)		0.45
		(0.25)
Ever pregnant (ref = never pregnant)		0.88
		(0.47)
Number of pregnancies		1.21
		(0.24)
Age at first birth		1.05
		(0.034)
Number of months breastfed		0.99
		(0.011)
Age at first menstrual period		0.85
		(0.073)
Any family history of breast cancer (ref = none)		2.40†
		(0.79)
Menopausal status (ref = premenopausal)		
Post-menopausal, no hormone therapy		0.047**
		(0.021)
Post-menopausal, used hormone therapy		0.071**
		(0.038)
High neighborhood SES (ref = low neighborhood SES)		1.78
		(0.60)
High API enclave (ref = low API enclave)		2.73†
		(1.04)
Urbanicity (ref = metropolitan urban)		
Non-metropolitan city/Rural		3.71†
		(2.42)
Metropolitan suburb		1.11
		(0.34)
Years lived at current address		0.95*
		(0.016)
Constant	0.29**	0.025**
	(0.057)	(0.022)

Robust standard errors in parentheses. ** $p<0.001$, * $p<0.006$, † $p<0.05$
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0006 is considered significant. Continuous covariates are centered at the mean, including age, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, and years lived at current address.

Table 4A.13: Logistic regression of odds of breast cancer on acculturative stress moderated by neighborhood problems and covariates.
Asian Community Health Initiative, foreign-born sample only, N=371

	Odds of having breast cancer OR (se)	
VARIABLES	Model 1	Model 2
Acculturative stress	1.03	2.31
	(0.46)	(1.42)
Neighborhood problems	1.09	1.12
	(0.20)	(0.28)
Acculturative stress x neighborhood problems	0.95	0.94
	(0.10)	(0.14)
Age (10 years, centered at 59)		9.77**
		(3.43)
Marital status (ref = Married)		
Formerly married		1.32
		(0.69)
Single		2.86
		(1.71)
Asian ethnicity (ref = Chinese)		
Filipina		6.37*
		(3.77)
Other AANHPI		5.14*
		(2.77)
Survey language (ref = English)		
Chinese		2.69†
		(1.23)
Tagalog		0.30
		(0.25)
Education (ref = College graduate)		
<=High school		1.95
		(0.98)
Some college		1.13
		(0.59)
Employment (ref = Full time)		
Part time		0.84
		(0.45)
Not working		1.38
		(0.56)

Homeowner (ref = renter/other non-homeowner)		5.30*
		(2.71)
Public insurance/Other/Not insured (ref = private insurance)		0.35
		(0.24)
Ever pregnant (ref = never pregnant)		0.40
		(0.25)
Number of pregnancies		1.38
		(0.28)
Age at first birth		1.07
		(0.044)
Number of months breastfed		0.99
		(0.011)
Age at first menstrual period		0.94
		(0.083)
Any family history of breast cancer (ref = none)		2.69†
		(1.13)
Menopausal status (ref = premenopausal)		
Post-menopausal, no hormone therapy		0.022**
		(0.013)
Post-menopausal, used hormone therapy		0.047**
		(0.032)
High neighborhood SES (ref = low neighborhood SES)		1.74
		(0.67)
High API enclave (ref = low API enclave)		5.09*
		(2.59)
Urbanicity (ref = metropolitan urban)		
Non-metropolitan city/Rural		2.93
		(2.08)
Metropolitan suburb		1.06
		(0.38)
Years lived at current address		0.94**
		(0.019)
Constant	0.30†	0.0035**
	(0.20)	(0.0048)

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0006 is considered significant. Continuous covariates are centered at the mean, including age, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, and years lived at current address.

Table 4A.14: Logistic regression of odds of breast cancer on general stress moderated by collective efficacy and covariates.
Asian Community Health Initiative, N=546

	Odds of having breast cancer OR (se)	
VARIABLES	Model 1	Model 2
General stress	0.49	0.47
	(0.18)	(0.22)
Collective efficacy	0.26†	0.22†
	(0.17)	(0.16)
General stress x collective efficacy	1.56	1.70
	(0.37)	(0.48)
Age (10 years, centered at 59)		7.14**
		(1.80)
Marital status (ref = Married)		
Formerly married		1.15
		(0.46)
Single		2.00
		(0.86)
Asian ethnicity (ref = Chinese)		
Filipina		3.15†
		(1.47)
Other AANHPI		2.01
		(0.79)
Survey language (ref = English)		
Chinese		1.32
		(0.53)
Tagalog		0.28†
		(0.21)
US-born (ref = Foreign-born)		0.55
		(0.22)
Education (ref = College graduate)		
<=High school		3.07*
		(1.25)
Some college		0.90
		(0.39)
Employment (ref = Full time)		
Part time		0.78
		(0.32)
Not working		1.03

		(0.32)
Homeowner (ref = renter/other non-homeowner)		3.95**
		(1.51)
Public insurance/Other/Not insured (ref = private insurance)		0.45
		(0.22)
Ever pregnant (ref = never pregnant)		0.96
		(0.49)
Number of pregnancies		1.22
		(0.23)
Age at first birth		1.07†
		(0.034)
Number of months breastfed		0.99
		(0.011)
Age at first menstrual period		0.87
		(0.073)
Any family history of breast cancer (ref = none)		2.42†
		(0.80)
Menopausal status (ref = premenopausal)		
Post-menopausal, no hormone therapy		0.048**
		(0.021)
Post-menopausal, used hormone therapy		0.092**
		(0.047)
High neighborhood SES (ref = low neighborhood SES)		2.03†
		(0.65)
High API enclave (ref = low API enclave)		2.71*
		(0.97)
Urbanicity (ref = metropolitan urban)		
Non-metropolitan city/Rural		2.92†
		(1.86)
Metropolitan suburb		1.01
		(0.30)
Years lived at current address		0.94**
		(0.015)
Constant	2.28	0.22
	(2.28)	(0.32)

Robust standard errors in parentheses. ** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0006 is considered significant. Continuous covariates are centered at the mean, including age, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, and years lived at current address.

Table 4A.15: Logistic regression of odds of breast cancer on day-to-day discrimination moderated by collective efficacy and covariates. Asian Community Health Initiative, N=546

	Odds of having breast cancer OR (se)	
VARIABLES	Model 1	Model 2
Day-to-day discrimination	0.21†	0.24
	(0.12)	(0.18)
Collective efficacy	0.57*	0.56†
	(0.11)	(0.13)
Day-to-day discrimination x collective efficacy	2.50*	2.70†
	(0.81)	(1.18)
Age (10 years, centered at 59)		7.17**
		(1.80)
Marital status (ref = Married)		
Formerly married		1.21
		(0.49)
Single		2.18
		(0.95)
Asian ethnicity (ref = Chinese)		
Filipina		2.96†
		(1.35)
Other AANHPI		1.97
		(0.79)
Survey language (ref = English)		
Chinese		1.31
		(0.51)
Tagalog		0.28
		(0.21)
US-born (ref = Foreign-born)		0.55
		(0.22)
Education (ref = College graduate)		
<=High school		2.92†
		(1.19)
Some college		0.94
		(0.40)
Employment (ref = Full time)		
Part time		0.81
		(0.35)
Not working		1.02
		(0.32)

Homeowner (ref = renter/other non-homeowner)		3.91**
		(1.52)
Public insurance/Other/Not insured (ref = private insurance)		0.47
		(0.24)
Ever pregnant (ref = never pregnant)		1.03
		(0.53)
Number of pregnancies		1.22
		(0.23)
Age at first birth		1.07†
		(0.033)
Number of months breastfed		0.99
		(0.011)
Age at first menstrual period		0.87
		(0.075)
Any family history of breast cancer (ref = none)		2.36†
		(0.78)
Menopausal status (ref = premenopausal)		
Post-menopausal, no hormone therapy		0.047**
		(0.020)
Post-menopausal, used hormone therapy		0.085**
		(0.044)
High neighborhood SES (ref = low neighborhood SES)		1.97†
		(0.63)
High API enclave (ref = low API enclave)		2.66†
		(0.99)
Urbanicity (ref = metropolitan urban)		
Non-metropolitan city/Rural		2.85
		(1.85)
Metropolitan suburb		0.99
		(0.30)
Years lived at current address		0.95**
		(0.015)
Constant	0.70	0.056*
	(0.22)	(0.050)

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0006 is considered significant. Continuous covariates are centered at the mean, including age, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, and years lived at current address.

Table 4A.16: Logistic regression of odds of breast cancer on acculturative stress moderated by collective efficacy and covariates.
Asian Community Health Initiative, foreign-born sample only, N=380

	Odds of having breast cancer OR (se)	
VARIABLES	Model 1	Model 2
Acculturative stress	0.22	0.24
	(0.18)	(0.22)
Collective efficacy	0.25†	0.14†
	(0.16)	(0.11)
Acculturative stress x collective efficacy	2.43†	3.75†
	(1.04)	(1.82)
Age (10 years, centered at 59)		9.96**
		(3.46)
Marital status (ref = Married)		
Formerly married		1.18
		(0.58)
Single		3.61†
		(2.13)
Asian ethnicity (ref = Chinese)		
Filipina		7.18**
		(4.07)
Other AANHPI		5.81**
		(3.08)
Survey language (ref = English)		
Chinese		2.25
		(1.00)
Tagalog		0.20
		(0.17)
Education (ref = College graduate)		
<=High school		2.97†
		(1.51)
Some college		1.20
		(0.63)
Employment (ref = Full time)		
Part time		0.69
		(0.37)
Not working		1.12
		(0.42)
Homeowner (ref = renter/other non-homeowner)		5.73**

		(2.99)
Public insurance/Other/Not insured (ref = private insurance)		0.36
		(0.23)
Ever pregnant (ref = never pregnant)		0.65
		(0.43)
Number of pregnancies		1.30
		(0.27)
Age at first birth		1.06
		(0.044)
Number of months breastfed		0.99
		(0.012)
Age at first menstrual period		0.92
		(0.082)
Any family history of breast cancer (ref = none)		3.21*
		(1.34)
Menopausal status (ref = premenopausal)		
Post-menopausal, no hormone therapy		0.024**
		(0.013)
Post-menopausal, used hormone therapy		0.060**
		(0.037)
High neighborhood SES (ref = low neighborhood SES)		1.89
		(0.69)
High API enclave (ref = low API enclave)		5.06*
		(2.63)
Urbanicity (ref = metropolitan urban)		
Non-metropolitan city/Rural		2.69
		(1.97)
Metropolitan suburb		0.93
		(0.33)
Years lived at current address		0.93**
		(0.018)
Constant	3.47	0.068
	(4.10)	(0.11)

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0006 is considered significant. Continuous covariates are centered at the mean, including age, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, and years lived at current address.

Table 4B.1: Ordinary least squares regression of moderate physical activity on general stress and covariates.
Asian Community Health Initiative, N=435

	Moderate physical activity (hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
General stress	-0.79*	-0.79*	-0.82*
	(0.29)	(0.30)	(0.29)
Age (10 years, centered at 59)		-0.15	-0.29
		(0.16)	(0.17)
Marital status (ref = Married)			
Formerly married		0.46	0.23
		(0.50)	(0.51)
Single		-0.27	-0.18
		(0.46)	(0.47)
Asian ethnicity (ref = Chinese)			
Filipina		-0.41	-0.49
		(0.60)	(0.60)
Other AANHPI		0.076	-0.16
		(0.45)	(0.46)
Survey language (ref = English)			
Chinese		0.86	-0.14
		(0.53)	(0.60)
Tagalog		-0.058	-0.73
		(0.86)	(0.89)
US-born (ref = Foreign-born)		1.18*	1.04†
		(0.43)	(0.43)
Education (ref = College graduate)			
<=High school			2.07**
			(0.60)
Some college			1.23*
			(0.47)
Employment (ref = Full time)			
Part time			0.26
			(0.44)
Not working			0.49
			(0.44)
Homeowner (ref = renter/other non-homeowner)			-0.071
			(0.40)

Public insurance/Other/Not insured (ref = private insurance)			-0.44
			(0.50)
Constant	7.24**	6.64**	6.52**
	(0.78)	(0.86)	(0.96)
R-squared	0.017	0.049	0.084
Model Comparisons:			
Wald F		1.77	2.65
Wald Prob>F		0.081	0.016
Wald df		8, 425	6, 419

Standard errors in parentheses

** p<0.001, * p<0.0125, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4B.2: Ordinary least squares regression of moderate physical activity on lifetime discrimination and covariates.
Asian Community Health Initiative, N=446

	Moderate physical activity (hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Lifetime discrimination	0.033	0.0037	-0.0068
	(0.073)	(0.075)	(0.075)
Age (10 years, centered at 59)		-0.066	-0.21
		(0.16)	(0.17)
Marital status (ref = Married)			
Formerly married		0.31	0.092
		(0.51)	(0.51)
Single		-0.32	-0.23
		(0.47)	(0.47)
Asian ethnicity (ref = Chinese)			
Filipina		-0.51	-0.59
		(0.61)	(0.61)
Other AANHPI		0.041	-0.19
		(0.46)	(0.46)
Survey language (ref = English)			
Chinese		0.63	-0.37
		(0.53)	(0.60)
Tagalog		-0.092	-0.77
		(0.87)	(0.90)
US-born (ref = Foreign-born)		1.26*	1.14*
		(0.44)	(0.43)
Education (ref = College graduate)			
<=High school			2.11**
			(0.60)
Some college			1.21*
			(0.48)
Employment (ref = Full time)			
Part time			0.20
			(0.45)
Not working			0.39
			(0.44)
Homeowner (ref = renter/other non-homeowner)			-0.0098
			(0.41)

Public insurance/Other/Not insured (ref = private insurance)			-0.40
			(0.51)
Constant	5.04**	4.62**	4.44**
	(0.28)	(0.47)	(0.63)
R-squared	0.000	0.033	0.067
<u>Model Comparisons:</u>			
Wald F		1.79	2.53
Wald Prob>F		0.076	0.020
Wald df		8, 425	6, 419

Standard errors in parentheses

** $p<0.001$, * $p<0.0125$, † $p<0.05$

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4B.3: Ordinary least squares regression of moderate physical activity on day-to-day discrimination and covariates.
Asian Community Health Initiative, N=435

	Moderate physical activity (hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Day-to-day discrimination	-0.19	-0.30	-0.47
	(0.37)	(0.39)	(0.39)
Age (10 years, centered at 59)		-0.097	-0.25
		(0.16)	(0.17)
Marital status (ref = Married)			
Formerly married		0.36	0.16
		(0.51)	(0.51)
Single		-0.28	-0.17
		(0.47)	(0.47)
Asian ethnicity (ref = Chinese)			
Filipina		-0.48	-0.55
		(0.61)	(0.61)
Other AANHPI		0.080	-0.14
		(0.46)	(0.46)
Survey language (ref = English)			
Chinese		0.62	-0.42
		(0.52)	(0.60)
Tagalog		-0.13	-0.84
		(0.87)	(0.90)
US-born (ref = Foreign-born)		1.26*	1.14*
		(0.43)	(0.43)
Education (ref = College graduate)			
<=High school			2.16**
			(0.60)
Some college			1.29*
			(0.48)
Employment (ref = Full time)			
Part time			0.18
			(0.45)
Not working			0.39
			(0.44)
Homeowner (ref = renter/other non-homeowner)			-0.028
			(0.41)

Public insurance/Other/Not insured (ref = private insurance)			-0.43
			(0.51)
Constant	5.24**	4.75**	4.62**
	(0.24)	(0.44)	(0.61)
R-squared	0.001	0.034	0.070
Model Comparisons:			
Wald F		1.86	2.68
Wald Prob>F		0.064	0.015
Wald df		8, 425	6, 419

Standard errors in parentheses

** p<0.001, * p<0.0125, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4B.4: Ordinary least squares regression of moderate physical activity on acculturative stress and covariates.
Asian Community Health Initiative, foreign-born sample only, N=283

	Moderate physical activity (hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Acculturative stress	0.077	-0.018	-0.31
	(0.52)	(0.56)	(0.57)
Age (10 years, centered at 59)		0.0056	-0.12
		(0.21)	(0.23)
Marital status (ref = Married)			
Formerly married		-0.11	-0.36
		(0.60)	(0.61)
Single		-0.23	-0.20
		(0.71)	(0.72)
Asian ethnicity (ref = Chinese)			
Filipina		-1.14	-1.26
		(0.75)	(0.76)
Other AANHPI		-0.11	-0.19
		(0.72)	(0.72)
Survey language (ref = English)			
Chinese		0.38	-0.45
		(0.63)	(0.69)
Tagalog		0.36	-0.17
		(0.91)	(0.95)
Education (ref = College graduate)			
<=High school			1.57†
			(0.69)
Some college			0.67
			(0.63)
Employment (ref = Full time)			
Part time			-0.081
			(0.57)
Not working			0.37
			(0.57)
Homeowner (ref = renter/other non-homeowner)			-0.76
			(0.53)
Public insurance/Other/Not insured (ref = private insurance)			-0.45

			(0.64)
Constant	4.67**	4.95**	5.87**
	(0.82)	(0.89)	(1.13)
R-squared	0.000	0.024	0.059
<u>Model Comparisons:</u>			
Wald F		0.98	1.63
Wald Prob>F		0.45	0.14
Wald df		7, 274	6, 268

Standard errors in parentheses
** $p<0.001$, * $p<0.0125$, † $p<0.05$
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4B.5: Ordinary least squares regression of moderate physical activity on neighborhood safety and covariates.
Asian Community Health Initiative, N=418

	Moderate physical activity (hrs/week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Neighborhood safety	-0.13	-0.095	0.052	0.052
	(0.24)	(0.24)	(0.25)	(0.26)
Age (10 years, centered at 59)		-0.072	-0.22	-0.26
		(0.16)	(0.17)	(0.18)
Marital status (ref = Married)				
Formerly married		0.28	0.036	0.060
		(0.57)	(0.57)	(0.57)
Single		-0.29	-0.24	-0.27
		(0.45)	(0.46)	(0.46)
Asian ethnicity (ref = Chinese)				
Filipina		-0.24	-0.27	-0.29
		(0.60)	(0.60)	(0.61)
Other AANHPI		0.15	-0.077	-0.12
		(0.46)	(0.46)	(0.47)
Survey language (ref = English)				
Chinese		0.69	-0.40	-0.37
		(0.52)	(0.60)	(0.60)
Tagalog		-0.086	-0.88	-0.80
		(0.90)	(0.95)	(0.97)
US-born (ref = Foreign-born)		1.40*	1.30*	1.27*
		(0.43)	(0.44)	(0.45)
Education (ref = College graduate)				
<=High school			2.26**	2.25**
			(0.65)	(0.67)
Some college			1.08†	1.05†
			(0.51)	(0.51)
Employment (ref = Full time)				
Part time			0.32	0.28
			(0.43)	(0.44)
Not working			0.38	0.39
			(0.46)	(0.47)
Homeowner (ref = renter/other non-homeowner)			-0.13	-0.17
			(0.46)	(0.52)

Public insurance/Other/Not insured (ref = private insurance)			-0.29	-0.31
			(0.57)	(0.58)
High neighborhood SES (ref = low neighborhood SES)				-0.23
				(0.42)
High API enclave (ref = low API enclave)				-0.38
				(0.41)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				-0.062
				(0.84)
Metropolitan suburb				0.10
				(0.39)
Years lived at current address				0.0071
				(0.022)
Constant	5.58**	4.82**	4.19**	4.54**
	(0.79)	(0.94)	(1.11)	(1.17)
R-squared	0.001	0.035	0.072	0.075
<u>Model Comparisons:</u>				
Wald F		1.86	2.64	0.28
Wald Prob>F		0.065	0.016	0.93
Wald df		8, 363	6, 363	5, 363

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4B.6: Ordinary least squares regression of moderate physical activity on neighborhood problems and covariates. Asian Community Health Initiative, N=418

	Moderate physical activity (hrs/week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Neighborhood problems	0.10	0.053	0.027	0.037
	(0.070)	(0.073)	(0.070)	(0.073)
Age (10 years, centered at 59)		-0.047	-0.20	-0.24
		(0.17)	(0.18)	(0.18)
Marital status (ref = Married)				
Formerly married		0.25	0.025	0.052
		(0.57)	(0.57)	(0.57)
Single		-0.33	-0.26	-0.29
		(0.44)	(0.45)	(0.46)
Asian ethnicity (ref = Chinese)				
Filipina		-0.21	-0.27	-0.29
		(0.60)	(0.60)	(0.61)
Other AANHPI		0.14	-0.098	-0.14
		(0.45)	(0.46)	(0.46)
Survey language (ref = English)				
Chinese		0.69	-0.40	-0.36
		(0.51)	(0.60)	(0.60)
Tagalog		-0.11	-0.87	-0.79
		(0.90)	(0.95)	(0.96)
US-born (ref = Foreign-born)		1.35*	1.27*	1.23*
		(0.44)	(0.44)	(0.46)
Education (ref = College graduate)				
<=High school			2.23**	2.22**
			(0.65)	(0.67)
Some college			1.05†	1.02†
			(0.50)	(0.50)
Employment (ref = Full time)				
Part time			0.33	0.28
			(0.43)	(0.44)
Not working			0.39	0.39
			(0.46)	(0.47)
Homeowner (ref = renter/other non-homeowner)			-0.11	-0.17
			(0.47)	(0.52)
Public insurance/Other/Not insured (ref =			-0.32	-0.34

private insurance)				
			(0.57)	(0.58)
High neighborhood SES (ref = low neighborhood SES)				-0.23
				(0.42)
High API enclave (ref = low API enclave)				-0.38
				(0.41)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				0.014
				(0.85)
Metropolitan suburb				0.16
				(0.40)
Years lived at current address				0.0078
				(0.022)
Constant	4.94**	4.42**	4.32**	4.62**
	(0.23)	(0.42)	(0.65)	(0.82)
R-squared	0.006	0.036	0.072	0.076
<u>Model Comparisons:</u>				
Wald F		1.66	2.55	0.30
Wald Prob>F		0.11	0.020	0.91
Wald df		8, 363	6, 363	5, 363

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4B.7: Ordinary least squares regression of moderate physical activity on collective efficacy and covariates.
Asian Community Health Initiative, N=418

	Moderate physical activity (hrs/week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Collective efficacy	0.68*	0.59†	0.58†	0.57†
	(0.25)	(0.26)	(0.26)	(0.26)
Age (10 years, centered at 59)		-0.088	-0.23	-0.26
		(0.16)	(0.17)	(0.18)
Marital status (ref = Married)				
Formerly married		0.38	0.13	0.16
		(0.59)	(0.58)	(0.59)
Single		-0.078	-0.046	-0.061
		(0.46)	(0.46)	(0.47)
Asian ethnicity (ref = Chinese)				
Filipina		-0.15	-0.23	-0.27
		(0.60)	(0.59)	(0.61)
Other AANHPI		0.12	-0.13	-0.16
		(0.45)	(0.46)	(0.46)
Survey language (ref = English)				
Chinese		0.70	-0.43	-0.41
		(0.50)	(0.61)	(0.60)
Tagalog		0.043	-0.74	-0.67
		(0.93)	(0.97)	(0.99)
US-born (ref = Foreign-born)		1.34*	1.23*	1.21*
		(0.43)	(0.43)	(0.45)
Education (ref = College graduate)				
<=High school			2.25**	2.23*
			(0.66)	(0.67)
Some college			1.03†	1.00†
			(0.49)	(0.49)
Employment (ref = Full time)				
Part time			0.22	0.18
			(0.43)	(0.44)
Not working			0.32	0.33
			(0.45)	(0.46)
Homeowner (ref = renter/other non-homeowner)			-0.16	-0.20
			(0.46)	(0.51)
Public insurance/Other/Not insured (ref =			-0.32	-0.33

private insurance)				
			(0.55)	(0.57)
High neighborhood SES (ref = low neighborhood SES)				-0.26
				(0.41)
High API enclave (ref = low API enclave)				-0.30
				(0.40)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				0.031
				(0.85)
Metropolitan suburb				0.18
				(0.38)
Years lived at current address				0.0054
				(0.022)
Constant	4.14**	3.57**	3.55**	3.83**
	(0.41)	(0.59)	(0.76)	(0.89)
R-squared	0.017	0.047	0.084	0.086
Model Comparisons:				
Wald F		1.68	2.51	0.25
Wald Prob>F		0.10	0.021	0.94
Wald df		8, 363	6, 363	5, 363

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4B.8: Ordinary least squares regression of moderate physical activity on general stress moderated by neighborhood safety and covariates. Asian Community Health Initiative, N=418

VARIABLES	*Moderate physical activity (hrs/week): b(se)* Model 1
General stress	-1.33
	(1.30)
Neighborhood safety	-0.52
	(1.14)
General stress X neighborhood safety	0.16
	(0.39)
Age (10 years, centered at 59)	-0.34
	(0.18)
Marital status (ref = Married)	
Formerly married	0.16
	(0.56)
Single	-0.23
	(0.45)
Asian ethnicity (ref = Chinese)	
Filipina	-0.22
	(0.60)
Other AANHPI	-0.12
	(0.47)
Survey language (ref = English)	
Chinese	-0.16
	(0.61)
Tagalog	-0.70
	(0.96)
US-born (ref = Foreign-born)	1.17†
	(0.46)
Education (ref = College graduate)	
<=High school	2.18*
	(0.67)
Some college	1.05†
	(0.51)
Employment (ref = Full time)	
Part time	0.36
	(0.45)

Not working	0.48
	(0.47)
Homeowner (ref = renter/other non-homeowner)	-0.20
	(0.52)
Public insurance/Other/Not insured (ref = private insurance)	-0.38
	(0.59)
High neighborhood SES (ref = low neighborhood SES)	-0.20
	(0.42)
High API enclave (ref = low API enclave)	-0.40
	(0.40)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.10
	(0.83)
Metropolitan suburb	0.022
	(0.39)
Years lived at current address	0.0069
	(0.022)
Constant	8.55†
	(3.97)
R-squared	0.091

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4B.9: Ordinary least squares regression of moderate physical activity on day-to-day discrimination moderated by neighborhood safety and covariates. Asian Community Health Initiative, N=418

	Moderate physical activity (hrs/week): b(se)
VARIABLES	Model 1
Day-to-day discrimination	1.50
	(1.81)
Neighborhood safety	0.31
	(0.36)
Day-to-day discrimination X neighborhood safety	-0.65
	(0.56)
Age (10 years, centered at 59)	-0.32
	(0.18)
Marital status (ref = Married)	
Formerly married	0.082
	(0.59)
Single	-0.25
	(0.46)
Asian ethnicity (ref = Chinese)	
Filipina	-0.29
	(0.62)
Other AANHPI	-0.098
	(0.47)
Survey language (ref = English)	
Chinese	-0.36
	(0.60)
Tagalog	-0.76
	(1.00)
US-born (ref = Foreign-born)	1.26*
	(0.45)
Education (ref = College graduate)	
<=High school	2.30**
	(0.67)
Some college	1.17†
	(0.51)
Employment (ref = Full time)	
Part time	0.20

	(0.45)
Not working	0.39
	(0.46)
Homeowner (ref = renter/other non-homeowner)	-0.26
	(0.52)
Public insurance/Other/Not insured (ref = private insurance)	-0.39
	(0.58)
High neighborhood SES (ref = low neighborhood SES)	-0.17
	(0.41)
High API enclave (ref = low API enclave)	-0.30
	(0.41)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	0.031
	(0.85)
Metropolitan suburb	0.14
	(0.39)
Years lived at current address	0.011
	(0.022)
Constant	3.85†
	(1.42)
R-squared	0.082

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4B.10: Ordinary least squares regression of moderate physical activity on acculturative stress moderated by neighborhood safety and covariates. Asian Community Health Initiative, N=275

	Moderate physical activity (hrs/week): b(se)
VARIABLES	Model 1
Acculturative stress	3.46
	(1.88)
Neighborhood safety	2.19†
	(0.98)
Acculturative stress X neighborhood safety	-1.31†
	(0.57)
Age (10 years, centered at 59)	-0.21
	(0.26)
Marital status (ref = Married)	
Formerly married	-0.36
	(0.72)
Single	-0.0027
	(0.68)
Asian ethnicity (ref = Chinese)	
Filipina	-0.91
	(0.78)
Other AANHPI	0.077
	(0.72)
Survey language (ref = English)	
Chinese	-0.24
	(0.70)
Tagalog	-0.11
	(1.03)
Education (ref = College graduate)	
<=High school	1.79†
	(0.79)
Some college	0.69
	(0.69)
Employment (ref = Full time)	
Part time	-0.091
	(0.53)
Not working	0.32

	(0.60)
Homeowner (ref = renter/other non-homeowner)	-0.91
	(0.66)
Public insurance/Other/Not insured (ref = private insurance)	-0.24
	(0.73)
High neighborhood SES (ref = low neighborhood SES)	-0.37
	(0.49)
High API enclave (ref = low API enclave)	-0.29
	(0.57)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	0.76
	(0.95)
Metropolitan suburb	0.49
	(0.49)
Years lived at current address	-0.0082
	(0.029)
Constant	-0.71
	(3.50)
R-squared	0.088

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4B.11: Ordinary least squares regression of moderate physical activity on general stress moderated by neighborhood problems and covariates. Asian Community Health Initiative, N=418

	Moderate physical activity (hrs/week): b(se)
VARIABLES	Model 1
General stress	-0.85†
	(0.36)
Neighborhood problems	0.031
	(0.31)
General stress X neighborhood problems	0.011
	(0.10)
Age (10 years, centered at 59)	-0.31
	(0.18)
Marital status (ref = Married)	
Formerly married	0.14
	(0.57)
Single	-0.27
	(0.45)
Asian ethnicity (ref = Chinese)	
Filipina	-0.20
	(0.60)
Other AANHPI	-0.13
	(0.47)
Survey language (ref = English)	
Chinese	-0.13
	(0.61)
Tagalog	-0.74
	(0.95)
US-born (ref = Foreign-born)	1.11†
	(0.46)
Education (ref = College graduate)	
<=High school	2.18*
	(0.67)
Some college	1.05†
	(0.50)
Employment (ref = Full time)	
Part time	0.36

	(0.45)
Not working	0.49
	(0.47)
Homeowner (ref = renter/other non-homeowner)	-0.20
	(0.51)
Public insurance/Other/Not insured (ref = private insurance)	-0.40
	(0.59)
High neighborhood SES (ref = low neighborhood SES)	-0.21
	(0.41)
High API enclave (ref = low API enclave)	-0.39
	(0.40)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.046
	(0.84)
Metropolitan suburb	0.11
	(0.40)
Years lived at current address	0.0070
	(0.022)
Constant	6.80**
	(1.29)
R-squared	0.092

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4B.12: Ordinary least squares regression of moderate physical activity on day-to-day discrimination moderated by neighborhood problems and covariates. Asian Community Health Initiative, N=418

	Moderate physical activity (hrs/week): b(se)
VARIABLES	Model 1
Day-to-day discrimination	-0.63
	(0.55)
Neighborhood problems	0.046
	(0.10)
Day-to-day discrimination X neighborhood problems	0.018
	(0.11)
Age (10 years, centered at 59)	-0.30
	(0.19)
Marital status (ref = Married)	
Formerly married	0.13
	(0.58)
Single	-0.24
	(0.46)
Asian ethnicity (ref = Chinese)	
Filipina	-0.23
	(0.61)
Other AANHPI	-0.069
	(0.47)
Survey language (ref = English)	
Chinese	-0.40
	(0.60)
Tagalog	-0.87
	(0.96)
US-born (ref = Foreign-born)	1.21†
	(0.46)
Education (ref = College graduate)	
<=High school	2.27**
	(0.67)
Some college	1.11†
	(0.50)
Employment (ref = Full time)	
Part time	0.25

	(0.44)
Not working	0.38
	(0.47)
Homeowner (ref = renter/other non-homeowner)	-0.20
	(0.52)
Public insurance/Other/Not insured (ref = private insurance)	-0.38
	(0.58)
High neighborhood SES (ref = low neighborhood SES)	-0.21
	(0.42)
High API enclave (ref = low API enclave)	-0.36
	(0.41)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	0.086
	(0.86)
Metropolitan suburb	0.20
	(0.40)
Years lived at current address	0.0097
	(0.022)
Constant	4.78**
	(0.85)
R-squared	0.080

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4B.13: Ordinary least squares regression of moderate physical activity on acculturative stress moderated by neighborhood problems and covariates. Asian Community Health Initiative, N=275

	Moderate physical activity (hrs/week): b(se)
VARIABLES	Model 1
Acculturative stress	-0.68
	(0.84)
Neighborhood problems	-0.11
	(0.33)
Acculturative stress X neighborhood problems	0.082
	(0.20)
Age (10 years, centered at 59)	-0.14
	(0.26)
Marital status (ref = Married)	
Formerly married	-0.30
	(0.70)
Single	-0.0014
	(0.68)
Asian ethnicity (ref = Chinese)	
Filipina	-0.98
	(0.78)
Other AANHPI	0.028
	(0.73)
Survey language (ref = English)	
Chinese	-0.40
	(0.69)
Tagalog	-0.27
	(1.04)
Education (ref = College graduate)	
<=High school	1.76†
	(0.78)
Some college	0.60
	(0.68)
Employment (ref = Full time)	
Part time	0.0048
	(0.54)
Not working	0.33

	(0.61)
Homeowner (ref = renter/other non-homeowner)	-0.86
	(0.66)
Public insurance/Other/Not insured (ref = private insurance)	-0.27
	(0.74)
High neighborhood SES (ref = low neighborhood SES)	-0.32
	(0.49)
High API enclave (ref = low API enclave)	-0.35
	(0.57)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	0.74
	(0.96)
Metropolitan suburb	0.47
	(0.51)
Years lived at current address	-0.0067
	(0.029)
Constant	6.39**
	(1.67)
R-squared	0.071

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4B.14: Ordinary least squares regression of moderate physical activity on general stress moderated by collective efficacy and covariates. Asian Community Health Initiative, N=418

	Moderate physical activity (hrs/week): b(se)
VARIABLES	Model 1
General stress	-0.99
	(0.67)
Collective efficacy	0.22
	(1.17)
General stress X collective efficacy	0.13
	(0.41)
Age (10 years, centered at 59)	-0.34
	(0.18)
Marital status (ref = Married)	
Formerly married	0.25
	(0.58)
Single	-0.036
	(0.46)
Asian ethnicity (ref = Chinese)	
Filipina	-0.18
	(0.59)
Other AANHPI	-0.15
	(0.46)
Survey language (ref = English)	
Chinese	-0.19
	(0.61)
Tagalog	-0.66
	(0.99)
US-born (ref = Foreign-born)	1.13†
	(0.45)
Education (ref = College graduate)	
<=High school	2.21*
	(0.67)
Some college	1.05†
	(0.50)
Employment (ref = Full time)	
Part time	0.27

	(0.45)
Not working	0.43
	(0.46)
Homeowner (ref = renter/other non-homeowner)	-0.23
	(0.51)
Public insurance/Other/Not insured (ref = private insurance)	-0.39
	(0.58)
High neighborhood SES (ref = low neighborhood SES)	-0.22
	(0.42)
High API enclave (ref = low API enclave)	-0.31
	(0.40)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.046
	(0.84)
Metropolitan suburb	0.090
	(0.38)
Years lived at current address	0.0042
	(0.022)
Constant	6.42*
	(2.10)
R-squared	0.102

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4B.15: Ordinary least squares regression of moderate physical activity on day-to-day discrimination moderated by collective efficacy and covariates. Asian Community Health Initiative, N=418

VARIABLES	*Moderate physical activity (hrs/week): b(se)* Model 1
Day-to-day discrimination	0.022
	(0.95)
Collective efficacy	0.68
	(0.38)
Day-to-day discrimination X collective efficacy	-0.29
	(0.56)
Age (10 years, centered at 59)	-0.30
	(0.19)
Marital status (ref = Married)	
Formerly married	0.19
	(0.59)
Single	-0.0021
	(0.47)
Asian ethnicity (ref = Chinese)	
Filipina	-0.22
	(0.61)
Other AANHPI	-0.092
	(0.46)
Survey language (ref = English)	
Chinese	-0.44
	(0.60)
Tagalog	-0.72
	(1.00)
US-born (ref = Foreign-born)	1.22†
	(0.45)
Education (ref = College graduate)	
<=High school	2.29**
	(0.68)
Some college	1.08†
	(0.50)
Employment (ref = Full time)	
Part time	0.15

	(0.44)
Not working	0.33
	(0.46)
Homeowner (ref = renter/other non-homeowner)	-0.20
	(0.52)
Public insurance/Other/Not insured (ref = private insurance)	-0.34
	(0.58)
High neighborhood SES (ref = low neighborhood SES)	-0.24
	(0.42)
High API enclave (ref = low API enclave)	-0.30
	(0.41)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	0.012
	(0.84)
Metropolitan suburb	0.19
	(0.38)
Years lived at current address	0.0062
	(0.022)
Constant	3.78**
	(1.04)
R-squared	0.089

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4B.16: Ordinary least squares regression of moderate physical activity on acculturative stress moderated by collective efficacy and covariates. Asian Community Health Initiative, N=275

	Moderate physical activity (hrs/week): b(se)
VARIABLES	Model 1
Acculturative stress	0.15
	(1.38)
Collective efficacy	0.78
	(1.16)
Acculturative stress X collective efficacy	-0.36
	(0.73)
Age (10 years, centered at 59)	-0.14
	(0.26)
Marital status (ref = Married)	
Formerly married	-0.33
	(0.72)
Single	0.12
	(0.69)
Asian ethnicity (ref = Chinese)	
Filipina	-0.98
	(0.78)
Other AANHPI	-0.011
	(0.73)
Survey language (ref = English)	
Chinese	-0.41
	(0.70)
Tagalog	-0.19
	(1.06)
Education (ref = College graduate)	
<=High school	1.75†
	(0.78)
Some college	0.59
	(0.67)
Employment (ref = Full time)	
Part time	-0.088
	(0.54)
Not working	0.27

	(0.62)
Homeowner (ref = renter/other non-homeowner)	-0.84
	(0.66)
Public insurance/Other/Not insured (ref = private insurance)	-0.23
	(0.73)
High neighborhood SES (ref = low neighborhood SES)	-0.37
	(0.49)
High API enclave (ref = low API enclave)	-0.35
	(0.57)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	0.73
	(0.95)
Metropolitan suburb	0.50
	(0.49)
Years lived at current address	-0.0084
	(0.029)
Constant	4.87†
	(2.37)
R-squared	0.073

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4C.1: Ordinary least squares regression of strenuous physical activity on general stress and covariates.
Asian Community Health Initiative, N=427

	Strenuous physical activity (square root of hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
General stress	-0.099	-0.058	-0.049
	(0.081)	(0.085)	(0.084)
Age (10 years, centered at 59)		-0.011	-0.013
		(0.045)	(0.048)
Marital status (ref = Married)			
Formerly married		0.012	0.0072
		(0.14)	(0.14)
Single		-0.056	-0.025
		(0.13)	(0.13)
Asian ethnicity (ref = Chinese)			
Filipina		0.036	0.031
		(0.17)	(0.17)
Other AANHPI		0.012	-0.0084
		(0.13)	(0.13)
Survey language (ref = English)			
Chinese		0.087	-0.075
		(0.15)	(0.17)
Tagalog		-0.067	-0.14
		(0.25)	(0.25)
US-born (ref = Foreign-born)		0.42**	0.41**
		(0.12)	(0.12)
Education (ref = College graduate)			
<=High school			0.52*
			(0.17)
Some college			0.063
			(0.13)
Employment (ref = Full time)			
Part time			-0.019
			(0.13)
Not working			-0.016
			(0.12)
Homeowner (ref = renter/other non-homeowner)			-0.026

			(0.11)
Public insurance/Other/Not insured (ref = private insurance)			-0.21
			(0.14)
Constant	1.91**	1.63**	1.65**
	(0.22)	(0.25)	(0.27)
R-squared	0.003	0.038	0.063
<u>Model Comparisons:</u>			
Wald F		1.85	1.87
Wald Prob>F		0.066	0.085
Wald df		8, 417	6, 411

Standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4C.2: Ordinary least squares regression of strenuous physical activity on lifetime discrimination and covariates.
Asian Community Health Initiative, N=427

	Strenuous physical activity (square root of hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Lifetime discrimination	-0.019	-0.026	-0.024
	(0.021)	(0.021)	(0.021)
Age (10 years, centered at 59)		-0.013	-0.015
		(0.045)	(0.048)
Marital status (ref = Married)			
Formerly married		0.015	0.0085
		(0.14)	(0.14)
Single		-0.047	-0.018
		(0.13)	(0.13)
Asian ethnicity (ref = Chinese)			
Filipina		0.022	0.016
		(0.17)	(0.17)
Other AANHPI		0.019	-0.0036
		(0.13)	(0.13)
Survey language (ref = English)			
Chinese		0.079	-0.084
		(0.15)	(0.17)
Tagalog		-0.095	-0.17
		(0.25)	(0.26)
US-born (ref = Foreign-born)		0.42**	0.42**
		(0.12)	(0.12)
Education (ref = College graduate)			
<=High school			0.52*
			(0.17)
Some college			0.073
			(0.13)
Employment (ref = Full time)			
Part time			-0.012
			(0.13)
Not working			-0.019
			(0.12)
Homeowner (ref = renter/other non-homeowner)			-0.032

			(0.11)
Public insurance/Other/Not insured (ref = private insurance)			-0.21
			(0.14)
Constant	1.70**	1.56**	1.59**
	(0.079)	(0.13)	(0.18)
R-squared	0.002	0.040	0.065
<u>Model Comparisons:</u>			
Wald F		2.07	1.86
Wald Prob>F		0.038	0.087
Wald df		8, 417	6, 411

Standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4C.3: Ordinary least squares regression of strenuous physical activity on day-to-day discrimination and covariates.
Asian Community Health Initiative, N=427

	Strenuous physical activity (square root of hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Day-to-day discrimination	-0.040	-0.096	-0.11
	(0.10)	(0.11)	(0.11)
Age (10 years, centered at 59)		-0.014	-0.019
		(0.046)	(0.049)
Marital status (ref = Married)			
Formerly married		0.019	0.015
		(0.14)	(0.14)
Single		-0.046	-0.013
		(0.13)	(0.13)
Asian ethnicity (ref = Chinese)			
Filipina		0.036	0.032
		(0.17)	(0.17)
Other AANHPI		0.021	0.0012
		(0.13)	(0.13)
Survey language (ref = English)			
Chinese		0.066	-0.100
		(0.15)	(0.17)
Tagalog		-0.079	-0.15
		(0.25)	(0.25)
US-born (ref = Foreign-born)		0.42**	0.42**
		(0.12)	(0.12)
Education (ref = College graduate)			
<=High school			0.53*
			(0.17)
Some college			0.082
			(0.13)
Employment (ref = Full time)			
Part time			-0.028
			(0.13)
Not working			-0.022
			(0.12)
Homeowner (ref = renter/other non-homeowner)			-0.025

			(0.11)
Public insurance/Other/Not insured (ref = private insurance)			-0.22
			(0.14)
Constant	1.66**	1.52**	1.56**
	(0.069)	(0.13)	(0.17)
R-squared	0.000	0.038	0.065
<u>Model Comparisons:</u>			
Wald F		2.06	1.93
Wald Prob>F		0.038	0.075
Wald df		8, 417	6, 411

Standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4C.4: Ordinary least squares regression of strenuous physical activity on acculturative stress and covariates.
Asian Community Health Initiative, foreign-born sample only, N=276

	Strenuous physical activity (square root of hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Acculturative stress	0.0076	-0.023	-0.080
	(0.15)	(0.16)	(0.16)
Age (10 years, centered at 59)		-0.012	-0.023
		(0.061)	(0.066)
Marital status (ref = Married)			
Formerly married		-0.042	-0.020
		(0.17)	(0.18)
Single		-0.0016	0.0057
		(0.20)	(0.21)
Asian ethnicity (ref = Chinese)			
Filipina		0.078	0.062
		(0.22)	(0.22)
Other AANHPI		0.20	0.19
		(0.21)	(0.21)
Survey language (ref = English)			
Chinese		0.17	0.013
		(0.18)	(0.20)
Tagalog		-0.013	-0.091
		(0.27)	(0.28)
Education (ref = College graduate)			
<=High school			0.47†
			(0.20)
Some college			0.027
			(0.18)
Employment (ref = Full time)			
Part time			-0.017
			(0.17)
Not working			-0.044
			(0.17)
Homeowner (ref = renter/other non-homeowner)			-0.044
			(0.15)
Public insurance/Other/Not insured (ref = private			-0.13

insurance)

			(0.18)
Constant	1.50**	1.43**	1.56**
	(0.23)	(0.26)	(0.33)
R-squared	0.000	0.006	0.034
<u>Model Comparisons:</u>			
Wald F		0.21	1.27
Wald Prob>F		0.98	0.27
Wald df		7, 267	6, 261

Standard errors in parentheses

** p<0.001, * p<0.0125, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4C.5: Ordinary least squares regression of strenuous physical activity on neighborhood safety and covariates.
Asian Community Health Initiative, N=411

	Strenuous physical activity (square root of hrs/week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Neighborhood safety	0.072	0.070	0.082	0.094
	(0.064)	(0.065)	(0.066)	(0.066)
Age (10 years, centered at 59)		-0.016	-0.025	-0.048
		(0.047)	(0.050)	(0.054)
Marital status (ref = Married)				
Formerly married		0.0099	-0.0012	-0.011
		(0.16)	(0.16)	(0.16)
Single		-0.029	-0.00029	-0.027
		(0.12)	(0.13)	(0.13)
Asian ethnicity (ref = Chinese)				
Filipina		0.063	0.065	0.077
		(0.17)	(0.17)	(0.17)
Other AANHPI		0.019	-0.0051	-0.031
		(0.13)	(0.13)	(0.13)
Survey language (ref = English)				
Chinese		0.12	-0.080	-0.068
		(0.15)	(0.17)	(0.17)
Tagalog		-0.031	-0.12	-0.053
		(0.26)	(0.29)	(0.29)
US-born (ref = Foreign-born)		0.45**	0.44**	0.40*
		(0.12)	(0.12)	(0.12)
Education (ref = College graduate)				
<=High school			0.58*	0.60*
			(0.18)	(0.18)
Some college			0.086	0.084
			(0.14)	(0.14)
Employment (ref = Full time)				
Part time			-0.039	-0.044
			(0.13)	(0.13)
Not working			-0.024	-0.017
			(0.13)	(0.13)
Homeowner (ref = renter/other non-homeowner)			-0.0069	-0.0012

			(0.12)	(0.12)
Public insurance/Other/Not insured (ref = private insurance)			-0.17	-0.18
			(0.16)	(0.17)
High neighborhood SES (ref = low neighborhood SES)				-0.083
				(0.12)
High API enclave (ref = low API enclave)				-0.30*
				(0.11)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				-0.27
				(0.24)
Metropolitan suburb				-0.12
				(0.11)
Years lived at current address				0.0044
				(0.0064)
Constant	1.42**	1.23**	1.21**	1.49**
	(0.22)	(0.25)	(0.29)	(0.31)
R-squared	0.003	0.041	0.070	0.089
<u>Model Comparisons:</u>				
Wald F		2.19	2.09	1.64
Wald Prob>F		0.027	0.053	0.15
Wald df		8, 358	6, 358	5, 358

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4C.6: Ordinary least squares regression of strenuous physical activity on neighborhood problems and covariates. Asian Community Health Initiative, N=411

	Strenuous physical activity (square root of hrs/week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Neighborhood problems	0.036	0.022	0.021	0.020
	(0.020)	(0.021)	(0.020)	(0.021)
Age (10 years, centered at 59)		-0.0059	-0.0085	-0.035
		(0.049)	(0.052)	(0.056)
Marital status (ref = Married)				
Formerly married		-0.013	-0.0098	-0.015
		(0.16)	(0.16)	(0.16)
Single		-0.051	-0.016	-0.044
		(0.13)	(0.13)	(0.13)
Asian ethnicity (ref = Chinese)				
Filipina		0.051	0.061	0.069
		(0.17)	(0.17)	(0.17)
Other AANHPI		-0.010	-0.027	-0.053
		(0.13)	(0.13)	(0.13)
Survey language (ref = English)				
Chinese		0.077	-0.084	-0.064
		(0.15)	(0.17)	(0.17)
Tagalog		-0.048	-0.11	-0.039
		(0.27)	(0.29)	(0.29)
US-born (ref = Foreign-born)		0.42**	0.42**	0.38*
		(0.12)	(0.12)	(0.13)
Education (ref = College graduate)				
<=High school			0.54*	0.57*
			(0.17)	(0.18)
Some college			0.051	0.047
			(0.13)	(0.14)
Employment (ref = Full time)				
Part time			-0.030	-0.045
			(0.13)	(0.13)
Not working			-0.019	-0.017
			(0.13)	(0.13)
Homeowner (ref = renter/other non-homeowner)			0.0051	-0.0029
			(0.12)	(0.12)

Public insurance/Other/Not insured (ref = private insurance)			-0.21	-0.22
			(0.16)	(0.17)
High neighborhood SES (ref = low neighborhood SES)				-0.078
				(0.12)
High API enclave (ref = low API enclave)				-0.29*
				(0.11)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				-0.20
				(0.24)
Metropolitan suburb				-0.076
				(0.12)
Years lived at current address				0.0050
				(0.0064)
Constant	1.57**	1.44**	1.45**	1.74**
	(0.062)	(0.12)	(0.18)	(0.24)
R-squared	0.009	0.041	0.069	0.087
<u>Model Comparisons:</u>				
Wald F		1.81	2.07	1.60
Wald Prob>F		0.075	0.056	0.16
Wald df		8, 358	6, 358	5, 358

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4C.7: Ordinary least squares regression of strenuous physical activity on collective efficacy and covariates.
Asian Community Health Initiative, N=411

	Strenuous physical activity (square root of hrs/week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Collective efficacy	0.19*	0.18*	0.19*	0.17†
	(0.070)	(0.074)	(0.073)	(0.074)
Age (10 years, centered at 59)		-0.021	-0.024	-0.045
		(0.046)	(0.049)	(0.054)
Marital status (ref = Married)				
Formerly married		0.034	0.032	0.023
		(0.16)	(0.16)	(0.16)
Single		0.035	0.070	0.040
		(0.13)	(0.13)	(0.13)
Asian ethnicity (ref = Chinese)				
Filipina		0.068	0.071	0.077
		(0.16)	(0.16)	(0.17)
Other AANHPI		-0.015	-0.034	-0.058
		(0.13)	(0.13)	(0.13)
Survey language (ref = English)				
Chinese		0.083	-0.091	-0.078
		(0.15)	(0.17)	(0.17)
Tagalog		0.0039	-0.062	-0.00087
		(0.27)	(0.29)	(0.30)
US-born (ref = Foreign-born)		0.42**	0.42**	0.39*
		(0.12)	(0.12)	(0.12)
Education (ref = College graduate)				
<=High school			0.56*	0.57*
			(0.17)	(0.18)
Some college			0.052	0.050
			(0.13)	(0.13)
Employment (ref = Full time)				
Part time			-0.067	-0.072
			(0.13)	(0.13)
Not working			-0.036	-0.028
			(0.13)	(0.13)
Homeowner (ref = renter/other non-homeowner)			-0.013	-0.0099

			(0.12)	(0.12)
Public insurance/Other/Not insured (ref = private insurance)			-0.20	-0.21
			(0.16)	(0.16)
High neighborhood SES (ref = low neighborhood SES)				-0.081
				(0.12)
High API enclave (ref = low API enclave)				-0.27*
				(0.11)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				-0.20
				(0.23)
Metropolitan suburb				-0.084
				(0.11)
Years lived at current address				0.0039
				(0.0063)
Constant	1.36**	1.19**	1.21**	1.52**
	(0.12)	(0.17)	(0.21)	(0.25)
R-squared	0.017	0.052	0.082	0.097
<u>Model Comparisons:</u>				
Wald F		2.11	2.05	1.39
Wald Prob>F		0.034	0.058	0.23
Wald df		8, 358	6, 358	5, 358

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4C.8: Ordinary least squares regression of strenuous physical activity on general stress moderated by neighborhood safety and covariates. Asian Community Health Initiative, N=411

VARIABLES	*Strenuous physical activity (square root of hrs/week): b(se)* Model 1
General stress	-0.10
	(0.37)
Neighborhood safety	0.037
	(0.31)
General stress X neighborhood safety	0.018
	(0.11)
Age (10 years, centered at 59)	-0.052
	(0.054)
Marital status (ref = Married)	
Formerly married	-0.0056
	(0.16)
Single	-0.025
	(0.13)
Asian ethnicity (ref = Chinese)	
Filipina	0.082
	(0.17)
Other AANHPI	-0.031
	(0.13)
Survey language (ref = English)	
Chinese	-0.057
	(0.17)
Tagalog	-0.047
	(0.29)
US-born (ref = Foreign-born)	0.40*
	(0.13)
Education (ref = College graduate)	
<=High school	0.60*
	(0.18)
Some college	0.082
	(0.14)
Employment (ref = Full time)	
Part time	-0.039

	(0.13)
Not working	-0.012
	(0.13)
Homeowner (ref = renter/other non-homeowner)	-0.0022
	(0.12)
Public insurance/Other/Not insured (ref = private insurance)	-0.19
	(0.17)
High neighborhood SES (ref = low neighborhood SES)	-0.081
	(0.12)
High API enclave (ref = low API enclave)	-0.30†
	(0.11)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.27
	(0.24)
Metropolitan suburb	-0.13
	(0.11)
Years lived at current address	0.0044
	(0.0064)
Constant	1.79
	(1.11)
R-squared	0.090

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4C.9: Ordinary least squares regression of strenuous physical activity on day-to-day discrimination moderated by neighborhood safety and covariates. Asian Community Health Initiative, N=411

	Strenuous physical activity (square root of hrs/week): b(se)
VARIABLES	Model 1
Day-to-day discrimination	-0.057
	(0.53)
Neighborhood safety	0.091
	(0.11)
Day-to-day discrimination X neighborhood safety	-0.014
	(0.16)
Age (10 years, centered at 59)	-0.059
	(0.055)
Marital status (ref = Married)	
Formerly married	0.00069
	(0.17)
Single	-0.016
	(0.13)
Asian ethnicity (ref = Chinese)	
Filipina	0.085
	(0.17)
Other AANHPI	-0.019
	(0.13)
Survey language (ref = English)	
Chinese	-0.074
	(0.17)
Tagalog	-0.066
	(0.30)
US-born (ref = Foreign-born)	0.40*
	(0.12)
Education (ref = College graduate)	
<=High school	0.61**
	(0.18)
Some college	0.10
	(0.14)
Employment (ref = Full time)	
Part time	-0.049

	(0.13)
Not working	-0.016
	(0.13)
Homeowner (ref = renter/other non-homeowner)	-0.0063
	(0.12)
Public insurance/Other/Not insured (ref = private insurance)	-0.19
	(0.16)
High neighborhood SES (ref = low neighborhood SES)	-0.076
	(0.12)
High API enclave (ref = low API enclave)	-0.29†
	(0.11)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.25
	(0.24)
Metropolitan suburb	-0.12
	(0.11)
Years lived at current address	0.0047
	(0.0064)
Constant	1.52**
	(0.43)
R-squared	0.091

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4C.10: Ordinary least squares regression of strenuous physical activity on acculturative stress moderated by neighborhood safety and covariates. Asian Community Health Initiative, foreign-born sample only N=268

	Strenuous physical activity (square root of hrs/week): b(se)
VARIABLES	Model 1
Acculturative stress	1.44†
	(0.55)
Neighborhood safety	0.93*
	(0.30)
Acculturative stress X neighborhood safety	-0.50†
	(0.18)
Age (10 years, centered at 59)	-0.060
	(0.084)
Marital status (ref = Married)	
Formerly married	-0.042
	(0.20)
Single	0.046
	(0.22)
Asian ethnicity (ref = Chinese)	
Filipina	0.12
	(0.23)
Other AANHPI	0.17
	(0.21)
Survey language (ref = English)	
Chinese	0.063
	(0.21)
Tagalog	-0.019
	(0.31)
Education (ref = College graduate)	
<=High school	0.54†
	(0.22)
Some college	0.089
	(0.18)
Employment (ref = Full time)	
Part time	-0.052
	(0.16)
Not working	-0.050

	(0.18)
Homeowner (ref = renter/other non-homeowner)	-0.0064
	(0.17)
Public insurance/Other/Not insured (ref = private insurance)	-0.068
	(0.21)
High neighborhood SES (ref = low neighborhood SES)	-0.19
	(0.14)
High API enclave (ref = low API enclave)	-0.24
	(0.15)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.0084
	(0.28)
Metropolitan suburb	0.057
	(0.14)
Years lived at current address	-0.00057
	(0.0082)
Constant	-1.15
	(1.05)
R-squared	0.089

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4C.11: Ordinary least squares regression of strenuous physical activity on general stress moderated by neighborhood problems and covariates. Asian Community Health Initiative, N=411

	Strenuous physical activity (square root of hrs/week): b(se)
VARIABLES	Model 1
General stress	-0.16
	(0.11)
Neighborhood problems	-0.080
	(0.089)
General stress X neighborhood problems	0.035
	(0.029)
Age (10 years, centered at 59)	-0.042
	(0.056)
Marital status (ref = Married)	
Formerly married	0.0024
	(0.16)
Single	-0.042
	(0.13)
Asian ethnicity (ref = Chinese)	
Filipina	0.082
	(0.17)
Other AANHPI	-0.048
	(0.13)
Survey language (ref = English)	
Chinese	-0.025
	(0.18)
Tagalog	-0.042
	(0.29)
US-born (ref = Foreign-born)	0.38*
	(0.13)
Education (ref = College graduate)	
<=High school	0.56*
	(0.18)
Some college	0.055
	(0.14)
Employment (ref = Full time)	
Part time	-0.038

	(0.13)
Not working	-0.0091
	(0.13)
Homeowner (ref = renter/other non-homeowner)	-0.0097
	(0.12)
Public insurance/Other/Not insured (ref = private insurance)	-0.23
	(0.17)
High neighborhood SES (ref = low neighborhood SES)	-0.070
	(0.12)
High API enclave (ref = low API enclave)	-0.30†
	(0.11)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.21
	(0.24)
Metropolitan suburb	-0.080
	(0.12)
Years lived at current address	0.0045
	(0.0065)
Constant	2.17**
	(0.38)
R-squared	0.092

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4C.12: Ordinary least squares regression of strenuous physical activity on day-to-day discrimination moderated by neighborhood problems and covariates. Asian Community Health Initiative, N=411

VARIABLES	*Strenuous physical activity (square root of hrs/week): b(se)* Model 1
Day-to-day discrimination	-0.075
	(0.16)
Neighborhood problems	0.041
	(0.031)
Day-to-day discrimination X neighborhood problems	-0.024
	(0.032)
Age (10 years, centered at 59)	-0.051
	(0.057)
Marital status (ref = Married)	
Formerly married	-0.0058
	(0.16)
Single	-0.025
	(0.13)
Asian ethnicity (ref = Chinese)	
Filipina	0.087
	(0.17)
Other AANHPI	-0.042
	(0.14)
Survey language (ref = English)	
Chinese	-0.081
	(0.17)
Tagalog	-0.074
	(0.29)
US-born (ref = Foreign-born)	0.38*
	(0.13)
Education (ref = College graduate)	
<=High school	0.58*
	(0.18)
Some college	0.071
	(0.14)
Employment (ref = Full time)	

Part time	-0.047
	(0.13)
Not working	-0.014
	(0.13)
Homeowner (ref = renter/other non-homeowner)	-0.0073
	(0.12)
Public insurance/Other/Not insured (ref = private insurance)	-0.21
	(0.16)
High neighborhood SES (ref = low neighborhood SES)	-0.070
	(0.12)
High API enclave (ref = low API enclave)	-0.29†
	(0.11)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.18
	(0.24)
Metropolitan suburb	-0.071
	(0.12)
Years lived at current address	0.0053
	(0.0063)
Constant	1.74**
	(0.24)
R-squared	0.092

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4C.13: Ordinary least squares regression of strenuous physical activity on acculturative stress moderated by neighborhood problems and covariates. Asian Community Health Initiative, foreign-born sample only N=268

	Strenuous physical activity (square root of hrs/week): b(se)
VARIABLES	Model 1
Acculturative stress	-0.26
	(0.20)
Neighborhood problems	-0.054
	(0.10)
Acculturative stress X neighborhood problems	0.051
	(0.058)
Age (10 years, centered at 59)	-0.029
	(0.082)
Marital status (ref = Married)	
Formerly married	-0.00038
	(0.21)
Single	0.022
	(0.22)
Asian ethnicity (ref = Chinese)	
Filipina	0.092
	(0.24)
Other AANHPI	0.14
	(0.22)
Survey language (ref = English)	
Chinese	0.0095
	(0.21)
Tagalog	-0.064
	(0.32)
Education (ref = College graduate)	
<=High school	0.51†
	(0.21)
Some college	0.012
	(0.18)
Employment (ref = Full time)	
Part time	-0.0022
	(0.16)
Not working	-0.044

	(0.18)
Homeowner (ref = renter/other non-homeowner)	-0.0049
	(0.17)
Public insurance/Other/Not insured (ref = private insurance)	-0.10
	(0.21)
High neighborhood SES (ref = low neighborhood SES)	-0.16
	(0.14)
High API enclave (ref = low API enclave)	-0.25
	(0.15)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	0.024
	(0.29)
Metropolitan suburb	0.084
	(0.15)
Years lived at current address	0.0016
	(0.0084)
Constant	1.96**
	(0.45)
R-squared	0.057

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4C.14: Ordinary least squares regression of strenuous physical activity on general stress moderated by collective efficacy and covariates. Asian Community Health Initiative, N=411

	Strenuous physical activity (square root of hrs/week): b(se)
VARIABLES	Model 1
General stress	-0.30
	(0.18)
Collective efficacy	-0.26
	(0.33)
General stress X collective efficacy	0.16
	(0.11)
Age (10 years, centered at 59)	-0.058
	(0.054)
Marital status (ref = Married)	
Formerly married	0.027
	(0.16)
Single	0.030
	(0.14)
Asian ethnicity (ref = Chinese)	
Filipina	0.098
	(0.17)
Other AANHPI	-0.067
	(0.13)
Survey language (ref = English)	
Chinese	-0.054
	(0.17)
Tagalog	-0.040
	(0.30)
US-born (ref = Foreign-born)	0.39*
	(0.13)
Education (ref = College graduate)	
<=High school	0.58*
	(0.18)
Some college	0.061
	(0.13)
Employment (ref = Full time)	
Part time	-0.054

	(0.14)
Not working	-0.013
	(0.13)
Homeowner (ref = renter/other non-homeowner)	-0.012
	(0.12)
Public insurance/Other/Not insured (ref = private insurance)	-0.23
	(0.17)
High neighborhood SES (ref = low neighborhood SES)	-0.069
	(0.12)
High API enclave (ref = low API enclave)	-0.27†
	(0.11)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.19
	(0.24)
Metropolitan suburb	-0.10
	(0.11)
Years lived at current address	0.0036
	(0.0063)
Constant	2.33**
	(0.57)
R-squared	0.103

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4C.15: Ordinary least squares regression of strenuous physical activity on day-to-day discrimination moderated by collective efficacy and covariates. Asian Community Health Initiative, N=411

	Strenuous physical activity (square root of hrs/week): b(se)
VARIABLES	Model 1
Day-to-day discrimination	-0.20
	(0.23)
Collective efficacy	0.13
	(0.11)
Day-to-day discrimination X collective efficacy	0.072
	(0.13)
Age (10 years, centered at 59)	-0.057
	(0.056)
Marital status (ref = Married)	
Formerly married	0.037
	(0.16)
Single	0.044
	(0.13)
Asian ethnicity (ref = Chinese)	
Filipina	0.084
	(0.17)
Other AANHPI	-0.048
	(0.13)
Survey language (ref = English)	
Chinese	-0.082
	(0.17)
Tagalog	-0.023
	(0.30)
US-born (ref = Foreign-born)	0.39*
	(0.12)
Education (ref = College graduate)	
<=High school	0.58*
	(0.18)
Some college	0.068
	(0.13)
Employment (ref = Full time)	
Part time	-0.073

	(0.13)
Not working	-0.027
	(0.13)
Homeowner (ref = renter/other non-homeowner)	-0.018
	(0.12)
Public insurance/Other/Not insured (ref = private insurance)	-0.22
	(0.16)
High neighborhood SES (ref = low neighborhood SES)	-0.074
	(0.12)
High API enclave (ref = low API enclave)	-0.26†
	(0.11)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.19
	(0.23)
Metropolitan suburb	-0.084
	(0.11)
Years lived at current address	0.0043
	(0.0062)
Constant	1.61**
	(0.28)
R-squared	0.099

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4C.16: Ordinary least squares regression of strenuous physical activity on acculturative stress moderated by collective efficacy and covariates. Asian Community Health Initiative, foreign-born sample only N=268

	Strenuous physical activity (square root of hrs/week): b(se)
VARIABLES	Model 1
Acculturative stress	-0.20
	(0.36)
Collective efficacy	-0.015
	(0.33)
Acculturative stress X collective efficacy	0.084
	(0.20)
Age (10 years, centered at 59)	-0.033
	(0.083)
Marital status (ref = Married)	
Formerly married	-0.0024
	(0.21)
Single	0.077
	(0.22)
Asian ethnicity (ref = Chinese)	
Filipina	0.081
	(0.24)
Other AANHPI	0.12
	(0.22)
Survey language (ref = English)	
Chinese	-0.0040
	(0.21)
Tagalog	-0.031
	(0.33)
Education (ref = College graduate)	
<=High school	0.50†
	(0.22)
Some college	0.031
	(0.17)
Employment (ref = Full time)	
Part time	-0.046
	(0.17)
Not working	-0.075

	(0.18)
Homeowner (ref = renter/other non-homeowner)	0.0077
	(0.17)
Public insurance/Other/Not insured (ref = private insurance)	-0.098
	(0.21)
High neighborhood SES (ref = low neighborhood SES)	-0.16
	(0.14)
High API enclave (ref = low API enclave)	-0.23
	(0.15)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	0.027
	(0.28)
Metropolitan suburb	0.057
	(0.15)
Years lived at current address	0.00033
	(0.0083)
Constant	1.79†
	(0.70)
R-squared	0.054

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4D.1: Negative binomial regression of average weekly alcohol use on general stress and covariates.
Asian Community Health Initiative, N=447

	Average weekly alcohol use (drinks per week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
General stress	-0.29	-0.22	-0.15
	(0.18)	(0.17)	(0.17)
Age (10 years, centered at 59)		-0.078	-0.021
		(0.091)	(0.10)
Marital status (ref = Married)			
Formerly married		-0.45	-0.32
		(0.32)	(0.33)
Single		0.34	0.31
		(0.25)	(0.25)
Asian ethnicity (ref = Chinese)			
Filipina		0.11	0.23
		(0.33)	(0.34)
Other AANHPI		0.79*	0.95**
		(0.25)	(0.25)
Survey language (ref = English)			
Chinese		-0.38	0.0038
		(0.32)	(0.34)
Tagalog		-1.51†	-1.18
		(0.73)	(0.75)
US-born (ref = Foreign-born)		0.69*	0.76*
		(0.23)	(0.23)
Education (ref = College graduate)			
<=High school			-1.09*
			(0.40)
Some college			-0.43
			(0.27)
Employment (ref = Full time)			
Part time			-0.55†
			(0.27)
Not working			-0.12
			(0.24)
Homeowner (ref = renter/other non-homeowner)			0.011
			(0.24)
Public insurance/Other/Not insured (ref = private insurance)			0.17
			(0.33)
Constant	0.90	0.064	-0.050

	(0.48)	(0.50)	(0.55)
<u>Model Comparisons</u>			
Wald F		72	12.7
Wald Prob>F		0	0.047
Wald df		8	6

Robust standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4D.2: Negative binomial regression of average weekly alcohol use on lifetime discrimination and covariates.
Asian Community Health Initiative, N=447

	Average weekly alcohol use (drinks per week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Lifetime discrimination	0.071	0.042	0.055
	(0.046)	(0.042)	(0.043)
Age (10 years, centered at 59)		-0.055	0.0074
		(0.091)	(0.098)
Marital status (ref = Married)			
Formerly married		-0.48	-0.31
		(0.32)	(0.33)
Single		0.29	0.28
		(0.25)	(0.25)
Asian ethnicity (ref = Chinese)			
Filipina		0.14	0.27
		(0.33)	(0.34)
Other AANHPI		0.82**	0.98**
		(0.25)	(0.25)
Survey language (ref = English)			
Chinese		-0.44	-0.030
		(0.31)	(0.34)
Tagalog		-1.52†	-1.15
		(0.73)	(0.75)
US-born (ref = Foreign-born)		0.69*	0.76**
		(0.23)	(0.23)
Education (ref = College graduate)			
<=High school			-1.09*
			(0.40)
Some college			-0.50
			(0.27)
Employment (ref = Full time)			
Part time			-0.60†
			(0.27)
Not working			-0.16
			(0.24)
Homeowner (ref = renter/other non-homeowner)			0.046
			(0.24)
Public insurance/Other/Not insured (ref = private insurance)			0.18
			(0.33)
Constant	-0.092	-0.64†	-0.61

	(0.18)	(0.27)	(0.36)
<u>Model Comparisons</u>			
Wald F		72.5	14.5
Wald Prob>F		0	0.025
Wald df1		8	6

Robust standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4D.3: Negative binomial regression of average weekly alcohol use on day-to-day discrimination and covariates.
Asian Community Health Initiative, N=447

	Average weekly alcohol use (drinks per week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Day-to-day discrimination score	0.45†	0.13	0.15
	(0.21)	(0.21)	(0.21)
Age (10 years, centered at 59)		-0.045	0.016
		(0.094)	(0.10)
Marital status (ref = Married)			
Formerly married		-0.50	-0.34
		(0.32)	(0.33)
Single		0.28	0.26
		(0.25)	(0.25)
Asian ethnicity (ref = Chinese)			
Filipina		0.12	0.24
		(0.33)	(0.33)
Other AANHPI		0.80*	0.96**
		(0.25)	(0.25)
Survey language (ref = English)			
Chinese		-0.41	0.0055
		(0.31)	(0.34)
Tagalog		-1.55†	-1.18
		(0.73)	(0.75)
US-born (ref = Foreign-born)		0.71*	0.78**
		(0.23)	(0.23)
Education (ref = College graduate)			
<=High school			-1.12*
			(0.41)
Some college			-0.47
			(0.27)
Employment (ref = Full time)			
Part time			-0.56†
			(0.27)
Not working			-0.13
			(0.24)
Homeowner (ref = renter/other non-homeowner)			0.018
			(0.24)

Public insurance/Other/Not insured (ref = private insurance)			0.15
			(0.33)
Constant	-0.10	-0.57†	-0.50
	(0.15)	(0.25)	(0.34)
Model Comparisons:			
Wald F		69.2	13.9
Wald Prob>F		0	0.031
Wald df1		8	6

Robust standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4D.4: Negative binomial regression of average weekly alcohol use on acculturative stress and covariates.
Asian Community Health Initiative, foreign-born sample only, N=292

	Average weekly alcohol use (drinks per week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Acculturative stress	-0.17	0.10	0.32
	(0.37)	(0.38)	(0.39)
Age (10 years, centered at 59)		-0.16	-0.045
		(0.16)	(0.18)
Marital status (ref = Married)			
Formerly married		-1.00†	-0.95
		(0.51)	(0.53)
Single		0.46	0.25
		(0.43)	(0.42)
Asian ethnicity (ref = Chinese)			
Filipina		-0.067	-0.029
		(0.50)	(0.49)
Other AANHPI		0.86	0.82
		(0.46)	(0.45)
Survey language (ref = English)			
Chinese		-0.42	-0.070
		(0.42)	(0.45)
Tagalog		-1.13	-0.44
		(0.81)	(0.85)
Education (ref = College graduate)			
<=High school			-1.12†
			(0.50)
Some college			-1.05†
			(0.47)
Employment (ref = Full time)			
Part time			-0.58
			(0.42)
Not working			0.35
			(0.38)
Homeowner (ref = renter/other non-homeowner)			0.11
			(0.39)
Public insurance/Other/Not insured (ref = private insurance)			-0.16

			(0.50)
Constant	-0.21	-0.63	-0.83
	(0.58)	(0.59)	(0.79)
<u>Model Comparisons:</u>			
Wald F		26.2	12.1
Wald Prob>F		0.00046	0.059
Wald df1		7	6

Robust standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4D.5: Negative binomial regression of average weekly alcohol use on neighborhood safety and covariates.
Asian Community Health Initiative, N=430

	Average weekly alcohol use (drinks per week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Neighborhood safety	-0.065	0.029	-0.0067	0.0092
	(0.14)	(0.15)	(0.13)	(0.15)
Age (10 years, centered at 59)		-0.053	0.0090	-0.023
		(0.085)	(0.088)	(0.088)
Marital status (ref = Married)				
Formerly married		-0.56	-0.41	-0.41
		(0.33)	(0.35)	(0.32)
Single		0.31	0.29	0.21
		(0.25)	(0.24)	(0.22)
Asian ethnicity (ref = Chinese)				
Filipina		0.16	0.28	0.40
		(0.34)	(0.35)	(0.33)
Other AANHPI		0.83**	0.99**	0.85**
		(0.24)	(0.24)	(0.22)
Survey language (ref = English)				
Chinese		-0.43	0.0089	-0.021
		(0.36)	(0.39)	(0.38)
Tagalog		-2.31**	-1.96*	-1.82*
		(0.61)	(0.69)	(0.65)
US-born (ref = Foreign-born)		0.72*	0.78**	0.72*
		(0.24)	(0.23)	(0.24)
Education (ref = College graduate)				
<=High school			-1.25*	-1.05†
			(0.44)	(0.45)
Some college			-0.45	-0.49
			(0.34)	(0.30)
Employment (ref = Full time)				
Part time			-0.46†	-0.41
			(0.23)	(0.24)
Not working			-0.060	-0.021
			(0.26)	(0.24)
Homeowner (ref = renter/other non-homeowner)			-0.030	0.12
			(0.23)	(0.24)
Public insurance/Other/Not insured (ref = private insurance)			0.084	-0.037
			(0.33)	(0.31)

High neighborhood SES (ref = low neighborhood SES)				0.073
				(0.24)
High API enclave (ref = low API enclave)				-0.55*
				(0.19)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				-0.61
				(0.39)
Metropolitan suburb				-0.63*
				(0.23)
Years lived at current address				-0.0018
				(0.012)
Constant	0.37	-0.58	-0.36	0.25
	(0.48)	(0.57)	(0.56)	(0.59)
<u>Model Comparisons:</u>				
Wald F		108	14	14.8
Wald Prob>F		0	0.029	0.011
Wald df		8	6	5

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4D.6: Negative binomial regression of average weekly alcohol use on neighborhood problems and covariates.
Asian Community Health Initiative, N=430

	Average weekly alcohol use (drinks per week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Neighborhood problems	0.11*	0.038	0.060	0.021
	(0.037)	(0.037)	(0.035)	(0.038)
Age (10 years, centered at 59)		-0.033	0.050	-0.0097
		(0.087)	(0.089)	(0.088)
Marital status (ref = Married)				
Formerly married		-0.60†	-0.44	-0.41
		(0.33)	(0.34)	(0.32)
Single		0.24	0.21	0.18
		(0.25)	(0.24)	(0.23)
Asian ethnicity (ref = Chinese)				
Filipina		0.18	0.32	0.41
		(0.34)	(0.34)	(0.33)
Other AANHPI		0.80**	0.97**	0.85**
		(0.23)	(0.24)	(0.22)
Survey language (ref = English)				
Chinese		-0.48	-0.0015	-0.023
		(0.35)	(0.38)	(0.38)
Tagalog		-2.34**	-1.95*	-1.81*
		(0.62)	(0.69)	(0.65)
US-born (ref = Foreign-born)		0.68*	0.73*	0.70*
		(0.24)	(0.24)	(0.24)
Education (ref = College graduate)				
<=High school			-1.27*	-1.06†
			(0.44)	(0.45)
Some college			-0.47	-0.49
			(0.34)	(0.30)
Employment (ref = Full time)				
Part time			-0.50†	-0.42
			(0.23)	(0.24)
Not working			-0.077	-0.027
			(0.25)	(0.24)
Homeowner (ref = renter/other non-homeowner)			-0.023	0.12

			(0.23)	(0.24)
Public insurance/Other/Not insured (ref = private insurance)			0.0084	-0.056
			(0.31)	(0.30)
High neighborhood SES (ref = low neighborhood SES)				0.073
				(0.24)
High API enclave (ref = low API enclave)				-0.54*
				(0.19)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				-0.56
				(0.40)
Metropolitan suburb				-0.59*
				(0.24)
Years lived at current address				-0.0019
				(0.012)
Constant	-0.14	-0.53†	-0.46	0.22
	(0.15)	(0.25)	(0.33)	(0.42)
<u>Model Comparisons:</u>				
Wald F		94.7	15.9	13.1
Wald Prob>F		0	0.014	0.022
Wald df		8	6	5

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4D.7: Negative binomial regression of average weekly alcohol use on collective efficacy and covariates.
Asian Community Health Initiative, N=430

	Average weekly alcohol use (drinks per week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Collective efficacy	0.34†	0.22	0.27	0.22
	(0.15)	(0.14)	(0.15)	(0.14)
Age (10 years, centered at 59)		-0.053	0.0080	-0.027
		(0.087)	(0.091)	(0.090)
Marital status (ref = Married)				
Formerly married		-0.46	-0.26	-0.29
		(0.33)	(0.34)	(0.31)
Single		0.37	0.38	0.27
		(0.25)	(0.24)	(0.21)
Asian ethnicity (ref = Chinese)				
Filipina		0.13	0.27	0.39
		(0.33)	(0.34)	(0.33)
Other AANHPI		0.79*	0.95**	0.83**
		(0.24)	(0.24)	(0.22)
Survey language (ref = English)				
Chinese		-0.46	0.0056	-0.013
		(0.34)	(0.37)	(0.37)
Tagalog		-2.23**	-1.87*	-1.75*
		(0.61)	(0.70)	(0.66)
US-born (ref = Foreign-born)		0.70*	0.76**	0.71*
		(0.23)	(0.23)	(0.23)
Education (ref = College graduate)				
<=High school			-1.30*	-1.10*
			(0.44)	(0.45)
Some college			-0.52	-0.54
			(0.32)	(0.29)
Employment (ref = Full time)				
Part time			-0.45	-0.40
			(0.24)	(0.25)
Not working			-0.047	-0.019
			(0.25)	(0.24)
Homeowner (ref = renter/other non-homeowner)			-0.100	0.053

			(0.24)	(0.25)
Public insurance/Other/Not insured (ref = private insurance)			0.066	-0.051
			(0.32)	(0.30)
High neighborhood SES (ref = low neighborhood SES)				0.067
				(0.24)
High API enclave (ref = low API enclave)				-0.54*
				(0.19)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				-0.60
				(0.39)
Metropolitan suburb				-0.60*
				(0.22)
Years lived at current address				-0.00048
				(0.012)
Constant	-0.38	-0.83*	-0.77†	-0.059
	(0.26)	(0.31)	(0.36)	(0.45)
<u>Model Comparisons:</u>				
Wald F		107	13.9	13.6
Wald Prob>F		0	0.031	0.018
Wald df		8	6	5

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4D.8: Negative binomial regression of average weekly alcohol use on general stress moderated by neighborhood safety and covariates.
Asian Community Health Initiative, N=430

	Average weekly alcohol use (drinks per week): b(se)
VARIABLES	Model 1
General stress	-1.05
	(0.65)
Neighborhood safety	-0.77
	(0.55)
General stress X neighborhood safety	0.28
	(0.19)
Age (10 years, centered at 59)	-0.050
	(0.088)
Marital status (ref = Married)	
Formerly married	-0.41
	(0.32)
Single	0.24
	(0.22)
Asian ethnicity (ref = Chinese)	
Filipina	0.45
	(0.34)
Other AANHPI	0.84**
	(0.22)
Survey language (ref = English)	
Chinese	-0.027
	(0.37)
Tagalog	-1.82*
	(0.64)
US-born (ref = Foreign-born)	0.72*
	(0.24)
Education (ref = College graduate)	
<=High school	-1.02†
	(0.45)
Some college	-0.47
	(0.31)
Employment (ref = Full time)	
Part time	-0.38

	(0.24)
Not working	-0.019
	(0.24)
Homeowner (ref = renter/other non-homeowner)	0.14
	(0.23)
Public insurance/Other/Not insured (ref = private insurance)	0.019
	(0.31)
High neighborhood SES (ref = low neighborhood SES)	0.100
	(0.24)
High API enclave (ref = low API enclave)	-0.57*
	(0.19)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.62
	(0.39)
Metropolitan suburb	-0.67*
	(0.23)
Years lived at current address	-0.0021
	(0.012)
Constant	3.19
	(1.95)

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4D.9: Negative binomial regression of average weekly alcohol use on day-to-day discrimination moderated by neighborhood safety and covariates. Asian Community Health Initiative, N=430

	Average weekly alcohol use (drinks per week): b(se)
VARIABLES	Model 1
Day-to-day discrimination	0.80
	(0.78)
Neighborhood safety	0.15
	(0.24)
Day-to-day discrimination X neighborhood safety	-0.22
	(0.25)
Age (10 years, centered at 59)	-0.0059
	(0.088)
Marital status (ref = Married)	
Formerly married	-0.41
	(0.32)
Single	0.16
	(0.22)
Asian ethnicity (ref = Chinese)	
Filipina	0.38
	(0.33)
Other AANHPI	0.83**
	(0.22)
Survey language (ref = English)	
Chinese	0.016
	(0.38)
Tagalog	-1.76†
	(0.65)
US-born (ref = Foreign-born)	0.72*
	(0.23)
Education (ref = College graduate)	
<=High school	-1.06†
	(0.44)
Some college	-0.51
	(0.30)
Employment (ref = Full time)	
Part time	-0.41

	(0.24)
Not working	-0.014
	(0.24)
Homeowner (ref = renter/other non-homeowner)	0.11
	(0.24)
Public insurance/Other/Not insured (ref = private insurance)	-0.057
	(0.31)
High neighborhood SES (ref = low neighborhood SES)	0.064
	(0.24)
High API enclave (ref = low API enclave)	-0.55*
	(0.19)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.61
	(0.40)
Metropolitan suburb	-0.62*
	(0.22)
Years lived at current address	-0.0016
	(0.012)
Constant	-0.26
	(0.82)

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4D.10: Negative binomial regression of average weekly alcohol use on acculturative stress moderated by neighborhood safety and covariates.
Asian Community Health Initiative, foreign-born sample only N=284

	Average weekly alcohol use (drinks per week): b(se)
VARIABLES	Model 1
Acculturative stress	-3.36†
	(1.27)
Neighborhood safety	-1.70*
	(0.60)
Acculturative stress X neighborhood safety	1.14†
	(0.42)
Age (10 years, centered at 59)	-0.043
	(0.13)
Marital status (ref = Married)	
Formerly married	-1.00
	(0.55)
Single	0.20
	(0.35)
Asian ethnicity (ref = Chinese)	
Filipina	0.14
	(0.45)
Other AANHPI	0.88†
	(0.41)
Survey language (ref = English)	
Chinese	-0.21
	(0.41)
Tagalog	-1.34†
	(0.68)
Education (ref = College graduate)	
<=High school	-0.99†
	(0.47)
Some college	-1.11†
	(0.50)
Employment (ref = Full time)	
Part time	-0.51
	(0.33)
Not working	0.55

	(0.35)
Homeowner (ref = renter/other non-homeowner)	0.16
	(0.33)
Public insurance/Other/Not insured (ref = private insurance)	-0.37
	(0.42)
High neighborhood SES (ref = low neighborhood SES)	-0.034
	(0.31)
High API enclave (ref = low API enclave)	-0.42
	(0.27)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.61
	(0.46)
Metropolitan suburb	-0.49
	(0.30)
Years lived at current address	0.014
	(0.018)
Constant	5.16†
	(1.95)

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4D.11: Negative binomial regression of average weekly alcohol use on general stress moderated by neighborhood problems and covariates.
Asian Community Health Initiative, N=430

	Average weekly alcohol use (drinks per week): b(se)
VARIABLES	Model 1
General stress	-0.30
	(0.20)
Neighborhood problems	-0.11
	(0.15)
General stress X neighborhood problems	0.048
	(0.051)
Age (10 years, centered at 59)	-0.020
	(0.087)
Marital status (ref = Married)	
Formerly married	-0.38
	(0.32)
Single	0.20
	(0.23)
Asian ethnicity (ref = Chinese)	
Filipina	0.39
	(0.33)
Other AANHPI	0.84**
	(0.22)
Survey language (ref = English)	
Chinese	0.0052
	(0.38)
Tagalog	-1.82*
	(0.65)
US-born (ref = Foreign-born)	0.67*
	(0.24)
Education (ref = College graduate)	
<=High school	-1.07†
	(0.45)
Some college	-0.46
	(0.31)
Employment (ref = Full time)	
Part time	-0.41

	(0.24)
Not working	-0.013
	(0.24)
Homeowner (ref = renter/other non-homeowner)	0.12
	(0.23)
Public insurance/Other/Not insured (ref = private insurance)	-0.059
	(0.30)
High neighborhood SES (ref = low neighborhood SES)	0.079
	(0.24)
High API enclave (ref = low API enclave)	-0.54*
	(0.19)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.59
	(0.40)
Metropolitan suburb	-0.59†
	(0.24)
Years lived at current address	-0.0043
	(0.012)
Constant	1.03
	(0.64)

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4D.12: Negative binomial regression of average weekly alcohol use on day-to-day discrimination moderated by neighborhood problems and covariates. Asian Community Health Initiative, N=430

	Average weekly alcohol use (drinks per week): b(se)
VARIABLES	Model 1
Day-to-day discrimination	0.047
	(0.28)
Neighborhood problems	0.0058
	(0.054)
Day-to-day discrimination X neighborhood problems	0.015
	(0.052)
Age (10 years, centered at 59)	-0.00061
	(0.088)
Marital status (ref = Married)	
Formerly married	-0.41
	(0.33)
Single	0.16
	(0.23)
Asian ethnicity (ref = Chinese)	
Filipina	0.40
	(0.32)
Other AANHPI	0.85**
	(0.21)
Survey language (ref = English)	
Chinese	-0.0085
	(0.38)
Tagalog	-1.80*
	(0.65)
US-born (ref = Foreign-born)	0.70*
	(0.24)
Education (ref = College graduate)	
<=High school	-1.08†
	(0.45)
Some college	-0.51
	(0.31)
Employment (ref = Full time)	

Part time	-0.41
	(0.24)
Not working	-0.020
	(0.24)
Homeowner (ref = renter/other non-homeowner)	0.12
	(0.24)
Public insurance/Other/Not insured (ref = private insurance)	-0.060
	(0.31)
High neighborhood SES (ref = low neighborhood SES)	0.060
	(0.24)
High API enclave (ref = low API enclave)	-0.55*
	(0.19)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.58
	(0.40)
Metropolitan suburb	-0.59†
	(0.24)
Years lived at current address	-0.0022
	(0.012)
Constant	0.23
	(0.43)

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4D.13: Negative binomial regression of average weekly alcohol use on acculturative stress moderated by neighborhood problems and covariates. Asian Community Health Initiative, foreign-born sample only N=284

	Average weekly alcohol use (drinks per week): b(se)
VARIABLES	Model 1
Acculturative stress	0.19
	(0.51)
Neighborhood problems	0.042
	(0.22)
Acculturative stress X neighborhood problems	-0.0081
	(0.14)
Age (10 years, centered at 59)	-0.084
	(0.13)
Marital status (ref = Married)	
Formerly married	-1.09†
	(0.53)
Single	-0.0052
	(0.37)
Asian ethnicity (ref = Chinese)	
Filipina	0.17
	(0.44)
Other AANHPI	0.92†
	(0.40)
Survey language (ref = English)	
Chinese	0.069
	(0.44)
Tagalog	-1.14
	(0.71)
Education (ref = College graduate)	
<=High school	-1.24†
	(0.53)
Some college	-1.23†
	(0.51)
Employment (ref = Full time)	
Part time	-0.55
	(0.35)
Not working	0.40

	(0.34)
Homeowner (ref = renter/other non-homeowner)	0.040
	(0.33)
Public insurance/Other/Not insured (ref = private insurance)	-0.22
	(0.43)
High neighborhood SES (ref = low neighborhood SES)	0.015
	(0.31)
High API enclave (ref = low API enclave)	-0.29
	(0.28)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.52
	(0.50)
Metropolitan suburb	-0.41
	(0.32)
Years lived at current address	0.017
	(0.018)
Constant	-0.37
	(0.83)

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4D.14: Negative binomial regression of average weekly alcohol use on general stress moderated by collective efficacy and covariates.
Asian Community Health Initiative, N=430

	Average weekly alcohol use (drinks per week): b(se)
VARIABLES	Model 1
General stress	-0.27
	(0.37)
Collective efficacy	0.012
	(0.58)
General stress X collective efficacy	0.075
	(0.21)
Age (10 years, centered at 59)	-0.054
	(0.092)
Marital status (ref = Married)	
Formerly married	-0.30
	(0.31)
Single	0.27
	(0.22)
Asian ethnicity (ref = Chinese)	
Filipina	0.42
	(0.34)
Other AANHPI	0.81**
	(0.22)
Survey language (ref = English)	
Chinese	0.026
	(0.38)
Tagalog	-1.79†
	(0.68)
US-born (ref = Foreign-born)	0.71*
	(0.23)
Education (ref = College graduate)	
<=High school	-1.09†
	(0.45)
Some college	-0.51
	(0.30)
Employment (ref = Full time)	
Part time	-0.38

	(0.25)
Not working	-0.012
	(0.24)
Homeowner (ref = renter/other non-homeowner)	0.060
	(0.24)
Public insurance/Other/Not insured (ref = private insurance)	-0.028
	(0.30)
High neighborhood SES (ref = low neighborhood SES)	0.089
	(0.24)
High API enclave (ref = low API enclave)	-0.54*
	(0.19)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.59
	(0.39)
Metropolitan suburb	-0.61*
	(0.22)
Years lived at current address	-0.0012
	(0.012)
Constant	0.62
	(1.07)

Robust standard errors in parentheses
** $p<0.001$, * $p<0.006$, † $p<0.05$
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4D.15: Negative binomial regression of average weekly alcohol use on day-to-day discrimination moderated by collective efficacy and covariates. Asian Community Health Initiative, N=430

	Average weekly alcohol use (drinks per week): b(se)
VARIABLES	Model 1
Day-to-day discrimination	0.023
	(0.43)
Collective efficacy	0.18
	(0.20)
Day-to-day discrimination X collective efficacy	0.088
	(0.25)
Age (10 years, centered at 59)	-0.015
	(0.092)
Marital status (ref = Married)	
Formerly married	-0.29
	(0.32)
Single	0.24
	(0.22)
Asian ethnicity (ref = Chinese)	
Filipina	0.39
	(0.33)
Other AANHPI	0.81**
	(0.22)
Survey language (ref = English)	
Chinese	0.014
	(0.38)
Tagalog	-1.73†
	(0.66)
US-born (ref = Foreign-born)	0.72*
	(0.23)
Education (ref = College graduate)	
<=High school	-1.14†
	(0.45)
Some college	-0.55
	(0.30)
Employment (ref = Full time)	
Part time	-0.39

	(0.24)
Not working	-0.0072
	(0.23)
Homeowner (ref = renter/other non-homeowner)	0.049
	(0.24)
Public insurance/Other/Not insured (ref = private insurance)	-0.056
	(0.30)
High neighborhood SES (ref = low neighborhood SES)	0.048
	(0.24)
High API enclave (ref = low API enclave)	-0.54*
	(0.19)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.58
	(0.40)
Metropolitan suburb	-0.59†
	(0.22)
Years lived at current address	0.000051
	(0.012)
Constant	-0.081
	(0.49)

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4D.16: Negative binomial regression of average weekly alcohol use on acculturative stress moderated by collective efficacy and covariates.
Asian Community Health Initiative, foreign-born sample only N=284

	Average weekly alcohol use (drinks per week): b(se)
VARIABLES	Model 1
Acculturative stress	-0.30
	(0.84)
Collective efficacy	-0.063
	(0.76)
Acculturative stress X collective efficacy	0.31
	(0.47)
Age (10 years, centered at 59)	-0.14
	(0.13)
Marital status (ref = Married)	
Formerly married	-0.90
	(0.54)
Single	0.100
	(0.36)
Asian ethnicity (ref = Chinese)	
Filipina	0.17
	(0.43)
Other AANHPI	0.82†
	(0.41)
Survey language (ref = English)	
Chinese	0.13
	(0.43)
Tagalog	-0.97
	(0.74)
Education (ref = College graduate)	
<=High school	-1.30†
	(0.53)
Some college	-1.38*
	(0.48)
Employment (ref = Full time)	
Part time	-0.72†
	(0.34)
Not working	0.31

	(0.34)
Homeowner (ref = renter/other non-homeowner)	0.041
	(0.34)
Public insurance/Other/Not insured (ref = private insurance)	-0.19
	(0.43)
High neighborhood SES (ref = low neighborhood SES)	-0.037
	(0.31)
High API enclave (ref = low API enclave)	-0.33
	(0.27)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.42
	(0.49)
Metropolitan suburb	-0.41
	(0.31)
Years lived at current address	0.021
	(0.018)
Constant	-0.14
	(1.31)

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4E.1: Ordinary least squares regression of fruit consumption on general stress and covariates.
Asian Community Health Initiative, N=441

	Fruit consumption (times per week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
General stress	0.060	0.15	0.19
	(0.39)	(0.40)	(0.40)
Age (10 years, centered at 59)		0.62*	0.75*
		(0.21)	(0.23)
Marital status (ref = Married)			
Formerly married		-0.49	-0.23
		(0.68)	(0.69)
Single		-0.55	-0.44
		(0.61)	(0.62)
Asian ethnicity (ref = Chinese)			
Filipina		-0.34	-0.029
		(0.80)	(0.81)
Other AANHPI		-0.29	0.033
		(0.62)	(0.63)
Survey language (ref = English)			
Chinese		0.31	1.33
		(0.71)	(0.81)
Tagalog		-0.28	0.64
		(1.13)	(1.17)
US-born (ref = Foreign-born)		-0.35	-0.22
		(0.59)	(0.59)
Education (ref = College graduate)			
<=High school			-1.46
			(0.81)
Some college			-1.22
			(0.63)
Employment (ref = Full time)			
Part time			-0.62
			(0.61)
Not working			0.29
			(0.59)
Homeowner (ref = renter/other non-homeowner)			0.25
			(0.55)

Public insurance/Other/Not insured (ref = private insurance)			-0.46
			(0.68)
Constant	8.06**	8.17**	8.00**
	(1.06)	(1.16)	(1.29)
R-squared	0.000	0.037	0.059
<u>Model Comparisons:</u>			
Wald F		2.07	1.68
Wald Prob>F		0.038	0.12
Wald df		8, 431	6, 425

Standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4E.2: Ordinary least squares regression of fruit consumption on lifetime discrimination and covariates.
Asian Community Health Initiative, N=470

	Fruit consumption (times per week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Lifetime discrimination	-0.064	-0.011	0.0100
	(0.094)	(0.096)	(0.096)
Age (10 years, centered at 59)		0.62*	0.71*
		(0.21)	(0.22)
Marital status (ref = Married)			
Formerly married		-0.39	-0.14
		(0.65)	(0.66)
Single		-0.49	-0.38
		(0.59)	(0.60)
Asian ethnicity (ref = Chinese)			
Filipina		-0.67	-0.32
		(0.76)	(0.77)
Other AANHPI		-0.42	-0.13
		(0.60)	(0.61)
Survey language (ref = English)			
Chinese		0.44	1.42
		(0.68)	(0.79)
Tagalog		0.074	0.96
		(1.09)	(1.14)
US-born (ref = Foreign-born)		-0.44	-0.32
		(0.56)	(0.56)
Education (ref = College graduate)			
<=High school			-1.27
			(0.80)
Some college			-0.98
			(0.61)
Employment (ref = Full time)			
Part time			-0.32
			(0.58)
Not working			0.41
			(0.57)
Homeowner (ref = renter/other non-homeowner)			0.36
			(0.52)

Public insurance/Other/Not insured (ref = private insurance)			-0.46
			(0.65)
Constant	8.29**	8.56**	8.20**
	(0.36)	(0.62)	(0.82)
R-squared	0.001	0.046	0.063
<u>Model Comparisons:</u>			
Wald F		2.70	1.36
Wald Prob>F		0.0066	0.23
Wald df		8, 460	6, 454

Standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4E.3: Ordinary least squares regression of fruit consumption on day-to-day discrimination and covariates.
Asian Community Health Initiative, N=470

	Fruit consumption (times per week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Day-to-day discrimination	-1.26*	-0.62	-0.51
	(0.47)	(0.49)	(0.50)
Age (10 years, centered at 59)		0.56*	0.65*
		(0.21)	(0.22)
Marital status (ref = Married)			
Formerly married		-0.30	-0.075
		(0.65)	(0.66)
Single		-0.41	-0.31
		(0.59)	(0.60)
Asian ethnicity (ref = Chinese)			
Filipina		-0.59	-0.27
		(0.76)	(0.77)
Other AANHPI		-0.35	-0.079
		(0.60)	(0.61)
Survey language (ref = English)			
Chinese		0.42	1.38
		(0.68)	(0.79)
Tagalog		-0.021	0.84
		(1.09)	(1.13)
US-born (ref = Foreign-born)		-0.42	-0.32
		(0.56)	(0.56)
Education (ref = College graduate)			
<=High school			-1.22
			(0.80)
Some college			-0.85
			(0.62)
Employment (ref = Full time)			
Part time			-0.35
			(0.58)
Not working			0.40
			(0.57)
Homeowner (ref = renter/other non-homeowner)			0.36
			(0.52)

Public insurance/Other/Not insured (ref = private insurance)			-0.48
			(0.65)
Constant	8.70**	8.76**	8.44**
	(0.31)	(0.58)	(0.78)
R-squared	0.015	0.049	0.065
<u>Model Comparisons:</u>			
Wald F		2.04	1.27
Wald Prob>F		0.041	0.27
Wald df		8, 460	6, 454

Standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4E.4: Ordinary least squares regression of fruit consumption on acculturative stress and covariates.
Asian Community Health Initiative, foreign-born sample only, N=308

	Fruit consumption (times per week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Acculturative stress	-0.82	-1.01	-0.76
	(0.68)	(0.71)	(0.73)
Age (10 years, centered at 59)		0.61†	0.67†
		(0.26)	(0.29)
Marital status (ref = Married)			
Formerly married		-0.019	0.029
		(0.73)	(0.75)
Single		-0.12	-0.031
		(0.84)	(0.86)
Asian ethnicity (ref = Chinese)			
Filipina		-0.76	-0.58
		(0.93)	(0.95)
Other AANHPI		0.022	0.11
		(0.90)	(0.91)
Survey language (ref = English)			
Chinese		0.77	1.13
		(0.80)	(0.89)
Tagalog		0.37	0.82
		(1.10)	(1.15)
Education (ref = College graduate)			
<=High school			-0.25
			(0.87)
Some college			0.56
			(0.77)
Employment (ref = Full time)			
Part time			-0.63
			(0.72)
Not working			0.34
			(0.69)
Homeowner (ref = renter/other non-homeowner)			0.41
			(0.65)
Public insurance/Other/Not insured (ref = private insurance)			-0.69

			(0.79)
Constant	9.66**	9.72**	9.04**
	(1.05)	(1.14)	(1.41)
R-squared	0.005	0.047	0.063
<u>Model Comparisons:</u>			
Wald F		1.91	0.83
Wald Prob>F		0.067	0.55
Wald df		7, 299	6, 293

Standard errors in parentheses

** p<0.001, * p<0.0125, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4E.5: Ordinary least squares regression of fruit consumption on neighborhood safety and covariates.
Asian Community Health Initiative, N=425

	Fruit consumption (times per week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Neighborhood safety	0.096	0.13	-0.061	0.0055
	(0.29)	(0.29)	(0.29)	(0.29)
Age (10 years, centered at 59)		0.56*	0.67*	0.75*
		(0.21)	(0.22)	(0.24)
Marital status (ref = Married)				
Formerly married		-0.35	-0.056	-0.073
		(0.69)	(0.69)	(0.69)
Single		-0.47	-0.31	-0.21
		(0.64)	(0.65)	(0.68)
Asian ethnicity (ref = Chinese)				
Filipina		-0.15	0.10	0.048
		(0.84)	(0.83)	(0.83)
Other AANHPI		-0.21	0.11	0.028
		(0.66)	(0.66)	(0.66)
Survey language (ref = English)				
Chinese		0.48	1.42	1.19
		(0.69)	(0.81)	(0.84)
Tagalog		-0.15	0.82	0.73
		(1.13)	(1.15)	(1.19)
US-born (ref = Foreign-born)		-0.49	-0.39	-0.46
		(0.64)	(0.64)	(0.64)
Education (ref = College graduate)				
<=High school			-1.32	-1.28
			(0.80)	(0.83)
Some college			-1.21	-1.09
			(0.62)	(0.64)
Employment (ref = Full time)				
Part time			-0.80	-0.63
			(0.63)	(0.65)
Not working			0.37	0.59
			(0.60)	(0.61)
Homeowner (ref = renter/other non-homeowner)			0.44	0.80
			(0.58)	(0.61)
Public insurance/Other/Not insured (ref =			-0.42	-0.62

private insurance)				
			(0.67)	(0.68)
High neighborhood SES (ref = low neighborhood SES)				-0.49
				(0.59)
High API enclave (ref = low API enclave)				-0.63
				(0.56)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				-1.78
				(1.14)
Metropolitan suburb				-0.22
				(0.54)
Years lived at current address				-0.034
				(0.028)
Constant	7.92**	8.06**	8.48**	9.41**
	(0.97)	(1.16)	(1.29)	(1.37)
R-squared	0.000	0.036	0.061	0.072
Model Comparisons:				
Wald F		2.28	1.95	1.01
Wald Prob>F		0.022	0.071	0.41
Wald df		8, 370	6, 370	5, 370

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4E.6: Ordinary least squares regression of fruit consumption on neighborhood problems and covariates.
Asian Community Health Initiative, N=425

	Fruit consumption (times per week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Neighborhood problems	-0.012	0.086	0.12	0.11
	(0.085)	(0.088)	(0.089)	(0.093)
Age (10 years, centered at 59)		0.60*	0.73*	0.80*
		(0.21)	(0.22)	(0.25)
Marital status (ref = Married)				
Formerly married		-0.42	-0.11	-0.11
		(0.70)	(0.69)	(0.69)
Single		-0.53	-0.38	-0.28
		(0.64)	(0.64)	(0.67)
Asian ethnicity (ref = Chinese)				
Filipina		-0.17	0.16	0.075
		(0.84)	(0.83)	(0.83)
Other AANHPI		-0.30	0.048	-0.038
		(0.66)	(0.65)	(0.66)
Survey language (ref = English)				
Chinese		0.37	1.41	1.20
		(0.69)	(0.81)	(0.84)
Tagalog		-0.20	0.79	0.70
		(1.12)	(1.15)	(1.20)
US-born (ref = Foreign-born)		-0.59	-0.50	-0.56
		(0.65)	(0.64)	(0.65)
Education (ref = College graduate)				
<=High school			-1.36	-1.33
			(0.79)	(0.82)
Some college			-1.27†	-1.16
			(0.61)	(0.63)
Employment (ref = Full time)				
Part time			-0.77	-0.63
			(0.63)	(0.65)
Not working			0.37	0.58
			(0.60)	(0.61)
Homeowner (ref = renter/other non-homeowner)			0.46	0.79
			(0.59)	(0.62)
Public insurance/Other/Not insured (ref =			-0.45	-0.65

private insurance)				
			(0.67)	(0.68)
High neighborhood SES (ref = low neighborhood SES)				-0.50
				(0.58)
High API enclave (ref = low API enclave)				-0.64
				(0.56)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				-1.61
				(1.14)
Metropolitan suburb				-0.062
				(0.56)
Years lived at current address				-0.032
				(0.028)
Constant	8.26**	8.39**	8.08**	9.18**
	(0.30)	(0.56)	(0.80)	(1.04)
R-squared	0.000	0.038	0.064	0.075
<u>Model Comparisons:</u>				
Wald F		2.46	2.14	0.98
Wald Prob>F		0.013	0.048	0.43
Wald df		8, 370	6, 370	5, 370

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4E.7: Ordinary least squares regression of fruit consumption on collective efficacy and covariates.
Asian Community Health Initiative, N=425

	Fruit consumption (times per week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Collective efficacy	1.58**	1.59**	1.67**	1.70**
	(0.31)	(0.33)	(0.32)	(0.33)
Age (10 years, centered at 59)		0.51*	0.63*	0.74*
		(0.21)	(0.22)	(0.24)
Marital status (ref = Married)				
Formerly married		-0.11	0.20	0.22
		(0.68)	(0.68)	(0.68)
Single		0.081	0.24	0.40
		(0.63)	(0.64)	(0.66)
Asian ethnicity (ref = Chinese)				
Filipina		-0.023	0.26	0.13
		(0.82)	(0.81)	(0.82)
Other AANHPI		-0.35	0.021	-0.055
		(0.64)	(0.64)	(0.63)
Survey language (ref = English)				
Chinese		0.37	1.37	1.07
		(0.67)	(0.79)	(0.82)
Tagalog		0.23	1.22	1.06
		(1.04)	(1.08)	(1.11)
US-born (ref = Foreign-born)		-0.67	-0.56	-0.59
		(0.61)	(0.61)	(0.61)
Education (ref = College graduate)				
<=High school			-1.31	-1.34
			(0.76)	(0.79)
Some college			-1.33†	-1.23†
			(0.60)	(0.62)
Employment (ref = Full time)				
Part time			-1.12	-0.94
			(0.60)	(0.62)
Not working			0.15	0.40
			(0.60)	(0.62)
Homeowner (ref = renter/other non-homeowner)			0.35	0.74
			(0.58)	(0.61)
Public insurance/Other/Not insured (ref =			-0.36	-0.60

private insurance)				
			(0.67)	(0.68)
High neighborhood SES (ref = low neighborhood SES)				-0.59
				(0.58)
High API enclave (ref = low API enclave)				-0.39
				(0.55)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				-1.57
				(1.14)
Metropolitan suburb				0.028
				(0.55)
Years lived at current address				-0.042
				(0.026)
Constant	5.84**	6.02**	5.87**	6.80**
	(0.53)	(0.72)	(0.86)	(1.12)
R-squared	0.053	0.086	0.115	0.128
<u>Model Comparisons:</u>				
Wald F		2.13	2.44	1.20
Wald Prob>F		0.032	0.025	0.31
Wald df		8, 370	6, 370	5, 370

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4E.8: Ordinary least squares regression of fruit consumption on general stress moderated by neighborhood safety and covariates. Asian Community Health Initiative, N=425

	Fruit consumption (times per week): b(se)
VARIABLES	Model 1
General stress	-0.065
	(1.69)
Neighborhood safety	-0.19
	(1.45)
General stress X neighborhood safety	0.080
	(0.51)
Age (10 years, centered at 59)	0.77*
	(0.25)
Marital status (ref = Married)	
Formerly married	-0.091
	(0.69)
Single	-0.22
	(0.68)
Asian ethnicity (ref = Chinese)	
Filipina	0.034
	(0.84)
Other AANHPI	0.032
	(0.66)
Survey language (ref = English)	
Chinese	1.14
	(0.85)
Tagalog	0.72
	(1.20)
US-born (ref = Foreign-born)	-0.44
	(0.65)
Education (ref = College graduate)	
<=High school	-1.27
	(0.83)
Some college	-1.10
	(0.64)
Employment (ref = Full time)	
Part time	-0.65

	(0.66)
Not working	0.56
	(0.62)
Homeowner (ref = renter/other non-homeowner)	0.80
	(0.61)
Public insurance/Other/Not insured (ref = private insurance)	-0.60
	(0.69)
High neighborhood SES (ref = low neighborhood SES)	-0.49
	(0.59)
High API enclave (ref = low API enclave)	-0.63
	(0.57)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.76
	(1.13)
Metropolitan suburb	-0.21
	(0.54)
Years lived at current address	-0.033
	(0.028)
Constant	9.56
	(5.11)
R-squared	0.072

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4E.9: Ordinary least squares regression of fruit consumption on day-to-day discrimination moderated by neighborhood safety and covariates. Asian Community Health Initiative, N=425

	Fruit consumption (times per week): b(se)
VARIABLES	Model 1
Day-to-day discrimination	-2.57
	(2.06)
Neighborhood safety	-0.34
	(0.41)
Day-to-day discrimination X neighborhood safety	0.58
	(0.65)
Age (10 years, centered at 59)	0.67†
	(0.25)
Marital status (ref = Married)	
Formerly married	0.083
	(0.70)
Single	-0.067
	(0.68)
Asian ethnicity (ref = Chinese)	
Filipina	0.16
	(0.84)
Other AANHPI	0.16
	(0.67)
Survey language (ref = English)	
Chinese	1.12
	(0.83)
Tagalog	0.52
	(1.21)
US-born (ref = Foreign-born)	-0.47
	(0.64)
Education (ref = College graduate)	
<=High school	-1.24
	(0.82)
Some college	-0.96
	(0.65)
Employment (ref = Full time)	
Part time	-0.61

	(0.66)
Not working	0.60
	(0.62)
Homeowner (ref = renter/other non-homeowner)	0.86
	(0.61)
Public insurance/Other/Not insured (ref = private insurance)	-0.63
	(0.69)
High neighborhood SES (ref = low neighborhood SES)	-0.47
	(0.59)
High API enclave (ref = low API enclave)	-0.64
	(0.57)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.71
	(1.17)
Metropolitan suburb	-0.20
	(0.54)
Years lived at current address	-0.034
	(0.028)
Constant	10.7**
	(1.68)
R-squared	0.078

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4E.10: Ordinary least squares regression of fruit consumption on acculturative stress moderated by neighborhood safety and covariates.
Asian Community Health Initiative, N=281

VARIABLES	*Fruit consumption (times per week): b(se)* Model 1
Acculturative stress	-4.20
	(2.27)
Neighborhood safety	-1.86
	(1.17)
Acculturative stress X neighborhood safety	1.01
	(0.71)
Age (10 years, centered at 59)	0.89*
	(0.30)
Marital status (ref = Married)	
Formerly married	0.10
	(0.80)
Single	-0.052
	(0.93)
Asian ethnicity (ref = Chinese)	
Filipina	-0.32
	(1.01)
Other AANHPI	0.17
	(1.01)
Survey language (ref = English)	
Chinese	0.67
	(0.93)
Tagalog	0.54
	(1.23)
Education (ref = College graduate)	
<=High school	-0.56
	(0.90)
Some college	0.21
	(0.79)
Employment (ref = Full time)	
Part time	-0.52
	(0.78)
Not working	0.52

	(0.76)
Homeowner (ref = renter/other non-homeowner)	0.83
	(0.76)
Public insurance/Other/Not insured (ref = private insurance)	-1.09
	(0.79)
High neighborhood SES (ref = low neighborhood SES)	-0.53
	(0.69)
High API enclave (ref = low API enclave)	-0.25
	(0.76)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.94
	(1.39)
Metropolitan suburb	-0.98
	(0.65)
Years lived at current address	-0.029
	(0.033)
Constant	17.0**
	(4.08)
R-squared	0.094

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4E.11: Ordinary least squares regression of fruit consumption on general stress moderated by neighborhood problems and covariates. Asian Community Health Initiative, N=425

	Fruit consumption (times per week): b(se)
VARIABLES	Model 1
General stress	-0.14
	(0.56)
Neighborhood problems	-0.23
	(0.44)
General stress X neighborhood problems	0.12
	(0.14)
Age (10 years, centered at 59)	0.82*
	(0.25)
Marital status (ref = Married)	
Formerly married	-0.086
	(0.70)
Single	-0.28
	(0.68)
Asian ethnicity (ref = Chinese)	
Filipina	0.067
	(0.83)
Other AANHPI	-0.023
	(0.66)
Survey language (ref = English)	
Chinese	1.22
	(0.85)
Tagalog	0.69
	(1.21)
US-born (ref = Foreign-born)	-0.51
	(0.65)
Education (ref = College graduate)	
<=High school	-1.33
	(0.82)
Some college	-1.15
	(0.63)
Employment (ref = Full time)	
Part time	-0.66

	(0.66)
Not working	0.56
	(0.61)
Homeowner (ref = renter/other non-homeowner)	0.77
	(0.62)
Public insurance/Other/Not insured (ref = private insurance)	-0.68
	(0.69)
High neighborhood SES (ref = low neighborhood SES)	-0.48
	(0.58)
High API enclave (ref = low API enclave)	-0.64
	(0.56)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.61
	(1.13)
Metropolitan suburb	-0.042
	(0.56)
Years lived at current address	-0.033
	(0.028)
Constant	9.58**
	(1.83)
R-squared	0.077

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4E.12: Ordinary least squares regression of fruit consumption on day-to-day discrimination moderated by neighborhood problems and covariates. Asian Community Health Initiative, N=425

VARIABLES	*Fruit consumption (times per week): b(se)* Model 1
Day-to-day discrimination	-1.00
	(0.77)
Neighborhood problems	0.13
	(0.14)
Day-to-day discrimination X neighborhood problems	0.022
	(0.17)
Age (10 years, centered at 59)	0.71*
	(0.25)
Marital status (ref = Married)	
Formerly married	0.017
	(0.70)
Single	-0.19
	(0.67)
Asian ethnicity (ref = Chinese)	
Filipina	0.18
	(0.83)
Other AANHPI	0.073
	(0.66)
Survey language (ref = English)	
Chinese	1.16
	(0.83)
Tagalog	0.54
	(1.22)
US-born (ref = Foreign-born)	-0.60
	(0.64)
Education (ref = College graduate)	
<=High school	-1.27
	(0.81)
Some college	-1.00
	(0.64)
Employment (ref = Full time)	
Part time	-0.67

	(0.65)
Not working	0.58
	(0.61)
Homeowner (ref = renter/other non-homeowner)	0.78
	(0.61)
Public insurance/Other/Not insured (ref = private insurance)	-0.69
	(0.69)
High neighborhood SES (ref = low neighborhood SES)	-0.45
	(0.59)
High API enclave (ref = low API enclave)	-0.60
	(0.56)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.48
	(1.17)
Metropolitan suburb	0.0049
	(0.57)
Years lived at current address	-0.030
	(0.028)
Constant	9.38**
	(1.09)
R-squared	0.082

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4E.13: Ordinary least squares regression of fruit consumption on acculturative stress moderated by neighborhood problems and covariates. Asian Community Health Initiative, N=281

	Fruit consumption (times per week): b(se)
VARIABLES	Model 1
Acculturative stress	-1.04
	(0.89)
Neighborhood problems	-0.0034
	(0.40)
Acculturative stress X neighborhood problems	-0.012
	(0.22)
Age (10 years, centered at 59)	0.82*
	(0.29)
Marital status (ref = Married)	
Formerly married	0.053
	(0.81)
Single	-0.0087
	(0.93)
Asian ethnicity (ref = Chinese)	
Filipina	-0.23
	(1.01)
Other AANHPI	0.20
	(1.01)
Survey language (ref = English)	
Chinese	0.77
	(0.94)
Tagalog	0.60
	(1.26)
Education (ref = College graduate)	
<=High school	-0.47
	(0.90)
Some college	0.35
	(0.78)
Employment (ref = Full time)	
Part time	-0.63
	(0.79)
Not working	0.53

	(0.76)
Homeowner (ref = renter/other non-homeowner)	0.83
	(0.76)
Public insurance/Other/Not insured (ref = private insurance)	-1.01
	(0.79)
High neighborhood SES (ref = low neighborhood SES)	-0.57
	(0.70)
High API enclave (ref = low API enclave)	-0.21
	(0.77)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.99
	(1.41)
Metropolitan suburb	-0.98
	(0.66)
Years lived at current address	-0.032
	(0.033)
Constant	11.0**
	(1.78)
R-squared	0.086

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4E.14: Ordinary least squares regression of fruit consumption on general stress moderated by collective efficacy and covariates.
Asian Community Health Initiative, N=425

	Fruit consumption (times per week): b(se)
VARIABLES	Model 1
General stress	1.11
	(0.96)
Collective efficacy	3.37†
	(1.63)
General stress X collective efficacy	-0.61
	(0.58)
Age (10 years, centered at 59)	0.79*
	(0.25)
Marital status (ref = Married)	
Formerly married	0.21
	(0.68)
Single	0.42
	(0.66)
Asian ethnicity (ref = Chinese)	
Filipina	0.064
	(0.82)
Other AANHPI	-0.0089
	(0.63)
Survey language (ref = English)	
Chinese	1.00
	(0.84)
Tagalog	1.21
	(1.13)
US-born (ref = Foreign-born)	-0.63
	(0.62)
Education (ref = College graduate)	
<=High school	-1.37
	(0.79)
Some college	-1.27†
	(0.62)
Employment (ref = Full time)	
Part time	-1.00

	(0.62)
Not working	0.34
	(0.62)
Homeowner (ref = renter/other non-homeowner)	0.74
	(0.61)
Public insurance/Other/Not insured (ref = private insurance)	-0.56
	(0.68)
High neighborhood SES (ref = low neighborhood SES)	-0.63
	(0.58)
High API enclave (ref = low API enclave)	-0.38
	(0.55)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.63
	(1.14)
Metropolitan suburb	0.089
	(0.55)
Years lived at current address	-0.040
	(0.026)
Constant	3.80
	(2.77)
R-squared	0.131

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4E.15: Ordinary least squares regression of fruit consumption on day-to-day discrimination moderated by collective efficacy and covariates. Asian Community Health Initiative, N=425

	Fruit consumption (times per week): b(se)
VARIABLES	Model 1
Day-to-day discrimination	0.28
	(1.08)
Collective efficacy	1.90**
	(0.45)
Day-to-day discrimination X collective efficacy	-0.52
	(0.68)
Age (10 years, centered at 59)	0.71*
	(0.25)
Marital status (ref = Married)	
Formerly married	0.26
	(0.69)
Single	0.47
	(0.65)
Asian ethnicity (ref = Chinese)	
Filipina	0.20
	(0.82)
Other AANHPI	0.035
	(0.64)
Survey language (ref = English)	
Chinese	1.05
	(0.82)
Tagalog	1.01
	(1.13)
US-born (ref = Foreign-born)	-0.58
	(0.61)
Education (ref = College graduate)	
<=High school	-1.29
	(0.79)
Some college	-1.14
	(0.63)
Employment (ref = Full time)	
Part time	-0.97

	(0.62)
Not working	0.39
	(0.62)
Homeowner (ref = renter/other non-homeowner)	0.77
	(0.61)
Public insurance/Other/Not insured (ref = private insurance)	-0.60
	(0.69)
High neighborhood SES (ref = low neighborhood SES)	-0.58
	(0.58)
High API enclave (ref = low API enclave)	-0.38
	(0.56)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.60
	(1.18)
Metropolitan suburb	0.038
	(0.55)
Years lived at current address	-0.041
	(0.026)
Constant	6.60**
	(1.21)
R-squared	0.130

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4E.16: Ordinary least squares regression of fruit consumption on acculturative stress moderated by collective efficacy and covariates.
Asian Community Health Initiative, N=281

	Fruit consumption (times per week): b(se)
VARIABLES	Model 1
Acculturative stress	1.59
	(1.52)
Collective efficacy	4.13*
	(1.36)
Acculturative stress X collective efficacy	-1.63†
	(0.79)
Age (10 years, centered at 59)	0.81†
	(0.29)
Marital status (ref = Married)	
Formerly married	0.18
	(0.80)
Single	0.65
	(0.87)
Asian ethnicity (ref = Chinese)	
Filipina	-0.072
	(1.00)
Other AANHPI	-0.11
	(0.95)
Survey language (ref = English)	
Chinese	0.72
	(0.92)
Tagalog	1.01
	(1.20)
Education (ref = College graduate)	
<=High school	-0.61
	(0.87)
Some college	0.13
	(0.77)
Employment (ref = Full time)	
Part time	-1.17
	(0.74)
Not working	0.14

	(0.77)
Homeowner (ref = renter/other non-homeowner)	1.05
	(0.74)
Public insurance/Other/Not insured (ref = private insurance)	-0.71
	(0.78)
High neighborhood SES (ref = low neighborhood SES)	-0.81
	(0.67)
High API enclave (ref = low API enclave)	-0.15
	(0.76)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.77
	(1.47)
Metropolitan suburb	-0.55
	(0.65)
Years lived at current address	-0.042
	(0.031)
Constant	4.42
	(2.65)
R-squared	0.146

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4F.1: Ordinary least squares regression of vegetable consumption on general stress and covariates.
Asian Community Health Initiative, N=442

	Vegetable consumption (times per week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
General stress	-0.49	-0.46	-0.39
	(0.36)	(0.37)	(0.37)
Age (10 years, centered at 59)		0.089	0.21
		(0.20)	(0.22)
Marital status (ref = Married)			
Formerly married		-0.90	-0.69
		(0.64)	(0.65)
Single		-0.75	-0.76
		(0.57)	(0.58)
Asian ethnicity (ref = Chinese)			
Filipina		-2.21*	-2.06*
		(0.75)	(0.76)
Other AANHPI		-0.75	-0.54
		(0.58)	(0.59)
Survey language (ref = English)			
Chinese		-0.13	0.36
		(0.67)	(0.77)
Tagalog		0.95	1.27
		(1.07)	(1.11)
US-born (ref = Foreign-born)		-0.58	-0.43
		(0.55)	(0.56)
Education (ref = College graduate)			
<=High school			-0.48
			(0.77)
Some college			-0.96
			(0.59)
Employment (ref = Full time)			
Part time			-0.47
			(0.57)
Not working			-0.56
			(0.55)
Homeowner (ref = renter/other non-homeowner)			0.43
			(0.52)
Public insurance/Other/Not insured (ref = private			0.16

insurance)

			(0.64)
Constant	9.94**	11.0**	10.7**
	(0.99)	(1.09)	(1.21)
R-squared	0.004	0.044	0.056
<u>Model Comparisons:</u>			
Wald F		2.23	0.90
Wald Prob>F		0.025	0.49
Wald df		8, 432	6, 426

Standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4F.2: Ordinary least squares regression of vegetable consumption on lifetime discrimination and covariates. Asian Community Health Initiative, N=471

	Vegetable consumption (times per week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Lifetime discrimination	0.017	0.036	0.055
	(0.088)	(0.090)	(0.091)
Age (10 years, centered at 59)		0.22	0.32
		(0.19)	(0.21)
Marital status (ref = Married)			
Formerly married		-1.09	-0.85
		(0.61)	(0.63)
Single		-0.86	-0.84
		(0.56)	(0.56)
Asian ethnicity (ref = Chinese)			
Filipina		-2.31*	-2.10*
		(0.72)	(0.73)
Other AANHPI		-1.00†	-0.78
		(0.56)	(0.57)
Survey language (ref = English)			
Chinese		-0.11	0.47
		(0.65)	(0.75)
Tagalog		1.07	1.47
		(1.03)	(1.08)
US-born (ref = Foreign-born)		-0.26	-0.12
		(0.53)	(0.53)
Education (ref = College graduate)			
<=High school			-0.43
			(0.75)
Some college			-0.82
			(0.57)
Employment (ref = Full time)			
Part time			-0.23
			(0.55)
Not working			-0.49
			(0.53)
Homeowner (ref = renter/other non-homeowner)			0.60
			(0.49)
Public insurance/Other/Not insured (ref = private			0.077

insurance)

			(0.62)
Constant	8.44**	9.51**	9.14**
	(0.34)	(0.58)	(0.77)
R-squared	0.000	0.049	0.060
<u>Model Comparisons:</u>			
Wald F		2.94	0.92
Wald Prob>F		0.0032	0.48
Wald df		8, 461	6, 455

Standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4F.3: Ordinary least squares regression of vegetable consumption on day-to-day discrimination and covariates.
Asian Community Health Initiative, N=471

	Vegetable consumption (times per week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Day-to-day discrimination	-0.64	-0.11	0.016
	(0.44)	(0.47)	(0.48)
Age (10 years, centered at 59)		0.19	0.30
		(0.20)	(0.21)
Marital status (ref = Married)			
Formerly married		-1.06	-0.82
		(0.62)	(0.63)
Single		-0.82	-0.81
		(0.56)	(0.57)
Asian ethnicity (ref = Chinese)			
Filipina		-2.31*	-2.13*
		(0.72)	(0.73)
Other AANHPI		-0.97†	-0.77
		(0.57)	(0.58)
Survey language (ref = English)			
Chinese		-0.100	0.48
		(0.65)	(0.75)
Tagalog		1.01	1.40
		(1.03)	(1.07)
US-born (ref = Foreign-born)		-0.26	-0.13
		(0.53)	(0.53)
Education (ref = College graduate)			
<=High school			-0.43
			(0.75)
Some college			-0.80
			(0.58)
Employment (ref = Full time)			
Part time			-0.21
			(0.55)
Not working			-0.49
			(0.54)
Homeowner (ref = renter/other non-homeowner)			0.58
			(0.49)
Public insurance/Other/Not insured (ref = private			0.070

insurance)			
			(0.62)
Constant	8.80**	9.66**	9.32**
	(0.30)	(0.55)	(0.74)
R-squared	0.004	0.048	0.059
<u>Model Comparisons:</u>			
Wald F		2.66	0.88
Wald Prob>F		0.0072	0.51
Wald df		8, 461	6, 455

Standard errors in parentheses

** p<0.001, * p<0.0125, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4F.4: Ordinary least squares regression of vegetable consumption on acculturative stress and covariates.
Asian Community Health Initiative, foreign-born sample only, N=308

	Vegetable consumption (times per week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Acculturative stress	0.62	0.77	0.80
	(0.64)	(0.67)	(0.68)
Age (10 years, centered at 59)		0.16	0.23
		(0.25)	(0.27)
Marital status (ref = Married)			
Formerly married		-0.89	-0.83
		(0.69)	(0.71)
Single		0.033	0.053
		(0.79)	(0.81)
Asian ethnicity (ref = Chinese)			
Filipina		-3.34**	-3.44**
		(0.87)	(0.89)
Other AANHPI		-1.42	-1.40
		(0.85)	(0.86)
Survey language (ref = English)			
Chinese		-0.69	-0.62
		(0.75)	(0.84)
Tagalog		1.60	1.52
		(1.04)	(1.09)
Education (ref = College graduate)			
<=High school			0.15
			(0.82)
Some college			0.64
			(0.72)
Employment (ref = Full time)			
Part time			-0.83
			(0.68)
Not working			-1.17
			(0.65)
Homeowner (ref = renter/other non-homeowner)			0.49
			(0.61)
Public insurance/Other/Not insured (ref = private insurance)			0.39

			(0.74)
Constant	7.70**	8.84**	8.77**
	(1.00)	(1.07)	(1.33)
R-squared	0.003	0.069	0.084
<u>Model Comparisons:</u>			
Wald F		3.01	0.80
Wald Prob>F		0.0046	0.57
Wald df		7, 299	6, 293

Standard errors in parentheses

** p<0.001, * p<0.0125, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4F.5: Ordinary least squares regression of vegetable consumption on neighborhood safety and covariates.
Asian Community Health Initiative, N=425

	Vegetable consumption (times per week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Neighborhood safety	0.90**	0.87**	0.82*	0.81*
	(0.25)	(0.25)	(0.26)	(0.26)
Age (10 years, centered at 59)		0.080	0.15	0.082
		(0.20)	(0.22)	(0.24)
Marital status (ref = Married)				
Formerly married		-1.01	-0.87	-0.88
		(0.59)	(0.62)	(0.61)
Single		-0.70	-0.72	-0.89
		(0.61)	(0.62)	(0.63)
Asian ethnicity (ref = Chinese)				
Filipina		-2.09*	-1.99†	-2.07*
		(0.82)	(0.83)	(0.83)
Other AANHPI		-0.52	-0.37	-0.34
		(0.60)	(0.60)	(0.60)
Survey language (ref = English)				
Chinese		0.12	0.38	0.37
		(0.64)	(0.75)	(0.75)
Tagalog		0.82	0.99	0.73
		(1.14)	(1.21)	(1.20)
US-born (ref = Foreign-born)		-0.55	-0.44	-0.67
		(0.60)	(0.60)	(0.61)
Education (ref = College graduate)				
<=High school			-0.20	0.079
			(0.72)	(0.73)
Some college			-0.65	-0.48
			(0.61)	(0.62)
Employment (ref = Full time)				
Part time			-0.71	-0.75
			(0.60)	(0.60)
Not working			-0.61	-0.67
			(0.56)	(0.55)
Homeowner (ref = renter/other non-homeowner)			0.58	0.41
			(0.53)	(0.57)
Public insurance/Other/Not insured (ref =			0.49	0.61

private insurance)				
			(0.69)	(0.70)
High neighborhood SES (ref = low neighborhood SES)				0.54
				(0.52)
High API enclave (ref = low API enclave)				-0.41
				(0.56)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				-1.87
				(1.10)
Metropolitan suburb				0.66
				(0.50)
Years lived at current address				-0.0063
				(0.028)
Constant	5.73**	6.74**	6.72**	6.63**
	(0.83)	(0.98)	(1.16)	(1.26)
R-squared	0.025	0.065	0.075	0.094
<u>Model Comparisons:</u>				
Wald F		2.21	0.69	1.65
Wald Prob>F		0.026	0.66	0.15
Wald df		8, 370	6, 370	5, 370

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4F.6: Ordinary least squares regression of vegetable consumption on neighborhood problems and covariates.
Asian Community Health Initiative, N=425

	Vegetable consumption (times per week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Neighborhood problems	-0.089	-0.058	-0.038	-0.0034
	(0.089)	(0.088)	(0.090)	(0.092)
Age (10 years, centered at 59)		0.056	0.17	0.11
		(0.20)	(0.22)	(0.24)
Marital status (ref = Married)				
Formerly married		-1.02†	-0.80	-0.82
		(0.59)	(0.61)	(0.61)
Single		-0.69	-0.68	-0.89
		(0.62)	(0.63)	(0.64)
Asian ethnicity (ref = Chinese)				
Filipina		-2.34*	-2.16*	-2.22*
		(0.82)	(0.84)	(0.84)
Other AANHPI		-0.70	-0.49	-0.47
		(0.60)	(0.60)	(0.60)
Survey language (ref = English)				
Chinese		-0.18	0.33	0.36
		(0.63)	(0.75)	(0.76)
Tagalog		0.87	1.22	0.95
		(1.17)	(1.24)	(1.23)
US-born (ref = Foreign-born)		-0.56	-0.44	-0.70
		(0.60)	(0.60)	(0.61)
Education (ref = College graduate)				
<=High school			-0.44	-0.15
			(0.73)	(0.75)
Some college			-0.86	-0.71
			(0.61)	(0.62)
Employment (ref = Full time)				
Part time			-0.66	-0.72
			(0.61)	(0.60)
Not working			-0.57	-0.65
			(0.57)	(0.56)
Homeowner (ref = renter/other non-homeowner)			0.61	0.39
			(0.54)	(0.58)
Public insurance/Other/Not insured (ref =			0.23	0.37

private insurance)				
			(0.70)	(0.71)
High neighborhood SES (ref = low neighborhood SES)				0.61
				(0.53)
High API enclave (ref = low API enclave)				-0.38
				(0.55)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				-1.55
				(1.07)
Metropolitan suburb				0.79
				(0.51)
Years lived at current address				-0.0040
				(0.028)
Constant	8.83**	9.85**	9.62**	9.25**
	(0.29)	(0.53)	(0.80)	(1.01)
R-squared	0.003	0.043	0.057	0.076
<u>Model Comparisons:</u>				
Wald F		2.17	0.87	1.75
Wald Prob>F		0.029	0.52	0.12
Wald df		8, 370	6, 370	5, 370

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4F.7: Ordinary least squares regression of vegetable consumption on collective efficacy and covariates.
Asian Community Health Initiative, N=425

	Vegetable consumption (times per week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Collective efficacy	0.81*	0.67†	0.74*	0.78*
	(0.29)	(0.30)	(0.31)	(0.31)
Age (10 years, centered at 59)		0.058	0.18	0.11
		(0.20)	(0.22)	(0.24)
Marital status (ref = Married)				
Formerly married		-0.95	-0.70	-0.69
		(0.59)	(0.61)	(0.61)
Single		-0.50	-0.46	-0.61
		(0.62)	(0.63)	(0.63)
Asian ethnicity (ref = Chinese)				
Filipina		-2.26*	-2.08*	-2.18*
		(0.81)	(0.83)	(0.83)
Other AANHPI		-0.79	-0.55	-0.51
		(0.59)	(0.59)	(0.59)
Survey language (ref = English)				
Chinese		-0.25	0.30	0.30
		(0.63)	(0.75)	(0.75)
Tagalog		0.99	1.40	1.10
		(1.19)	(1.26)	(1.25)
US-born (ref = Foreign-born)		-0.69	-0.55	-0.76
		(0.59)	(0.58)	(0.60)
Education (ref = College graduate)				
<=High school			-0.46	-0.17
			(0.73)	(0.74)
Some college			-0.95	-0.78
			(0.61)	(0.62)
Employment (ref = Full time)				
Part time			-0.79	-0.86
			(0.61)	(0.61)
Not working			-0.66	-0.74
			(0.57)	(0.56)
Homeowner (ref = renter/other non-homeowner)			0.58	0.36
			(0.54)	(0.58)
Public insurance/Other/Not insured (ref =			0.22	0.37

private insurance)				
			(0.70)	(0.71)
High neighborhood SES (ref = low neighborhood SES)				0.56
				(0.53)
High API enclave (ref = low API enclave)				-0.27
				(0.55)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				-1.45
				(1.07)
Metropolitan suburb				0.91
				(0.49)
Years lived at current address				-0.0078
				(0.027)
Constant	7.40**	8.73**	8.49**	8.03**
	(0.49)	(0.69)	(0.87)	(1.03)
R-squared	0.016	0.052	0.068	0.089
<u>Model Comparisons:</u>				
Wald F		2.01	1.04	1.92
Wald Prob>F		0.044	0.40	0.091
Wald df		8, 370	6, 370	5, 370

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4F.8: Ordinary least squares regression of vegetable consumption on general stress moderated by neighborhood safety and covariates. Asian Community Health Initiative, N=425

VARIABLES	*Vegetable consumption (times per week): b(se)* Model 1
General stress	-0.85
	(1.42)
Neighborhood safety	0.27
	(1.28)
General stress X neighborhood safety	0.17
	(0.43)
Age (10 years, centered at 59)	0.056
	(0.24)
Marital status (ref = Married)	
Formerly married	-0.85
	(0.61)
Single	-0.87
	(0.63)
Asian ethnicity (ref = Chinese)	
Filipina	-2.04†
	(0.83)
Other AANHPI	-0.34
	(0.60)
Survey language (ref = English)	
Chinese	0.43
	(0.77)
Tagalog	0.76
	(1.22)
US-born (ref = Foreign-born)	-0.70
	(0.61)
Education (ref = College graduate)	
<=High school	0.050
	(0.73)
Some college	-0.50
	(0.64)
Employment (ref = Full time)	
Part time	-0.72

	(0.60)
Not working	-0.64
	(0.55)
Homeowner (ref = renter/other non-homeowner)	0.40
	(0.57)
Public insurance/Other/Not insured (ref = private insurance)	0.60
	(0.71)
High neighborhood SES (ref = low neighborhood SES)	0.55
	(0.52)
High API enclave (ref = low API enclave)	-0.42
	(0.55)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.88
	(1.11)
Metropolitan suburb	0.62
	(0.50)
Years lived at current address	-0.0063
	(0.028)
Constant	9.15†
	(4.39)
R-squared	0.096

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4F.9: Ordinary least squares regression of vegetable consumption on day-to-day discrimination moderated by neighborhood safety and covariates. Asian Community Health Initiative, N=425

	Vegetable consumption (times per week): b(se)
VARIABLES	Model 1
Day-to-day discrimination	-1.84
	(1.84)
Neighborhood safety	0.53
	(0.38)
Day-to-day discrimination X neighborhood safety	0.56
	(0.58)
Age (10 years, centered at 59)	0.069
	(0.24)
Marital status (ref = Married)	
Formerly married	-0.82
	(0.62)
Single	-0.83
	(0.63)
Asian ethnicity (ref = Chinese)	
Filipina	-2.02†
	(0.84)
Other AANHPI	-0.30
	(0.61)
Survey language (ref = English)	
Chinese	0.33
	(0.75)
Tagalog	0.63
	(1.22)
US-born (ref = Foreign-born)	-0.68
	(0.62)
Education (ref = College graduate)	
<=High school	0.080
	(0.73)
Some college	-0.47
	(0.63)
Employment (ref = Full time)	
Part time	-0.70

	(0.61)
Not working	-0.66
	(0.55)
Homeowner (ref = renter/other non-homeowner)	0.47
	(0.57)
Public insurance/Other/Not insured (ref = private insurance)	0.63
	(0.71)
High neighborhood SES (ref = low neighborhood SES)	0.52
	(0.52)
High API enclave (ref = low API enclave)	-0.44
	(0.56)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.88
	(1.10)
Metropolitan suburb	0.66
	(0.49)
Years lived at current address	-0.0083
	(0.028)
Constant	7.54**
	(1.59)
R-squared	0.096

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4F.10: Ordinary least squares regression of vegetable consumption on acculturative stress moderated by neighborhood safety and covariates. Asian Community Health Initiative, N=281

	Vegetable consumption (times per week): b(se)
VARIABLES	Model 1
Acculturative stress	-2.00
	(2.18)
Neighborhood safety	-0.75
	(1.19)
Acculturative stress X neighborhood safety	1.00
	(0.70)
Age (10 years, centered at 59)	0.32
	(0.31)
Marital status (ref = Married)	
Formerly married	-1.17
	(0.72)
Single	-0.10
	(0.93)
Asian ethnicity (ref = Chinese)	
Filipina	-3.49**
	(0.93)
Other AANHPI	-0.67
	(0.90)
Survey language (ref = English)	
Chinese	-0.86
	(0.82)
Tagalog	0.56
	(1.23)
Education (ref = College graduate)	
<=High school	0.55
	(0.79)
Some college	0.98
	(0.78)
Employment (ref = Full time)	
Part time	-1.19
	(0.71)
Not working	-1.59†

	(0.68)
Homeowner (ref = renter/other non-homeowner)	0.063
	(0.71)
Public insurance/Other/Not insured (ref = private insurance)	0.75
	(0.84)
High neighborhood SES (ref = low neighborhood SES)	0.98
	(0.59)
High API enclave (ref = low API enclave)	0.27
	(0.77)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.75
	(1.20)
Metropolitan suburb	0.53
	(0.57)
Years lived at current address	-0.024
	(0.033)
Constant	10.3†
	(4.12)
R-squared	0.139

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4F.11: Ordinary least squares regression of vegetable consumption on general stress moderated by neighborhood problems and covariates.
Asian Community Health Initiative, N=425

VARIABLES	*Vegetable consumption (times per week): b(se)* Model 1
General stress	-0.88
	(0.51)
Neighborhood problems	-0.48
	(0.43)
General stress X neighborhood problems	0.17
	(0.14)
Age (10 years, centered at 59)	0.073
	(0.25)
Marital status (ref = Married)	
Formerly married	-0.73
	(0.61)
Single	-0.87
	(0.64)
Asian ethnicity (ref = Chinese)	
Filipina	-2.15†
	(0.82)
Other AANHPI	-0.45
	(0.60)
Survey language (ref = English)	
Chinese	0.57
	(0.77)
Tagalog	0.93
	(1.25)
US-born (ref = Foreign-born)	-0.70
	(0.61)
Education (ref = College graduate)	
<=High school	-0.19
	(0.74)
Some college	-0.66
	(0.63)
Employment (ref = Full time)	
Part time	-0.69

	(0.60)
Not working	-0.61
	(0.56)
Homeowner (ref = renter/other non-homeowner)	0.36
	(0.58)
Public insurance/Other/Not insured (ref = private insurance)	0.31
	(0.71)
High neighborhood SES (ref = low neighborhood SES)	0.64
	(0.52)
High API enclave (ref = low API enclave)	-0.40
	(0.55)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.63
	(1.08)
Metropolitan suburb	0.78
	(0.51)
Years lived at current address	-0.0065
	(0.028)
Constant	11.6**
	(1.76)
R-squared	0.083

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4F.12: Ordinary least squares regression of vegetable consumption on day-to-day discrimination moderated by neighborhood problems and covariates. Asian Community Health Initiative, N=425

	Vegetable consumption (times per week): b(se)
VARIABLES	Model 1
Day-to-day discrimination	-0.44
	(0.71)
Neighborhood problems	-0.0088
	(0.13)
Day-to-day discrimination X neighborhood problems	0.029
	(0.17)
Age (10 years, centered at 59)	0.081
	(0.25)
Marital status (ref = Married)	
Formerly married	-0.77
	(0.61)
Single	-0.86
	(0.64)
Asian ethnicity (ref = Chinese)	
Filipina	-2.18†
	(0.84)
Other AANHPI	-0.42
	(0.60)
Survey language (ref = English)	
Chinese	0.35
	(0.76)
Tagalog	0.89
	(1.25)
US-born (ref = Foreign-born)	-0.71
	(0.62)
Education (ref = College graduate)	
<=High school	-0.13
	(0.74)
Some college	-0.65
	(0.62)
Employment (ref = Full time)	
Part time	-0.74

	(0.61)
Not working	-0.66
	(0.56)
Homeowner (ref = renter/other non-homeowner)	0.38
	(0.58)
Public insurance/Other/Not insured (ref = private insurance)	0.34
	(0.72)
High neighborhood SES (ref = low neighborhood SES)	0.62
	(0.53)
High API enclave (ref = low API enclave)	-0.36
	(0.55)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.50
	(1.08)
Metropolitan suburb	0.82
	(0.51)
Years lived at current address	-0.0028
	(0.028)
Constant	9.35**
	(1.06)
R-squared	0.077

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4F.13: Ordinary least squares regression of vegetable consumption on acculturative stress moderated by neighborhood problems and covariates. Asian Community Health Initiative, N=281

	Vegetable consumption (times per week): b(se)
VARIABLES	Model 1
Acculturative stress	0.52
	(0.86)
Neighborhood problems	-0.29
	(0.34)
Acculturative stress X neighborhood problems	0.076
	(0.19)
Age (10 years, centered at 59)	0.21
	(0.30)
Marital status (ref = Married)	
Formerly married	-1.00
	(0.73)
Single	-0.070
	(0.95)
Asian ethnicity (ref = Chinese)	
Filipina	-3.67**
	(0.94)
Other AANHPI	-0.78
	(0.88)
Survey language (ref = English)	
Chinese	-0.73
	(0.81)
Tagalog	0.99
	(1.26)
Education (ref = College graduate)	
<=High school	0.34
	(0.83)
Some college	0.82
	(0.77)
Employment (ref = Full time)	
Part time	-1.24
	(0.72)
Not working	-1.52†

	(0.68)
Homeowner (ref = renter/other non-homeowner)	-0.040
	(0.71)
Public insurance/Other/Not insured (ref = private insurance)	0.49
	(0.86)
High neighborhood SES (ref = low neighborhood SES)	1.07
	(0.59)
High API enclave (ref = low API enclave)	0.47
	(0.76)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.64
	(1.18)
Metropolitan suburb	0.51
	(0.58)
Years lived at current address	-0.017
	(0.034)
Constant	9.11**
	(1.79)
R-squared	0.120

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4F.14: Ordinary least squares regression of vegetable consumption on general stress moderated by collective efficacy and covariates.
Asian Community Health Initiative, N=425

	Vegetable consumption (times per week): b(se)
VARIABLES	Model 1
General stress	0.28
	(0.88)
Collective efficacy	2.17
	(1.43)
General stress X collective efficacy	-0.51
	(0.52)
Age (10 years, centered at 59)	0.087
	(0.24)
Marital status (ref = Married)	
Formerly married	-0.63
	(0.60)
Single	-0.56
	(0.63)
Asian ethnicity (ref = Chinese)	
Filipina	-2.17†
	(0.82)
Other AANHPI	-0.46
	(0.59)
Survey language (ref = English)	
Chinese	0.42
	(0.76)
Tagalog	1.23
	(1.25)
US-born (ref = Foreign-born)	-0.85
	(0.60)
Education (ref = College graduate)	
<=High school	-0.23
	(0.74)
Some college	-0.77
	(0.62)
Employment (ref = Full time)	
Part time	-0.84

	(0.61)
Not working	-0.72
	(0.56)
Homeowner (ref = renter/other non-homeowner)	0.36
	(0.58)
Public insurance/Other/Not insured (ref = private insurance)	0.39
	(0.71)
High neighborhood SES (ref = low neighborhood SES)	0.54
	(0.53)
High API enclave (ref = low API enclave)	-0.28
	(0.55)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.60
	(1.09)
Metropolitan suburb	0.89
	(0.49)
Years lived at current address	-0.0077
	(0.027)
Constant	7.25†
	(2.68)
R-squared	0.095

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4F.15: Ordinary least squares regression of vegetable consumption on day-to-day discrimination moderated by collective efficacy and covariates. Asian Community Health Initiative, N=425

	Vegetable consumption (times per week): b(se)
VARIABLES	Model 1
Day-to-day discrimination	1.63
	(1.19)
Collective efficacy	1.33*
	(0.43)
Day-to-day discrimination X collective efficacy	-1.25
	(0.73)
Age (10 years, centered at 59)	0.13
	(0.24)
Marital status (ref = Married)	
Formerly married	-0.72
	(0.61)
Single	-0.52
	(0.64)
Asian ethnicity (ref = Chinese)	
Filipina	-2.12†
	(0.83)
Other AANHPI	-0.42
	(0.59)
Survey language (ref = English)	
Chinese	0.29
	(0.75)
Tagalog	1.17
	(1.26)
US-born (ref = Foreign-born)	-0.73
	(0.60)
Education (ref = College graduate)	
<=High school	-0.13
	(0.74)
Some college	-0.76
	(0.61)
Employment (ref = Full time)	
Part time	-0.90

	(0.60)
Not working	-0.76
	(0.56)
Homeowner (ref = renter/other non-homeowner)	0.46
	(0.59)
Public insurance/Other/Not insured (ref = private insurance)	0.41
	(0.72)
High neighborhood SES (ref = low neighborhood SES)	0.53
	(0.53)
High API enclave (ref = low API enclave)	-0.29
	(0.56)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.61
	(1.08)
Metropolitan suburb	0.93
	(0.49)
Years lived at current address	-0.0084
	(0.027)
Constant	7.19**
	(1.24)
R-squared	0.097

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4F.16: Ordinary least squares regression of vegetable consumption on acculturative stress moderated by collective efficacy and covariates. Asian Community Health Initiative, N=281

	Vegetable consumption (times per week): b(se)
VARIABLES	Model 1
Acculturative stress	0.49
	(1.32)
Collective efficacy	0.72
	(1.23)
Acculturative stress X collective efficacy	0.11
	(0.73)
Age (10 years, centered at 59)	0.25
	(0.31)
Marital status (ref = Married)	
Formerly married	-0.95
	(0.74)
Single	0.042
	(0.94)
Asian ethnicity (ref = Chinese)	
Filipina	-3.54**
	(0.94)
Other AANHPI	-0.93
	(0.85)
Survey language (ref = English)	
Chinese	-0.73
	(0.81)
Tagalog	1.12
	(1.30)
Education (ref = College graduate)	
<=High school	0.21
	(0.82)
Some college	0.63
	(0.76)
Employment (ref = Full time)	
Part time	-1.43†
	(0.72)
Not working	-1.74†

	(0.70)
Homeowner (ref = renter/other non-homeowner)	0.0099
	(0.71)
Public insurance/Other/Not insured (ref = private insurance)	0.62
	(0.86)
High neighborhood SES (ref = low neighborhood SES)	0.97
	(0.60)
High API enclave (ref = low API enclave)	0.44
	(0.76)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.32
	(1.19)
Metropolitan suburb	0.84
	(0.57)
Years lived at current address	-0.019
	(0.033)
Constant	7.48*
	(2.41)
R-squared	0.129

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4G.1: Ordinary least squares regression of body mass index on general stress and covariates.
Asian Community Health Initiative, N=425

	Body mass index (kg/m²): b(se)		
VARIABLES	Model 1	Model 2	Model 3
General stress	0.59	0.91†	0.88†
	(0.40)	(0.39)	(0.39)
Age (10 years, centered at 59)		0.22	0.093
		(0.23)	(0.24)
Marital status (ref = Married)			
Formerly married		0.063	-0.42
		(0.66)	(0.67)
Single		-0.54	-0.97
		(0.62)	(0.63)
Asian ethnicity (ref = Chinese)			
Filipina		1.94†	1.37
		(0.81)	(0.81)
Other AANHPI		2.35**	1.94*
		(0.61)	(0.61)
Survey language (ref = English)			
Chinese		1.06	-0.33
		(0.70)	(0.79)
Tagalog		1.54	0.16
		(1.12)	(1.15)
US-born (ref = Foreign-born)		2.38**	2.27**
		(0.58)	(0.58)
Education (ref = College graduate)			
<=High school			1.10
			(0.78)
Some college			0.84
			(0.62)
Employment (ref = Full time)			
Part time			0.0082
			(0.59)
Not working			-1.02
			(0.57)
Homeowner (ref = renter/other non-homeowner)			-0.77
			(0.54)

Public insurance/Other/Not insured (ref = private insurance)			1.58†
			(0.66)
Constant	22.4**	19.4**	20.3**
	(1.07)	(1.15)	(1.29)
R-squared	0.005	0.100	0.144
<u>Model Comparisons:</u>			
Wald F		5.47	3.48
Wald Prob>F		1.4e-06	0.0023
Wald df		8, 415	6, 409

Standard errors in parentheses
** p<0.001, * p<0.0125, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4G.2: Ordinary least squares regression of body mass index on lifetime discrimination and covariates.
Asian Community Health Initiative, N=453

	Body mass index (kg/m^2): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Lifetime discrimination	0.18	0.22†	0.19†
	(0.095)	(0.096)	(0.095)
Age (10 years, centered at 59)		0.12	-0.0019
		(0.22)	(0.24)
Marital status (ref = Married)			
Formerly married		0.34	-0.14
		(0.64)	(0.65)
Single		-0.88	-1.20†
		(0.61)	(0.61)
Asian ethnicity (ref = Chinese)			
Filipina		2.17*	1.55†
		(0.78)	(0.78)
Other AANHPI		2.35**	1.89*
		(0.59)	(0.59)
Survey language (ref = English)			
Chinese		0.98	-0.50
		(0.68)	(0.78)
Tagalog		1.44	-0.018
		(1.08)	(1.12)
US-born (ref = Foreign-born)		2.05**	1.94**
		(0.56)	(0.55)
Education (ref = College graduate)			
<=High school			1.32
			(0.77)
Some college			1.14
			(0.60)
Employment (ref = Full time)			
Part time			-0.029
			(0.57)
Not working			-0.97
			(0.56)
Homeowner (ref = renter/other non-homeowner)			-0.87
			(0.52)

Public insurance/Other/Not insured (ref = private insurance)			1.33†
			(0.64)
Constant	23.5**	21.4**	22.4**
	(0.37)	(0.61)	(0.81)
R-squared	0.008	0.096	0.140
Model Comparisons:			
Wald F		5.37	3.70
Wald Prob>F		1.9e-06	0.0013
Wald df		8, 443	6, 437

Standard errors in parentheses

** p<0.001, * p<0.0125, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4G.3: Ordinary least squares regression of body mass index on day-to-day discrimination and covariates.
Asian Community Health Initiative, N=453

	Body mass index (kg/m^2): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Day-to-day discrimination	1.50*	1.29*	1.17†
	(0.48)	(0.49)	(0.49)
Age (10 years, centered at 59)		0.18	0.054
		(0.23)	(0.24)
Marital status (ref = Married)			
Formerly married		0.27	-0.18
		(0.64)	(0.65)
Single		-0.90	-1.23†
		(0.61)	(0.61)
Asian ethnicity (ref = Chinese)			
Filipina		1.97*	1.39
		(0.78)	(0.78)
Other AANHPI		2.29**	1.85*
		(0.59)	(0.59)
Survey language (ref = English)			
Chinese		1.09	-0.35
		(0.68)	(0.77)
Tagalog		1.41	-0.0073
		(1.08)	(1.11)
US-born (ref = Foreign-born)		2.00**	1.91**
		(0.56)	(0.55)
Education (ref = College graduate)			
<=High school			1.17
			(0.77)
Some college			0.92
			(0.61)
Employment (ref = Full time)			
Part time			0.10
			(0.57)
Not working			-0.94
			(0.56)
Homeowner (ref = renter/other non-homeowner)			-0.90
			(0.52)

Public insurance/Other/Not insured (ref = private insurance)			1.38†
			(0.64)
Constant	23.4**	21.4**	22.4**
	(0.32)	(0.58)	(0.79)
R-squared	0.021	0.100	0.143
<u>Model Comparisons:</u>			
Wald F		4.82	3.66
Wald Prob>F		1.0e-05	0.0015
Wald df		8, 443	6, 437

Standard errors in parentheses

** p<0.001, * p<0.0125, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4G.4: Ordinary least squares regression of body mass index on acculturative stress and covariates.
Asian Community Health Initiative, foreign-born sample only, N=301

	Body mass index (kg/m^2): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Acculturative stress	0.69	0.58	0.33
	(0.54)	(0.55)	(0.57)
Age (10 years, centered at 59)		0.15	0.012
		(0.22)	(0.24)
Marital status (ref = Married)			
Formerly married		0.66	0.45
		(0.58)	(0.60)
Single		-0.46	-0.39
		(0.70)	(0.70)
Asian ethnicity (ref = Chinese)			
Filipina		1.81†	1.61†
		(0.75)	(0.77)
Other AANHPI		1.21	1.11
		(0.71)	(0.72)
Survey language (ref = English)			
Chinese		0.34	-0.45
		(0.64)	(0.71)
Tagalog		0.81	0.099
		(0.89)	(0.93)
Education (ref = College graduate)			
<=High school			1.24
			(0.69)
Some college			0.71
			(0.61)
Employment (ref = Full time)			
Part time			-0.38
			(0.57)
Not working			-0.27
			(0.55)
Homeowner (ref = renter/other non-homeowner)			-0.22
			(0.53)
Public insurance/Other/Not insured (ref = private insurance)			0.56

			(0.62)
Constant	22.5**	21.6**	22.2**
	(0.83)	(0.89)	(1.12)
R-squared	0.005	0.071	0.094
<u>Model Comparisons:</u>			
Wald F		2.96	1.21
Wald Prob>F		0.0052	0.30
Wald df		7, 292	6, 286

Standard errors in parentheses

** p<0.001, * p<0.0125, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0125 is considered significant

Table 4G.5: Ordinary least squares regression of body mass index on neighborhood safety and covariates.
Asian Community Health Initiative, foreign-born sample only, N=410

	Body mass index (kg/m^2): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Neighborhood safety	-0.61	-0.53	-0.25	-0.21
	(0.34)	(0.33)	(0.36)	(0.35)
Age (10 years, centered at 59)		0.13	0.0014	0.016
		(0.21)	(0.25)	(0.26)
Marital status (ref = Married)				
Formerly married		0.19	-0.35	-0.32
		(0.51)	(0.58)	(0.56)
Single		-0.58	-1.04	-0.91
		(0.61)	(0.68)	(0.68)
Asian ethnicity (ref = Chinese)				
Filipina		1.57†	1.11	1.07
		(0.69)	(0.70)	(0.71)
Other AANHPI		2.32**	1.96*	1.85*
		(0.70)	(0.59)	(0.60)
Survey language (ref = English)				
Chinese		1.00†	-0.30	-0.36
		(0.57)	(0.74)	(0.77)
Tagalog		1.74†	0.35	0.71
		(0.98)	(1.10)	(1.07)
US-born (ref = Foreign-born)		2.20*	2.13*	2.21*
		(0.68)	(0.64)	(0.73)
Education (ref = College graduate)				
<=High school			0.92	0.70
			(0.96)	(1.01)
Some college			0.65	0.51
			(0.79)	(0.76)
Employment (ref = Full time)				
Part time			0.27	0.30
			(0.64)	(0.63)
Not working			-0.89	-0.74
			(0.57)	(0.59)
Homeowner (ref = renter/other non-homeowner)			-1.02	-0.79
			(0.59)	(0.64)
Public insurance/Other/Not insured (ref = private insurance)			1.57	1.34
			(0.91)	(0.87)
High neighborhood SES (ref = low neighborhood SES)				-0.96

				(0.64)
High API enclave (ref = low API enclave)				-0.52
				(0.58)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				0.60
				(1.97)
Metropolitan suburb				-0.60
				(0.50)
Years lived at current address				0.0021
				(0.024)
Constant	25.9**	23.7**	23.7**	24.9**
	(1.14)	(1.21)	(1.32)	(1.43)
R-squared	0.010	0.096	0.140	0.154
<u>Model Comparisons:</u>				
Wald F		3.94	1.58	1.01
Wald Prob>F		0.00018	0.15	0.41
Wald df		8, 357	6, 357	5, 357

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4G.6: Ordinary least squares regression of body mass index on neighborhood problems and covariates.
Asian Community Health Initiative, foreign-born sample only, N=410

	Body mass index (kg/m^2): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Neighborhood problems	0.33†	0.26†	0.22	0.20
	(0.14)	(0.13)	(0.12)	(0.12)
Age (10 years, centered at 59)		0.24	0.095	0.088
		(0.19)	(0.23)	(0.24)
Marital status (ref = Married)				
Formerly married		0.033	-0.46	-0.40
		(0.53)	(0.57)	(0.56)
Single		-0.78	-1.19	-1.06
		(0.62)	(0.69)	(0.69)
Asian ethnicity (ref = Chinese)				
Filipina		1.80*	1.26	1.19
		(0.69)	(0.70)	(0.70)
Other AANHPI		2.27**	1.88*	1.77*
		(0.67)	(0.58)	(0.58)
Survey language (ref = English)				
Chinese		1.06†	-0.29	-0.33
		(0.56)	(0.73)	(0.76)
Tagalog		1.57	0.24	0.59
		(0.98)	(1.09)	(1.07)
US-born (ref = Foreign-born)		1.96*	1.92*	2.03*
		(0.66)	(0.63)	(0.73)
Education (ref = College graduate)				
<=High school			0.91	0.70
			(0.89)	(0.94)
Some college			0.60	0.46
			(0.77)	(0.74)
Employment (ref = Full time)				
Part time			0.34	0.32
			(0.64)	(0.63)
Not working			-0.90	-0.77
			(0.56)	(0.59)
Homeowner (ref = renter/other non-homeowner)			-0.97†	-0.80
			(0.58)	(0.63)
Public insurance/Other/Not insured (ref =			1.54†	1.34

private insurance)				
			(0.88)	(0.85)
High neighborhood SES (ref = low neighborhood SES)				-0.98
				(0.64)
High API enclave (ref = low API enclave)				-0.53
				(0.57)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				0.82
				(1.97)
Metropolitan suburb				-0.38
				(0.47)
Years lived at current address				0.0044
				(0.024)
Constant	23.3**	21.5**	22.5**	23.7**
	(0.31)	(0.52)	(0.75)	(0.93)
R-squared	0.032	0.106	0.151	0.163
Model Comparisons:				
Wald F		3.90	1.79	0.90
Wald Prob>F		0.00020	0.10	0.48
Wald df		8, 357	6, 357	5, 357

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4G.7: Ordinary least squares regression of body mass index on collective efficacy and covariates.
Asian Community Health Initiative, foreign-born sample only, N=410

	Body mass index (kg/m^2): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
Collective efficacy	0.17	0.069	0.066	0.017
	(0.35)	(0.36)	(0.34)	(0.35)
Age (10 years, centered at 59)		0.14	-0.0092	0.010
		(0.21)	(0.26)	(0.27)
Marital status (ref = Married)				
Formerly married		0.23	-0.35	-0.33
		(0.52)	(0.57)	(0.55)
Single		-0.56	-1.03	-0.91
		(0.63)	(0.70)	(0.69)
Asian ethnicity (ref = Chinese)				
Filipina		1.74*	1.17	1.12
		(0.69)	(0.70)	(0.71)
Other AANHPI		2.44**	1.99**	1.89*
		(0.69)	(0.59)	(0.59)
Survey language (ref = English)				
Chinese		1.20†	-0.29	-0.36
		(0.58)	(0.75)	(0.77)
Tagalog		1.73†	0.29	0.64
		(0.98)	(1.08)	(1.05)
US-born (ref = Foreign-born)		2.23*	2.13*	2.22*
		(0.69)	(0.65)	(0.73)
Education (ref = College graduate)				
<=High school			1.00	0.78
			(0.92)	(0.95)
Some college			0.71	0.57
			(0.73)	(0.71)
Employment (ref = Full time)				
Part time			0.23	0.29
			(0.65)	(0.66)
Not working			-0.91	-0.75
			(0.57)	(0.60)
Homeowner (ref = renter/other non-homeowner)			-1.04	-0.80
			(0.59)	(0.63)
Public insurance/Other/Not insured (ref =			1.64	1.40

private insurance)			(0.90)	(0.87)
High neighborhood SES (ref = low neighborhood SES)				-0.97
				(0.64)
High API enclave (ref = low API enclave)				-0.52
				(0.57)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural				0.53
				(2.00)
Metropolitan suburb				-0.63
				(0.51)
Years lived at current address				0.0015
				(0.024)
Constant	23.7**	21.7**	22.8**	24.1**
	(0.56)	(0.71)	(0.88)	(1.11)
R-squared	0.001	0.088	0.139	0.153
<u>Model Comparisons:</u>				
Wald F		4.14	1.84	1.02
Wald Prob>F		0.000096	0.090	0.41
Wald df		8, 357	6, 357	5, 357

Robust standard errors in parentheses
** p<0.001, * p<0.0167, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.0167 is considered significant

Table 4G.8: Ordinary least squares regression of body mass index on general stress moderated by neighborhood safety and covariates. Asian Community Health Initiative, N=410

	Body mass index (kg/m^2): b(se)
VARIABLES	Model 1
General stress	3.06†
	(1.49)
Neighborhood safety	1.86
	(1.27)
General stress X neighborhood safety	-0.69
	(0.44)
Age (10 years, centered at 59)	0.073
	(0.26)
Marital status (ref = Married)	
Formerly married	-0.40
	(0.56)
Single	-0.93
	(0.67)
Asian ethnicity (ref = Chinese)	
Filipina	1.05
	(0.69)
Other AANHPI	1.86*
	(0.60)
Survey language (ref = English)	
Chinese	-0.50
	(0.79)
Tagalog	0.59
	(1.05)
US-born (ref = Foreign-born)	2.33*
	(0.73)
Education (ref = College graduate)	
<=High school	0.80
	(1.01)
Some college	0.56
	(0.76)
Employment (ref = Full time)	
Part time	0.22
	(0.63)

Not working	-0.81
	(0.59)
Homeowner (ref = renter/other non-homeowner)	-0.74
	(0.63)
Public insurance/Other/Not insured (ref = private insurance)	1.37
	(0.87)
High neighborhood SES (ref = low neighborhood SES)	-0.99
	(0.64)
High API enclave (ref = low API enclave)	-0.44
	(0.58)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	0.70
	(1.96)
Metropolitan suburb	-0.46
	(0.49)
Years lived at current address	0.0026
	(0.024)
Constant	15.8**
	(4.46)
R-squared	0.167

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4G.9: Ordinary least squares regression of body mass index on day-to-day discrimination moderated by neighborhood safety and covariates. Asian Community Health Initiative, N=410

VARIABLES	*Body mass index (kg/m^2): b(se)* Model 1
Day-to-day discrimination	1.51
	(2.52)
Neighborhood safety	-0.079
	(0.49)
Day-to-day discrimination X neighborhood safety	-0.0081
	(0.79)
Age (10 years, centered at 59)	0.19
	(0.27)
Marital status (ref = Married)	
Formerly married	-0.50
	(0.56)
Single	-1.10
	(0.67)
Asian ethnicity (ref = Chinese)	
Filipina	0.99
	(0.73)
Other AANHPI	1.70*
	(0.60)
Survey language (ref = English)	
Chinese	-0.25
	(0.76)
Tagalog	0.92
	(1.07)
US-born (ref = Foreign-born)	2.27*
	(0.73)
Education (ref = College graduate)	
<=High school	0.59
	(0.98)
Some college	0.24
	(0.76)
Employment (ref = Full time)	
Part time	0.36
	(0.62)

Not working	-0.77
	(0.58)
Homeowner (ref = renter/other non-homeowner)	-0.69
	(0.63)
Public insurance/Other/Not insured (ref = private insurance)	1.48
	(0.86)
High neighborhood SES (ref = low neighborhood SES)	-1.06
	(0.65)
High API enclave (ref = low API enclave)	-0.53
	(0.57)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	0.58
	(2.02)
Metropolitan suburb	-0.64
	(0.50)
Years lived at current address	-0.0017
	(0.024)
Constant	23.9**
	(1.86)
R-squared	0.171

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4G.10: Ordinary least squares regression of body mass index on acculturative stress moderated by neighborhood safety and covariates. Asian Community Health Initiative, N=275

	Body mass index (kg/m²): b(se)
VARIABLES	Model 1
Acculturative stress	0.28
	(1.81)
Neighborhood safety	-0.41
	(1.05)
Acculturative stress X neighborhood safety	0.074
	(0.63)
Age (10 years, centered at 59)	0.029
	(0.25)
Marital status (ref = Married)	
Formerly married	0.22
	(0.64)
Single	-0.40
	(0.64)
Asian ethnicity (ref = Chinese)	
Filipina	1.17
	(0.77)
Other AANHPI	0.79
	(0.85)
Survey language (ref = English)	
Chinese	-0.40
	(0.74)
Tagalog	0.92
	(1.09)
Education (ref = College graduate)	
<=High school	0.75
	(0.92)
Some college	0.13
	(0.67)
Employment (ref = Full time)	
Part time	-0.15
	(0.59)
Not working	-0.13
	(0.56)

Homeowner (ref = renter/other non-homeowner)	-0.0063
	(0.55)
Public insurance/Other/Not insured (ref = private insurance)	0.75
	(0.66)
High neighborhood SES (ref = low neighborhood SES)	-0.19
	(0.57)
High API enclave (ref = low API enclave)	0.33
	(0.56)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.31
	(0.90)
Metropolitan suburb	-0.23
	(0.50)
Years lived at current address	0.030
	(0.025)
Constant	22.8**
	(3.44)
R-squared	0.104

Robust standard errors in parentheses
** $p<0.001$, * $p<0.006$, † $p<0.05$
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4G.11: Ordinary least squares regression of body mass index on general stress moderated by neighborhood problems and covariates. Asian Community Health Initiative, N=410

	Body mass index (kg/m^2): b(se)
VARIABLES	Model 1
General stress	0.30
	(0.43)
Neighborhood problems	-0.43
	(0.36)
General stress X neighborhood problems	0.21
	(0.12)
Age (10 years, centered at 59)	0.13
	(0.24)
Marital status (ref = Married)	
Formerly married	-0.37
	(0.55)
Single	-1.05
	(0.68)
Asian ethnicity (ref = Chinese)	
Filipina	1.18
	(0.69)
Other AANHPI	1.80*
	(0.58)
Survey language (ref = English)	
Chinese	-0.41
	(0.78)
Tagalog	0.56
	(1.05)
US-born (ref = Foreign-born)	2.25*
	(0.74)
Education (ref = College graduate)	
<=High school	0.76
	(0.93)
Some college	0.45
	(0.74)
Employment (ref = Full time)	
Part time	0.19
	(0.61)

Not working	-0.88
	(0.59)
Homeowner (ref = renter/other non-homeowner)	-0.78
	(0.63)
Public insurance/Other/Not insured (ref = private insurance)	1.35
	(0.85)
High neighborhood SES (ref = low neighborhood SES)	-0.97
	(0.63)
High API enclave (ref = low API enclave)	-0.50
	(0.56)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	0.97
	(1.97)
Metropolitan suburb	-0.27
	(0.47)
Years lived at current address	0.0044
	(0.024)
Constant	22.9**
	(1.57)
R-squared	0.175

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4G.12: Ordinary least squares regression of body mass index on day-to-day discrimination moderated by neighborhood problems and covariates. Asian Community Health Initiative, N=410

	Body mass index (kg/m^2): b(se)
VARIABLES	Model 1
Day-to-day discrimination	1.23
	(0.78)
Neighborhood problems	0.14
	(0.19)
Day-to-day discrimination X neighborhood problems	0.029
	(0.25)
Age (10 years, centered at 59)	0.23
	(0.26)
Marital status (ref = Married)	
Formerly married	-0.53
	(0.55)
Single	-1.20
	(0.67)
Asian ethnicity (ref = Chinese)	
Filipina	1.08
	(0.72)
Other AANHPI	1.65*
	(0.58)
Survey language (ref = English)	
Chinese	-0.23
	(0.76)
Tagalog	0.84
	(1.07)
US-born (ref = Foreign-born)	2.12*
	(0.73)
Education (ref = College graduate)	
<=High school	0.57
	(0.90)
Some college	0.20
	(0.73)
Employment (ref = Full time)	
Part time	0.37
	(0.63)

Not working	-0.79
	(0.57)
Homeowner (ref = renter/other non-homeowner)	-0.70
	(0.63)
Public insurance/Other/Not insured (ref = private insurance)	1.44
	(0.88)
High neighborhood SES (ref = low neighborhood SES)	-1.06
	(0.65)
High API enclave (ref = low API enclave)	-0.54
	(0.54)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	0.78
	(2.02)
Metropolitan suburb	-0.45
	(0.48)
Years lived at current address	0.00065
	(0.024)
Constant	23.3**
	(0.99)
R-squared	0.176

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4G.13: Ordinary least squares regression of body mass index on acculturative stress moderated by neighborhood problems and covariates.
Asian Community Health Initiative, N=275

	Body mass index (kg/m^2): b(se)
VARIABLES	Model 1
Acculturative stress	1.16
	(0.61)
Neighborhood problems	0.52
	(0.31)
Acculturative stress X neighborhood problems	-0.26
	(0.17)
Age (10 years, centered at 59)	0.047
	(0.24)
Marital status (ref = Married)	
Formerly married	0.041
	(0.65)
Single	-0.53
	(0.65)
Asian ethnicity (ref = Chinese)	
Filipina	1.25
	(0.76)
Other AANHPI	0.84
	(0.82)
Survey language (ref = English)	
Chinese	-0.36
	(0.73)
Tagalog	0.83
	(1.08)
Education (ref = College graduate)	
<=High school	0.77
	(0.85)
Some college	0.20
	(0.68)
Employment (ref = Full time)	
Part time	-0.12
	(0.58)
Not working	-0.19
	(0.57)

Homeowner (ref = renter/other non-homeowner)	-0.019
	(0.54)
Public insurance/Other/Not insured (ref = private insurance)	0.88
	(0.64)
High neighborhood SES (ref = low neighborhood SES)	-0.25
	(0.56)
High API enclave (ref = low API enclave)	0.24
	(0.56)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.32
	(0.89)
Metropolitan suburb	-0.20
	(0.49)
Years lived at current address	0.030
	(0.025)
Constant	20.4**
	(1.23)
R-squared	0.110

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4G.14: Ordinary least squares regression of body mass index on general stress moderated by collective efficacy and covariates. Asian Community Health Initiative, N=410

	Body mass index (kg/m^2): b(se)
VARIABLES	Model 1
General stress	1.72†
	(0.80)
Collective efficacy	1.60
	(1.27)
General stress X collective efficacy	-0.58
	(0.47)
Age (10 years, centered at 59)	0.091
	(0.26)
Marital status (ref = Married)	
Formerly married	-0.37
	(0.54)
Single	-0.90
	(0.68)
Asian ethnicity (ref = Chinese)	
Filipina	1.03
	(0.69)
Other AANHPI	1.92*
	(0.60)
Survey language (ref = English)	
Chinese	-0.58
	(0.79)
Tagalog	0.78
	(1.03)
US-born (ref = Foreign-born)	2.30*
	(0.72)
Education (ref = College graduate)	
<=High school	0.80
	(0.95)
Some college	0.49
	(0.72)
Employment (ref = Full time)	
Part time	0.15
	(0.64)

Not working	-0.89
	(0.61)
Homeowner (ref = renter/other non-homeowner)	-0.75
	(0.62)
Public insurance/Other/Not insured (ref = private insurance)	1.49
	(0.88)
High neighborhood SES (ref = low neighborhood SES)	-1.02
	(0.63)
High API enclave (ref = low API enclave)	-0.49
	(0.57)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	0.65
	(1.98)
Metropolitan suburb	-0.48
	(0.51)
Years lived at current address	0.0053
	(0.024)
Constant	19.5**
	(2.36)
R-squared	0.165

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4G.15: Ordinary least squares regression of body mass index on day-to-day discrimination moderated by collective efficacy and covariates. Asian Community Health Initiative, N=410

	Body mass index (kg/m^2): b(se)
VARIABLES	Model 1
Day-to-day discrimination	1.02
	(1.10)
Collective efficacy	-0.021
	(0.46)
Day-to-day discrimination X collective efficacy	0.34
	(0.75)
Age (10 years, centered at 59)	0.19
	(0.27)
Marital status (ref = Married)	
Formerly married	-0.48
	(0.54)
Single	-1.08
	(0.68)
Asian ethnicity (ref = Chinese)	
Filipina	0.98
	(0.73)
Other AANHPI	1.68*
	(0.60)
Survey language (ref = English)	
Chinese	-0.26
	(0.77)
Tagalog	0.92
	(1.05)
US-born (ref = Foreign-born)	2.25*
	(0.74)
Education (ref = College graduate)	
<=High school	0.58
	(0.93)
Some college	0.24
	(0.70)
Employment (ref = Full time)	
Part time	0.34
	(0.65)

Not working	-0.79
	(0.58)
Homeowner (ref = renter/other non-homeowner)	-0.72
	(0.63)
Public insurance/Other/Not insured (ref = private insurance)	1.50
	(0.87)
High neighborhood SES (ref = low neighborhood SES)	-1.07
	(0.65)
High API enclave (ref = low API enclave)	-0.51
	(0.56)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	0.60
	(2.03)
Metropolitan suburb	-0.64
	(0.51)
Years lived at current address	-0.0024
	(0.024)
Constant	23.7**
	(1.23)
R-squared	0.171

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Table 4G.16: Ordinary least squares regression of body mass index on acculturative stress moderated by collective efficacy and covariates.
Asian Community Health Initiative, N=275

	Body mass index (kg/m^2): b(se)
VARIABLES	Model 1
Acculturative stress	1.88
	(1.10)
Collective efficacy	1.48
	(1.24)
Acculturative stress X collective efficacy	-0.77
	(0.71)
Age (10 years, centered at 59)	0.046
	(0.23)
Marital status (ref = Married)	
Formerly married	0.17
	(0.63)
Single	-0.21
	(0.65)
Asian ethnicity (ref = Chinese)	
Filipina	1.28
	(0.77)
Other AANHPI	0.80
	(0.82)
Survey language (ref = English)	
Chinese	-0.42
	(0.74)
Tagalog	0.93
	(1.06)
Education (ref = College graduate)	
<=High school	0.85
	(0.85)
Some college	0.20
	(0.67)
Employment (ref = Full time)	
Part time	-0.31
	(0.60)
Not working	-0.21
	(0.56)

Homeowner (ref = renter/other non-homeowner)	0.082
	(0.52)
Public insurance/Other/Not insured (ref = private insurance)	0.89
	(0.65)
High neighborhood SES (ref = low neighborhood SES)	-0.29
	(0.55)
High API enclave (ref = low API enclave)	0.32
	(0.57)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.36
	(0.92)
Metropolitan suburb	-0.14
	(0.51)
Years lived at current address	0.024
	(0.025)
Constant	18.9**
	(2.09)
R-squared	0.106

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
NOTE: Alpha adjusted using Bonferroni correction for multiple comparisons so that p-value<0.006 is considered significant

Figure 5.1: Map of the Asian CHI breast cancer cases and controls in San Francisco Bay Area counties.

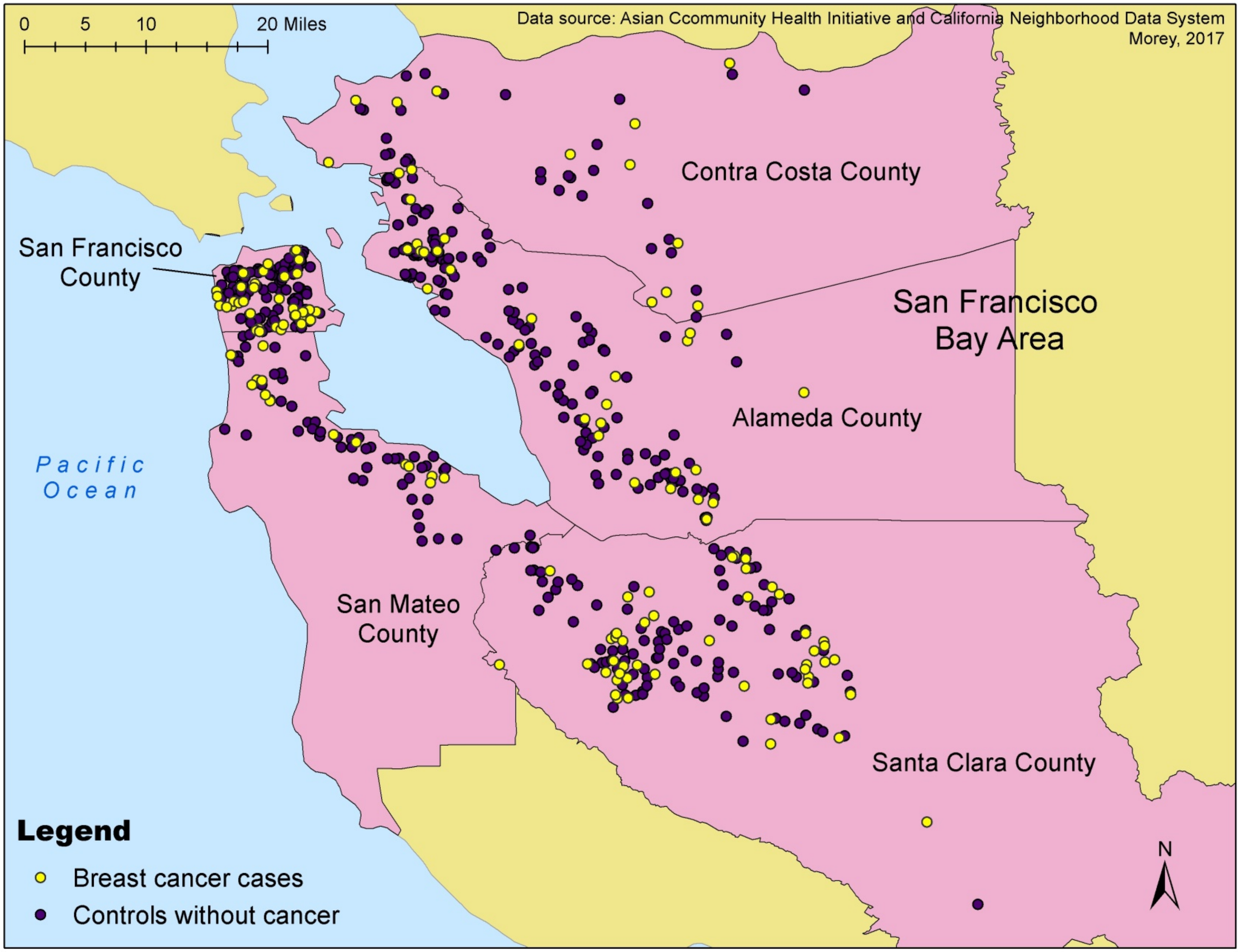


Figure 5.2: Map of Asian CHI breast cancer cases and controls in relation to API ethnic enclave index (quintiles)

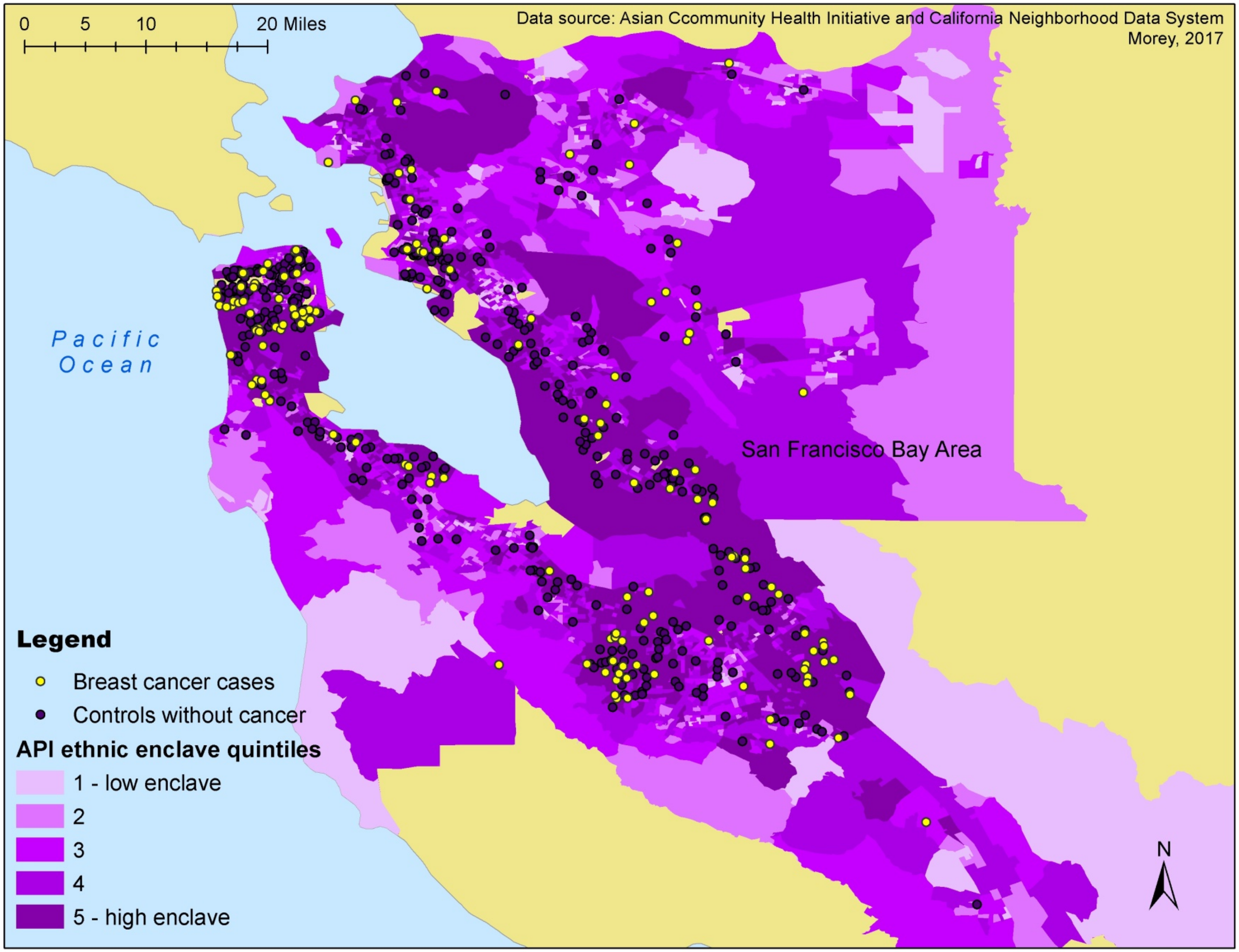


Figure 5.3: Map of Asian CHI breast cancer cases and controls in relation to high/low API ethnic enclaves (dichotomous)

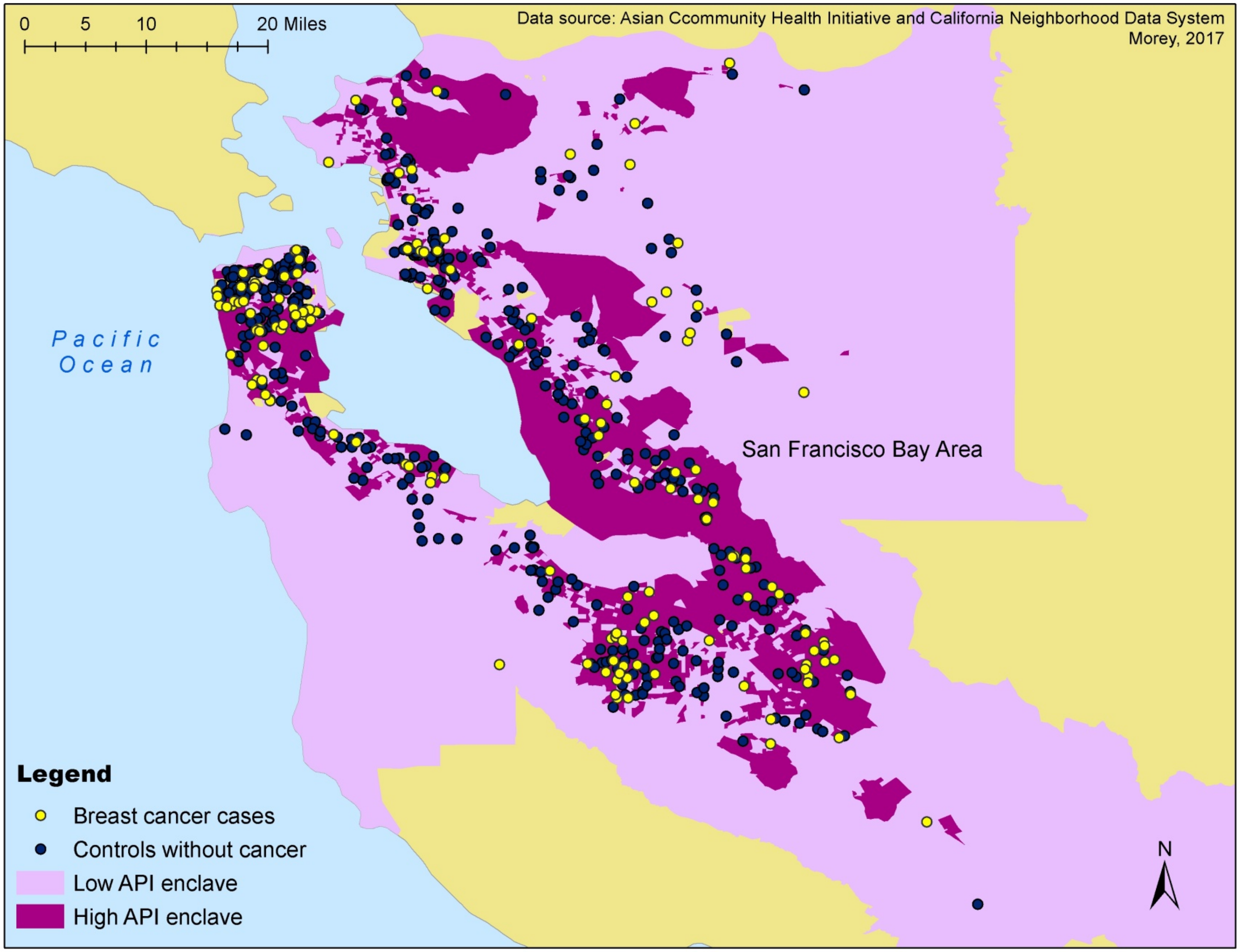


Figure 5.4: Map of Asian CHI breast cancer cases and controls in relation to percent API in 2000 Census block groups

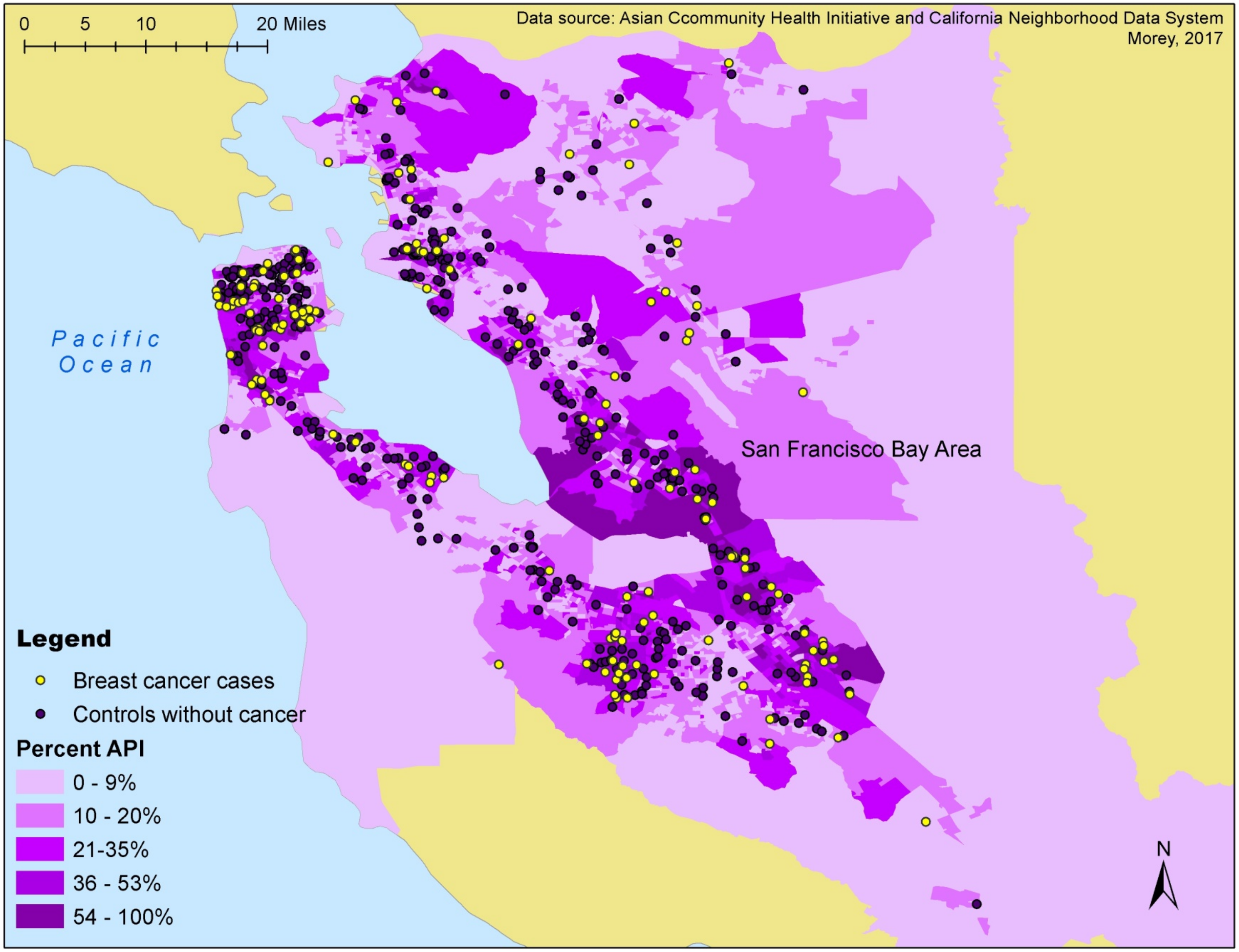


Figure 5.5: Map of Asian CHI breast cancer cases and controls in relation to percent immigrant in 2000 Census block groups

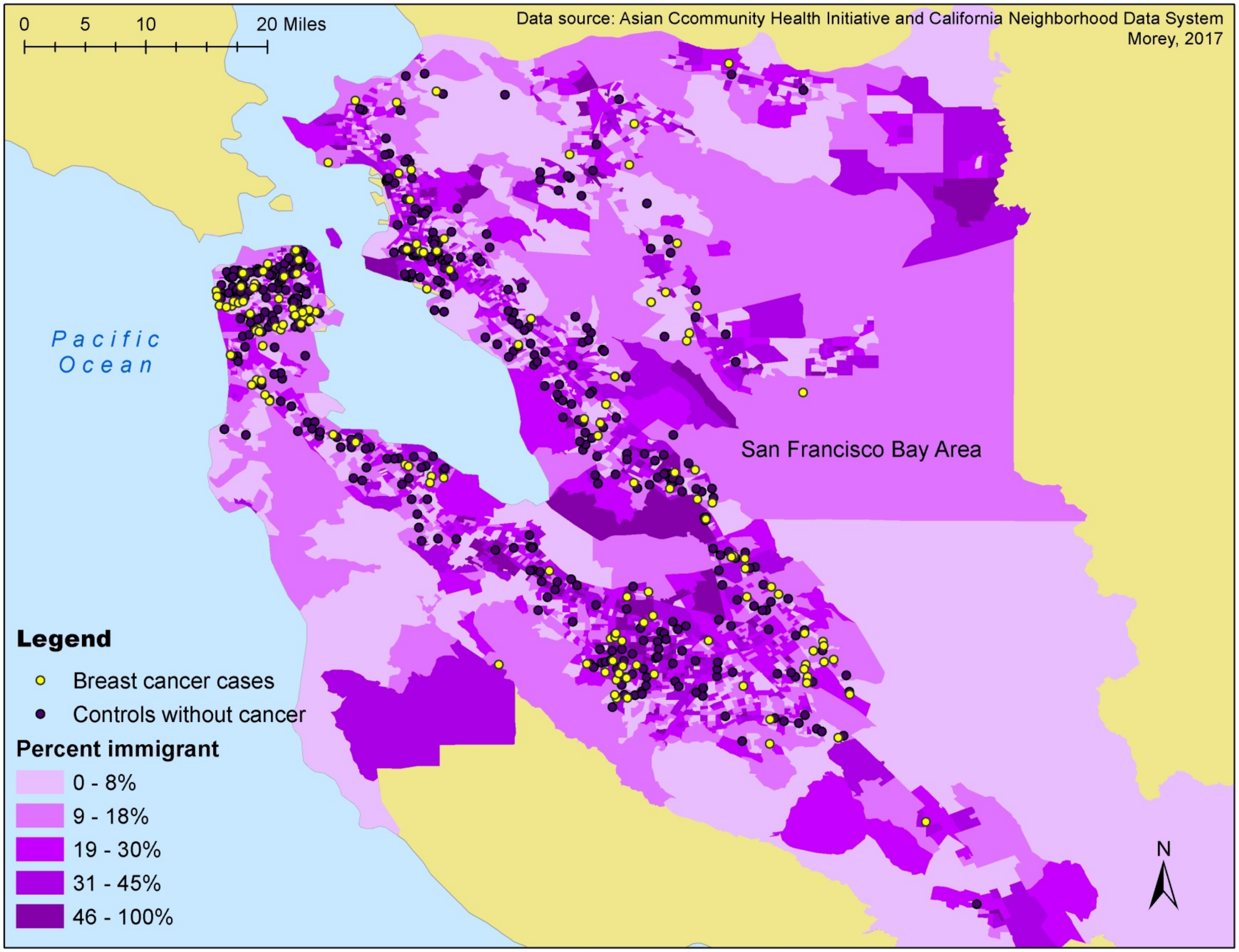


Figure 5.6: Map of Asian CHI breast cancer cases and controls in relation to percent households that are API language speaking and linguistically isolated in 2000 Census block groups

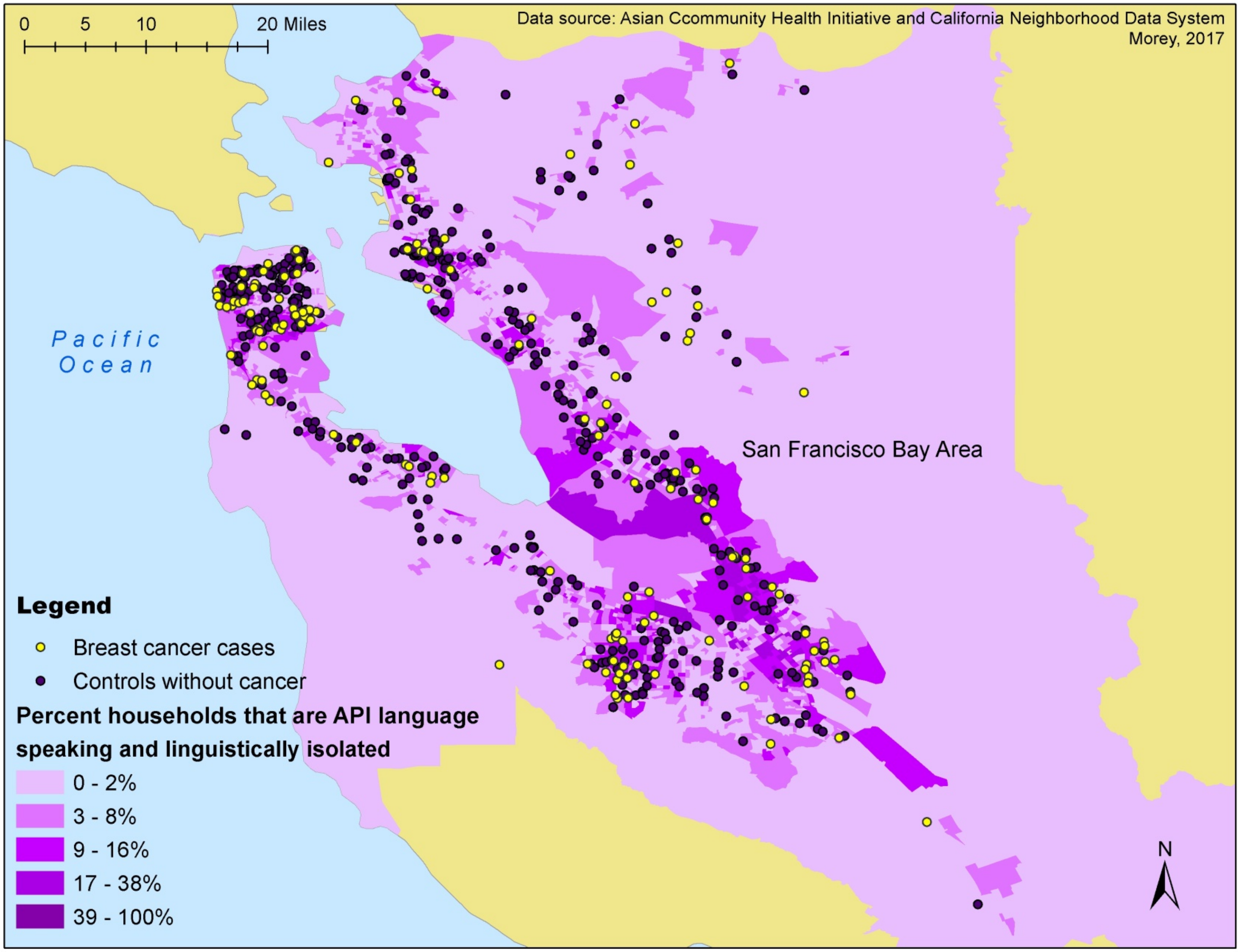


Figure 5.7: Map of Asian CHI breast cancer cases and controls in relation to percent residents who are API language speaking and have limited English proficiency in 2000 Census block groups

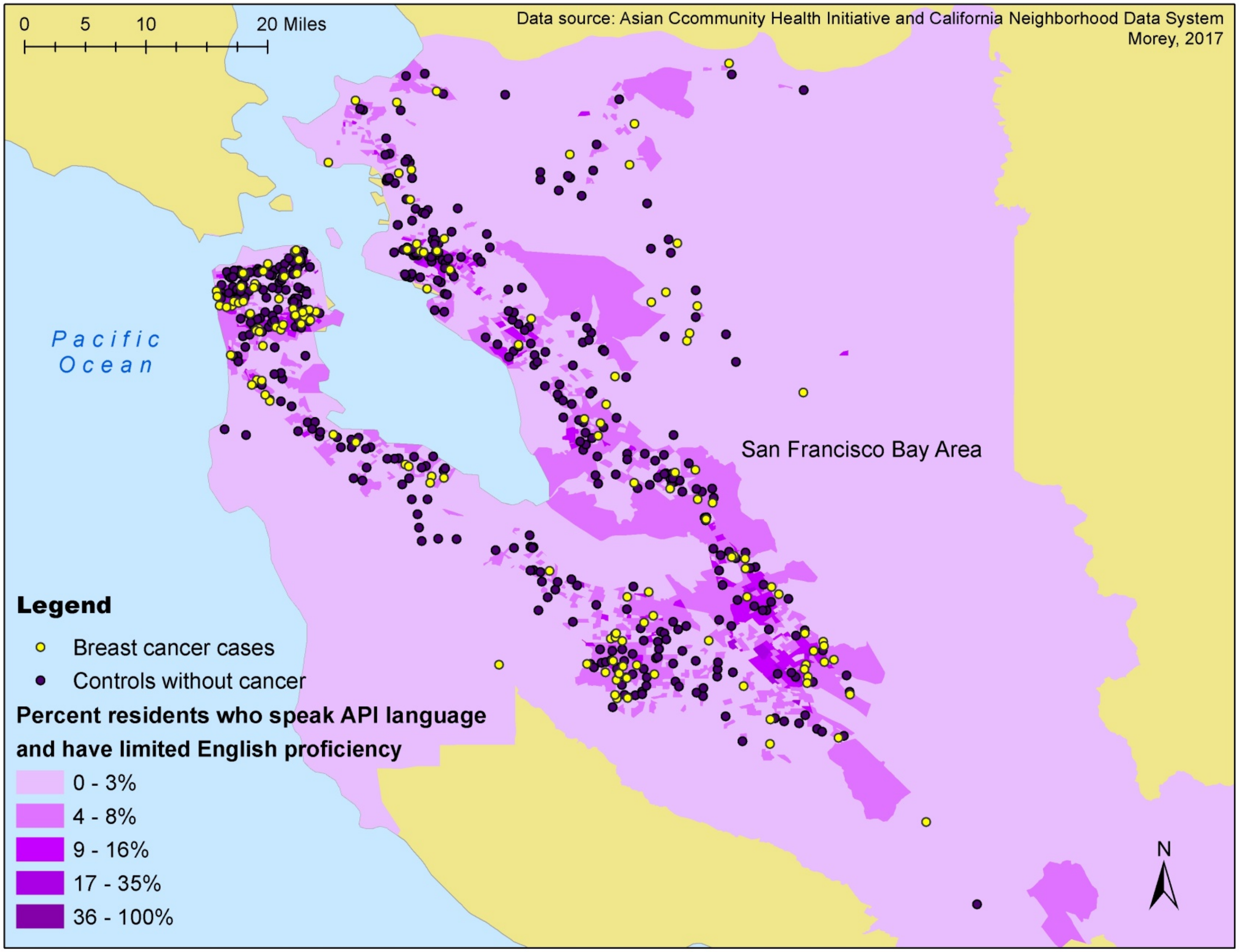


Table 5A.1: Logistic regression of odds of breast cancer on living in an ethnic enclave and covariates.
Asian Community Health Initiative, full sample. N=546

VARIABLES	*Odds of having breast cancer OR (se)*
High API enclave (ref = low API enclave)	2.60**
	(0.93)
Age (10 years, centered at 59)	7.17***
	(1.80)
Marital status (ref = Married)	
Formerly married	1.20
	(0.47)
Single	2.02
	(0.88)
Asian ethnicity (ref = Chinese)	
Filipina	3.20*
	(1.45)
Other AANHPI	2.07†
	(0.82)
Survey language (ref = English)	
Chinese	1.36
	(0.54)
Tagalog	0.30
	(0.23)
US-born (ref = Foreign-born)	0.56
	(0.22)
Education (ref = College graduate)	
<=High school	2.97**
	(1.19)
Some college	0.90
	(0.38)
Employment (ref = Full time)	
Part time	0.75
	(0.31)
Not working	1.03
	(0.32)
Homeowner (ref = renter/other non-homeowner)	4.19***
	(1.64)

Public insurance/Other/Not insured (ref = private insurance)	0.46
	(0.23)
Ever pregnant (ref = never pregnant)	1.01
	(0.52)
Number of pregnancies	1.19
	(0.22)
Age at first birth	1.06†
	(0.033)
Number of months breastfed	0.99
	(0.010)
Age at first menstrual period	0.87†
	(0.072)
Any family history of breast cancer (ref = none)	2.38**
	(0.77)
Menopausal status (ref = premenopausal)	
Post-menopausal, no hormone therapy	0.047***
	(0.020)
Post-menopausal, used hormone therapy	0.086***
	(0.044)
High neighborhood SES (ref = low neighborhood SES)	1.96*
	(0.63)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	3.08†
	(1.94)
Metropolitan suburb	1.04
	(0.31)
Years lived at current address	0.95***
	(0.015)
Constant	0.24
	(0.30)

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, † p<0.1
NOTE: Standard errors adjusted for clustering at the Census block group level.

Table 5A.2: Logistic regression of odds of breast cancer on living in an ethnic enclave moderated by nativity and covariates. Asian Community Health Initiative, full sample. N=546

VARIABLES	*Odds of having breast cancer OR (se)*
High API enclave (ref = low API enclave)	3.37**
	(1.50)
US-born (ref = Foreign-born)	0.94
	(0.58)
High API enclave x US-born	0.46
	(0.35)
Age (10 years, centered at 59)	7.06***
	(1.78)
Marital status (ref = Married)	
Formerly married	1.25
	(0.50)
Single	2.01
	(0.87)
Asian ethnicity (ref = Chinese)	
Filipina	3.10*
	(1.43)
Other AANHPI	2.12†
	(0.83)
Survey language (ref = English)	
Chinese	1.32
	(0.52)
Tagalog	0.31
	(0.23)
Education (ref = College graduate)	
<=High school	2.97**
	(1.20)
Some college	0.91
	(0.38)
Employment (ref = Full time)	
Part time	0.74
	(0.31)
Not working	1.05
	(0.33)

Homeowner (ref = renter/other non-homeowner)	4.29***
	(1.69)
Public insurance/Other/Not insured (ref = private insurance)	0.45
	(0.23)
Ever pregnant (ref = never pregnant)	1.06
	(0.54)
Number of pregnancies	1.18
	(0.22)
Age at first birth	1.05†
	(0.033)
Number of months breastfed	0.99
	(0.010)
Age at first menstrual period	0.88
	(0.072)
Any family history of breast cancer (ref = none)	2.48**
	(0.81)
Menopausal status (ref = premenopausal)	
Post-menopausal, no hormone therapy	0.046***
	(0.020)
Post-menopausal, used hormone therapy	0.087***
	(0.045)
High neighborhood SES (ref = low neighborhood SES)	1.96*
	(0.63)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	3.33†
	(2.08)
Metropolitan suburb	1.03
	(0.31)
Years lived at current address	0.95***
	(0.015)
Constant	0.018***
	(0.016)

Robust standard errors in parentheses
*** $p<0.001$, ** $p<0.01$, * $p<0.05$, † $p<0.1$
NOTE: Age, number of pregnancies, number of months breastfed, age at first menstrual period, and years lived at current address are centered at the mean.

Table 5B: Ordinary least squares regression of moderate physical activity on living in an ethnic enclave and moderation by nativity and covariates. Asian Community Health Initiative, control sample. N=418

	Moderate physical activity (hrs/week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
High API enclave (ref = low API enclave)	-0.15	-0.36	-0.38	-0.56
	(0.40)	(0.40)	(0.41)	(0.55)
US-born (ref = Foreign-born)	1.41*	1.29*	1.27*	1.02
	(0.43)	(0.44)	(0.45)	(0.73)
High API enclave x US-born	---	---	---	0.39
				(0.82)
Age (10 years)	-0.079	-0.24	-0.26	-0.25
	(0.16)	(0.17)	(0.18)	(0.18)
Marital status (ref = Married)				
Formerly married	0.29	0.033	0.063	0.039
	(0.57)	(0.57)	(0.57)	(0.58)
Single	-0.29	-0.26	-0.27	-0.27
	(0.45)	(0.46)	(0.46)	(0.46)
Asian ethnicity (ref = Chinese)				
Filipina	-0.20	-0.24	-0.29	-0.29
	(0.60)	(0.60)	(0.61)	(0.61)
Other AANHPI	0.16	-0.13	-0.12	-0.13
	(0.45)	(0.46)	(0.46)	(0.46)
Survey language (ref = English)				
Chinese	0.76	-0.34	-0.37	-0.35
	(0.51)	(0.60)	(0.60)	(0.59)
Tagalog	-0.055	-0.83	-0.79	-0.77
	(0.90)	(0.95)	(0.96)	(0.97)
Education (ref = College graduate)				
<=High school		2.31**	2.24**	2.26**
		(0.65)	(0.66)	(0.67)
Some college		1.09†	1.04†	1.06†
		(0.50)	(0.50)	(0.50)
Employment (ref = Full time)				
Part time		0.31	0.28	0.29
		(0.43)	(0.44)	(0.44)
Not working		0.39	0.39	0.39
		(0.46)	(0.47)	(0.47)

Homeowner (ref = renter/other non-homeowner)		-0.13	-0.17	-0.17
		(0.47)	(0.52)	(0.52)
Public insurance/Other/Not insured (ref = private insurance)		-0.31	-0.33	-0.32
		(0.57)	(0.58)	(0.58)
High neighborhood SES (ref = low neighborhood SES)			-0.23	-0.22
			(0.42)	(0.42)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural			-0.043	-0.11
			(0.84)	(0.85)
Metropolitan suburb			0.11	0.10
			(0.38)	(0.39)
Years lived at current address			0.0073	0.0069
			(0.022)	(0.022)
Constant	4.59**	4.61**	4.79**	4.91**
	(0.50)	(0.72)	(0.82)	(0.88)
R-squared	0.035	0.074	0.075	0.076
<u>Model Comparisons:</u>				
Wald F		2.78	0.13	0.23
Wald Prob>F		0.012	0.97	0.63
Wald df		6, 363	4, 363	1, 363

Robust standard errors in parentheses
** p<0.001, * p<0.009, † p<0.05
NOTE: Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.009 is considered significant. Age and years lived at current address are centered at the mean.

Table 5C: Ordinary least squares regression of strenuous physical activity on living in an ethnic enclave and moderation by nativity and covariates. Asian Community Health Initiative, control sample. N=411

	Strenuous physical activity (square root of hrs/week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
High API enclave (ref = low API enclave)	-0.20	-0.25†	-0.29*	-0.30†
	(0.10)	(0.10)	(0.11)	(0.15)
US-born (ref = Foreign-born)	0.43**	0.43**	0.40*	0.40†
	(0.12)	(0.12)	(0.12)	(0.18)
High API enclave x US-born	---	---	---	0.0079
				(0.21)
Age (10 years)	-0.024	-0.034	-0.045	-0.044
	(0.048)	(0.050)	(0.054)	(0.054)
Marital status (ref = Married)				
Formerly married	0.0045	-0.0031	-0.0081	-0.0086
	(0.16)	(0.16)	(0.16)	(0.17)
Single	-0.043	-0.012	-0.028	-0.028
	(0.12)	(0.13)	(0.13)	(0.13)
Asian ethnicity (ref = Chinese)				
Filipina	0.059	0.068	0.064	0.064
	(0.17)	(0.17)	(0.17)	(0.17)
Other AANHPI	-0.019	-0.049	-0.044	-0.044
	(0.13)	(0.13)	(0.13)	(0.13)
Survey language (ref = English)				
Chinese	0.13	-0.050	-0.067	-0.066
	(0.15)	(0.17)	(0.17)	(0.17)
Tagalog	-0.00058	-0.075	-0.036	-0.036
	(0.27)	(0.29)	(0.29)	(0.29)
Education (ref = College graduate)				
<=High school		0.61**	0.58*	0.58*
		(0.17)	(0.18)	(0.18)
Some college		0.084	0.062	0.063
		(0.13)	(0.13)	(0.14)
Employment (ref = Full time)				
Part time		-0.053	-0.044	-0.044
		(0.13)	(0.13)	(0.13)
Not working		-0.018	-0.015	-0.015

		(0.13)	(0.13)	(0.13)
Homeowner (ref = renter/other non-homeowner)		-0.00047	-0.0014	-0.0015
		(0.12)	(0.12)	(0.12)
Public insurance/Other/Not insured (ref = private insurance)		-0.20	-0.21	-0.21
		(0.16)	(0.17)	(0.17)
High neighborhood SES (ref = low neighborhood SES)			-0.074	-0.074
			(0.12)	(0.12)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural			-0.23	-0.23
			(0.24)	(0.24)
Metropolitan suburb			-0.10	-0.10
			(0.11)	(0.11)
Years lived at current address			0.0047	0.0047
			(0.0063)	(0.0063)
Constant	1.61**	1.66**	1.84**	1.84**
	(0.14)	(0.19)	(0.23)	(0.24)
R-squared	0.045	0.078	0.084	0.084
<u>Model Comparisons:</u>				
Wald F		2.33	0.68	0.0014
Wald Prob>F		0.032	0.61	0.97
Wald df		6, 358	4, 358	1, 358

Robust standard errors in parentheses

** p<0.001, * p<0.009, † p<0.05

NOTE: Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.009 is considered significant. Age and years lived at current address are centered at the mean.

Table 5D: Negative binomial regression of average weekly alcohol use on living in an ethnic enclave and moderation by nativity and covariates.
Asian Community Health Initiative, control sample. N=430

	Average weekly alcohol use (drinks per week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
High API enclave (ref = low API enclave)	-0.50†	-0.46†	-0.55*	-0.38
	(0.21)	(0.21)	(0.19)	(0.29)
US-born (ref = Foreign-born)	0.69*	0.75*	0.72*	0.95*
	(0.24)	(0.24)	(0.24)	(0.31)
High API enclave x US-born	---	---	---	-0.36
				(0.37)
Age (10 years)	-0.10	-0.044	-0.023	-0.037
	(0.082)	(0.085)	(0.087)	(0.086)
Marital status (ref = Married)				
Formerly married	-0.55	-0.39	-0.41	-0.37
	(0.33)	(0.35)	(0.32)	(0.32)
Single	0.21	0.22	0.21	0.23
	(0.22)	(0.23)	(0.22)	(0.22)
Asian ethnicity (ref = Chinese)				
Filipina	0.17	0.30	0.40	0.42
	(0.35)	(0.35)	(0.33)	(0.33)
Other AANHPI	0.73*	0.90**	0.85**	0.85**
	(0.24)	(0.24)	(0.22)	(0.22)
Survey language (ref = English)				
Chinese	-0.39	0.039	-0.023	-0.020
	(0.36)	(0.39)	(0.38)	(0.38)
Tagalog	-2.22**	-1.89*	-1.82*	-1.81*
	(0.61)	(0.68)	(0.65)	(0.65)
Education (ref = College graduate)				
<=High school		-1.14†	-1.05†	-1.06†
		(0.44)	(0.45)	(0.45)
Some college		-0.46	-0.49	-0.53
		(0.36)	(0.30)	(0.30)
Employment (ref = Full time)				
Part time		-0.51†	-0.41	-0.40
		(0.24)	(0.24)	(0.25)
Not working		-0.075	-0.020	0.017

		(0.25)	(0.24)	(0.24)
Homeowner (ref = renter/other non-homeowner)		0.018	0.12	0.14
		(0.23)	(0.24)	(0.23)
Public insurance/Other/Not insured (ref = private insurance)		0.13	-0.041	-0.079
		(0.31)	(0.30)	(0.30)
High neighborhood SES (ref = low neighborhood SES)			0.073	0.069
			(0.24)	(0.24)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural			-0.61	-0.57
			(0.39)	(0.39)
Metropolitan suburb			-0.63*	-0.65*
			(0.23)	(0.22)
Years lived at current address			-0.0019	-0.0022
			(0.012)	(0.012)
Constant	-0.12	-0.090	0.26	0.12
	(0.27)	(0.32)	(0.43)	(0.43)
<u>Model Comparisons:</u>				
Wald F		14.2	8.38	0.92
Wald Prob>F		0.027	0.079	0.34
Wald df		6	4	1

Robust standard errors in parentheses

** p<0.001, * p<0.009, † p<0.05

NOTE: Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.009 is considered significant. Age and years lived at current address are centered at the mean.

Table 5E: Ordinary least squares regression of fruit consumption on living in an ethnic enclave and moderation by nativity and covariates. Asian Community Health Initiative, control sample. N=425

	Fruit consumption (times per week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
High API enclave (ref = low API enclave)	-0.48	-0.39	-0.63	-0.054
	(0.56)	(0.55)	(0.56)	(0.74)
US-born (ref = Foreign-born)	-0.51	-0.40	-0.46	0.33
	(0.64)	(0.64)	(0.64)	(0.96)
High API enclave x US-born	---	---	---	-1.25
				(1.13)
Age (10 years)	0.54†	0.65*	0.75*	0.72*
	(0.21)	(0.22)	(0.24)	(0.24)
Marital status (ref = Married)				
Formerly married	-0.36	-0.065	-0.072	0.0055
	(0.69)	(0.69)	(0.68)	(0.69)
Single	-0.50	-0.33	-0.21	-0.22
	(0.64)	(0.65)	(0.68)	(0.67)
Asian ethnicity (ref = Chinese)				
Filipina	-0.13	0.15	0.046	-0.00027
	(0.84)	(0.82)	(0.83)	(0.83)
Other AANHPI	-0.28	0.074	0.027	0.024
	(0.66)	(0.66)	(0.66)	(0.66)
Survey language (ref = English)				
Chinese	0.56	1.49	1.19	1.12
	(0.71)	(0.82)	(0.84)	(0.84)
Tagalog	-0.065	0.85	0.73	0.69
	(1.13)	(1.16)	(1.20)	(1.20)
Education (ref = College graduate)				
<=High school		-1.21	-1.28	-1.36
		(0.79)	(0.82)	(0.82)
Some college		-1.16	-1.09	-1.14
		(0.61)	(0.63)	(0.63)
Employment (ref = Full time)				
Part time		-0.83	-0.63	-0.68
		(0.63)	(0.65)	(0.66)
Not working		0.36	0.59	0.57

		(0.60)	(0.61)	(0.61)
Homeowner (ref = renter/other non-homeowner)		0.43	0.80	0.82
		(0.58)	(0.61)	(0.61)
Public insurance/Other/Not insured (ref = private insurance)		-0.40	-0.62	-0.62
		(0.67)	(0.68)	(0.68)
High neighborhood SES (ref = low neighborhood SES)			-0.49	-0.52
			(0.59)	(0.59)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural			-1.78	-1.56
			(1.13)	(1.11)
Metropolitan suburb			-0.22	-0.20
			(0.54)	(0.53)
Years lived at current address			-0.034	-0.032
			(0.028)	(0.028)
Constant	8.82**	8.53**	9.06**	8.68**
	(0.66)	(0.84)	(1.00)	(1.05)
R-squared	0.038	0.062	0.072	0.075
Model Comparisons:				
Wald F		1.96	1.14	1.22
Wald Prob>F		0.070	0.34	0.27
Wald df		6, 370	4, 370	1, 370

Robust standard errors in parentheses
** p<0.001, * p<0.009, † p<0.05
NOTE: Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.009 is considered significant. Age and years lived at current address are centered at the mean.

Table 5F: Ordinary least squares regression of vegetable consumption on living in an ethnic enclave and moderation by nativity and covariates.
Asian Community Health Initiative, control sample. N=425

	Vegetable consumption (times per week): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
High API enclave (ref = low API enclave)	-0.38	-0.35	-0.38	0.41
	(0.52)	(0.53)	(0.55)	(0.73)
US-born (ref = Foreign-born)	-0.63	-0.49	-0.70	0.38
	(0.60)	(0.60)	(0.61)	(0.87)
High API enclave x US-born	---	---	---	-1.71
				(1.04)
Age (10 years)	0.066	0.18	0.11	0.077
	(0.20)	(0.22)	(0.24)	(0.24)
Marital status (ref = Married)				
Formerly married	-1.06	-0.82	-0.82	-0.72
	(0.59)	(0.61)	(0.61)	(0.61)
Single	-0.75	-0.72	-0.89	-0.90
	(0.63)	(0.64)	(0.64)	(0.64)
Asian ethnicity (ref = Chinese)				
Filipina	-2.29*	-2.11†	-2.22*	-2.28*
	(0.83)	(0.84)	(0.84)	(0.84)
Other AANHPI	-0.78	-0.55	-0.47	-0.47
	(0.59)	(0.60)	(0.60)	(0.59)
Survey language (ref = English)				
Chinese	-0.12	0.38	0.36	0.26
	(0.66)	(0.77)	(0.76)	(0.76)
Tagalog	0.90	1.26	0.95	0.89
	(1.17)	(1.24)	(1.23)	(1.24)
Education (ref = College graduate)				
<=High school		-0.38	-0.15	-0.26
		(0.74)	(0.74)	(0.75)
Some college		-0.86	-0.71	-0.78
		(0.61)	(0.62)	(0.63)
Employment (ref = Full time)				
Part time		-0.67	-0.72	-0.79
		(0.61)	(0.60)	(0.60)
Not working		-0.57	-0.65	-0.68

		(0.56)	(0.56)	(0.56)
Homeowner (ref = renter/other non-homeowner)		0.62	0.39	0.42
		(0.54)	(0.58)	(0.57)
Public insurance/Other/Not insured (ref = private insurance)		0.21	0.36	0.36
		(0.70)	(0.71)	(0.70)
High neighborhood SES (ref = low neighborhood SES)			0.61	0.57
			(0.52)	(0.52)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural			-1.55	-1.24
			(1.06)	(1.06)
Metropolitan suburb			0.80	0.82
			(0.50)	(0.49)
Years lived at current address			-0.0040	-0.0018
			(0.028)	(0.027)
Constant	10.0**	9.79**	9.20**	8.67**
	(0.62)	(0.87)	(0.96)	(1.01)
R-squared	0.043	0.057	0.076	0.082
Model Comparisons:				
Wald F		0.90	2.18	2.71
Wald Prob>F		0.50	0.071	0.10
Wald df		6, 370	4, 370	1, 370

Robust standard errors in parentheses

** p<0.001, * p<0.009, † p<0.05

NOTE: Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.009 is considered significant. Age and years lived at current address are centered at the mean.

Table 5G: Ordinary least squares regression of body mass index on living in an ethnic enclave and moderation by nativity and covariates. Asian Community Health Initiative, control sample. N=410

	Body mass index (kg/m^2): b(se)			
VARIABLES	Model 1	Model 2	Model 3	Model 4
High API enclave (ref = low API enclave)	-0.32	-0.45	-0.52	0.44
	(0.60)	(0.60)	(0.58)	(0.63)
US-born (ref = Foreign-born)	2.23*	2.12*	2.22*	3.56*
	(0.68)	(0.64)	(0.73)	(1.18)
High API enclave x US-born	---	---	---	-2.12
				(1.31)
Age (10 years)	0.12	-0.036	0.0097	-0.034
	(0.21)	(0.26)	(0.26)	(0.26)
Marital status (ref = Married)				
Formerly married	0.22	-0.37	-0.33	-0.21
	(0.53)	(0.57)	(0.55)	(0.54)
Single	-0.59	-1.07	-0.92	-0.93
	(0.61)	(0.68)	(0.67)	(0.67)
Asian ethnicity (ref = Chinese)				
Filipina	1.76†	1.20	1.12	1.03
	(0.70)	(0.71)	(0.71)	(0.70)
Other AANHPI	2.42**	1.94*	1.89*	1.90*
	(0.69)	(0.59)	(0.59)	(0.59)
Survey language (ref = English)				
Chinese	1.28†	-0.23	-0.36	-0.47
	(0.60)	(0.74)	(0.77)	(0.76)
Tagalog	1.77	0.33	0.64	0.59
	(0.99)	(1.09)	(1.06)	(1.06)
Education (ref = College graduate)				
<=High school		1.09	0.78	0.66
		(0.95)	(0.96)	(0.93)
Some college		0.75	0.58	0.48
		(0.75)	(0.72)	(0.71)
Employment (ref = Full time)				
Part time		0.23	0.29	0.23
		(0.63)	(0.63)	(0.64)
Not working		-0.89	-0.74	-0.74
		(0.56)	(0.59)	(0.59)

Homeowner (ref = renter/other non-homeowner)		-1.05	-0.80	-0.78
		(0.59)	(0.63)	(0.64)
Public insurance/Other/Not insured (ref = private insurance)		1.62	1.40	1.36
		(0.90)	(0.87)	(0.86)
High neighborhood SES (ref = low neighborhood SES)			-0.97	-1.01
			(0.64)	(0.63)
Urbanicity (ref = metropolitan urban)				
Non-metropolitan city/Rural			0.52	0.93
			(1.99)	(2.06)
Metropolitan suburb			-0.63	-0.60
			(0.50)	(0.50)
Years lived at current address			0.0016	0.0036
			(0.023)	(0.024)
Constant	22.0**	23.2**	24.2**	23.5**
	(0.61)	(0.86)	(0.93)	(0.94)
R-squared	0.089	0.140	0.153	0.161
Model Comparisons:				
Wald F		1.87	1.20	2.60
Wald Prob>F		0.085	0.31	0.11
Wald df		6, 357	4, 357	1, 357

Robust standard errors in parentheses
** p<0.001, * p<0.009, † p<0.05
NOTE: Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.009 is considered significant. Age and years lived at current address are centered at the mean.

Figure 5.8: Map of Asian CHI breast cancer cases and controls in relation to high/low neighborhood socioeconomic status in 2010 Census block groups

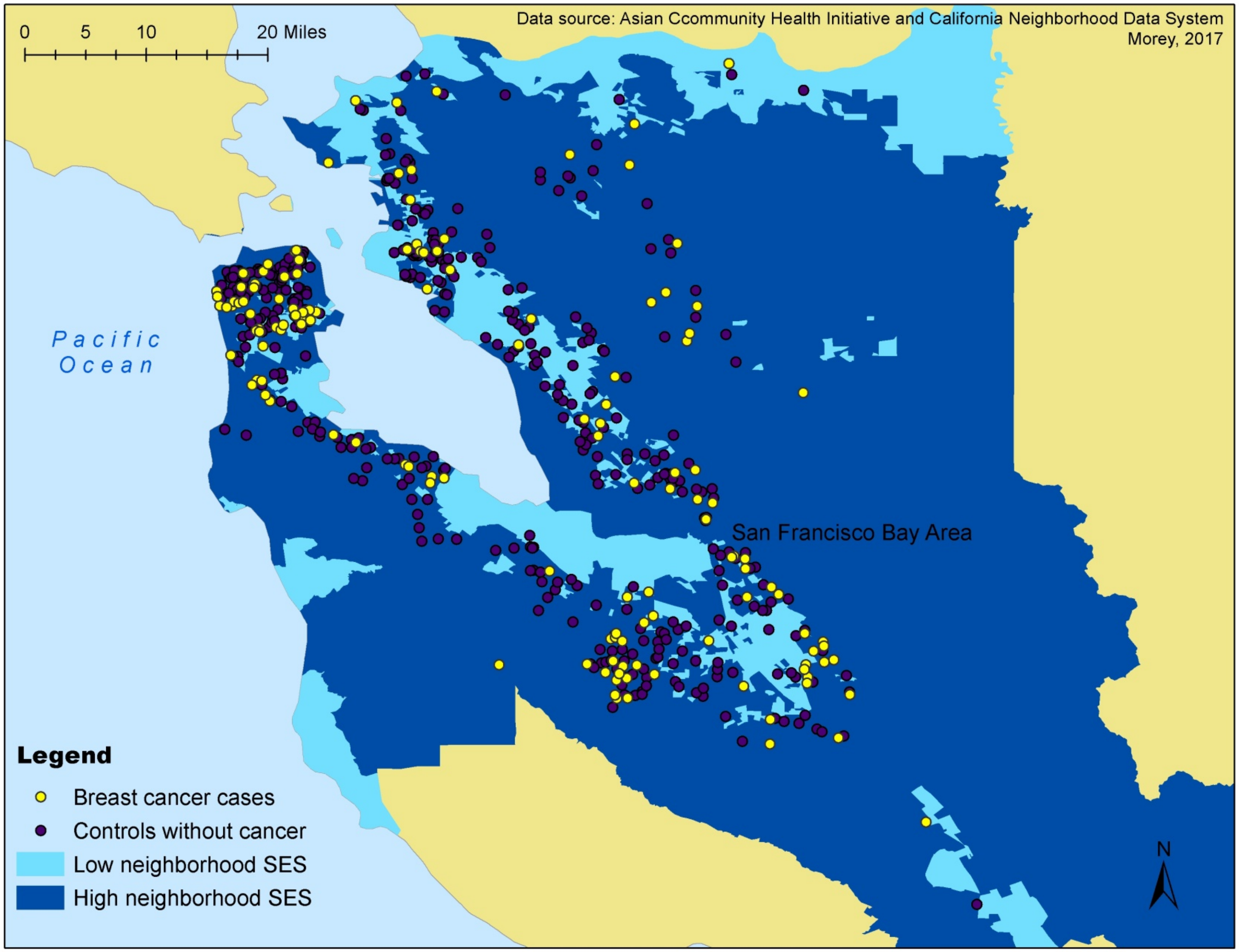


Figure 5.9: Map of Asian CHI breast cancer cases and controls in relation to the interaction between API ethnic enclave and neighborhood socioeconomic status in block groups

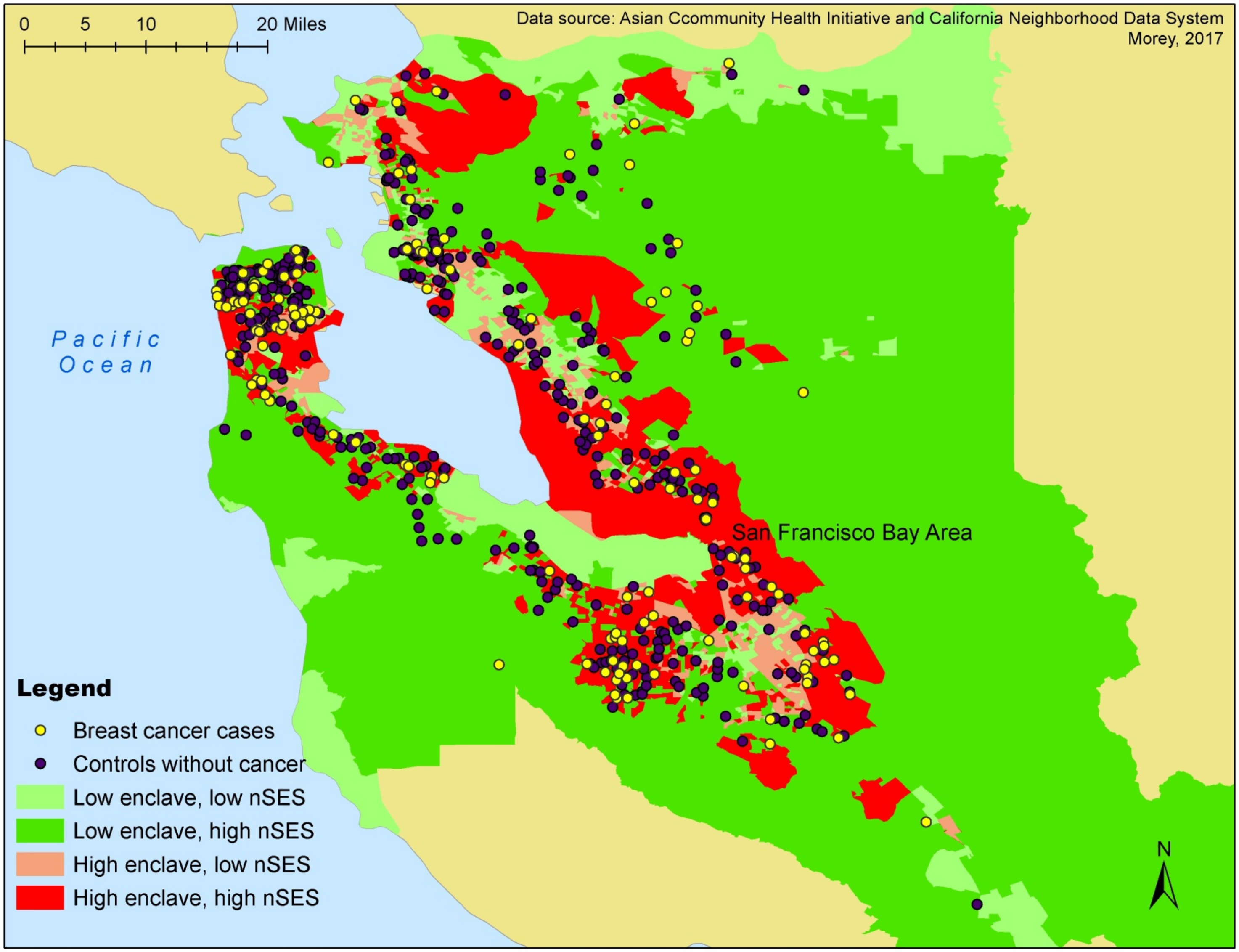


Table 5A.S: Logistic regression of odds of breast cancer on living in an ethnic enclave moderated by neighborhood socioeconomic status and covariates. Asian Community Health Initiative, full sample. N=546

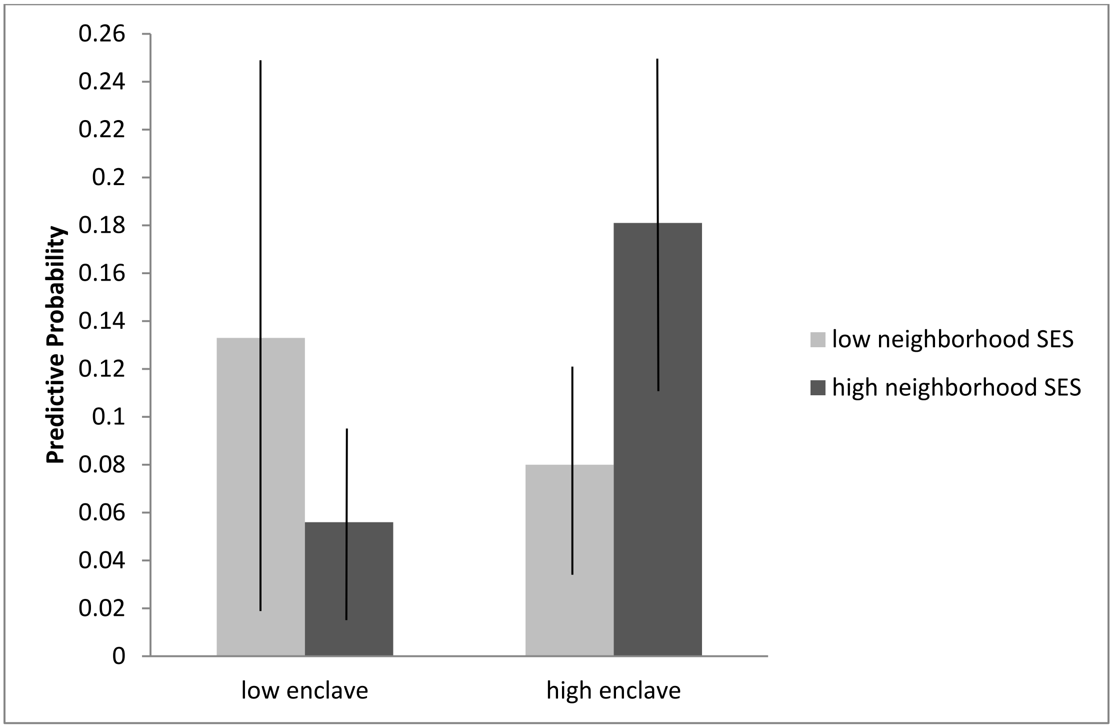
VARIABLES	*Odds of having breast cancer OR (se)*
High API enclave (ref = low API enclave)	0.57
	(0.34)
High neighborhood SES (ref = low neighborhood SES)	0.39
	(0.25)
High API enclave x High neighborhood SES	6.54**
	(4.67)
Age (10 years, centered at 59)	7.52***
	(1.92)
Marital status (ref = Married)	
Formerly married	1.14
	(0.45)
Single	2.03
	(0.90)
Asian ethnicity (ref = Chinese)	
Filipina	3.34**
	(1.54)
Other AANHPI	2.19†
	(0.89)
Survey language (ref = English)	
Chinese	1.37
	(0.55)
Tagalog	0.30†
	(0.22)
US-born (ref = Foreign-born)	0.58
	(0.22)
Education (ref = College graduate)	
<=High school	3.27**
	(1.37)
Some college	0.88
	(0.36)
Employment (ref = Full time)	
Part time	0.74
	(0.31)

Not working	1.09
	(0.34)
Homeowner (ref = renter/other non-homeowner)	4.07***
	(1.58)
Public insurance/Other/Not insured (ref = private insurance)	0.46
	(0.22)
Ever pregnant (ref = never pregnant)	1.17
	(0.58)
Number of pregnancies	1.15
	(0.21)
Age at first birth	1.06†
	(0.034)
Number of months breastfed	0.99
	(0.010)
Age at first menstrual period	0.86†
	(0.071)
Any family history of breast cancer (ref = none)	2.52**
	(0.83)
Menopausal status (ref = premenopausal)	
Post-menopausal, no hormone therapy	0.043***
	(0.019)
Post-menopausal, used hormone therapy	0.075***
	(0.039)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	3.93*
	(2.52)
Metropolitan suburb	1.06
	(0.32)
Years lived at current address	0.95***
	(0.015)
Constant	0.076***
	(0.060)

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, † p<0.1

NOTE: Age, number of pregnancies, number of months breastfed, age at first menstrual period, and years lived at current address are centered at the mean.

Figure 5.10. The association between living in an ethnic enclave and the predictive probability of having breast cancer, moderated by neighborhood socioeconomic status. N=546



Note: Vertical lines indicate 95% confidence intervals.

Table 5B.S: Ordinary least squares regression of moderate physical activity on living in an ethnic enclave moderated by neighborhood socioeconomic status and covariates. Asian Community Health Initiative, control sample. N=418

VARIABLES	*Moderate physical activity (hrs/week): b(se)*
High API enclave (ref = low API enclave)	-0.13
	(0.89)
High neighborhood SES (ref = low neighborhood SES)	0.028
	(0.88)
High API enclave x High neighborhood SES	-0.32
	(0.99)
Age (10 years, centered at 59)	-0.26
	(0.18)
Marital status (ref = Married)	
Formerly married	0.083
	(0.58)
Single	-0.26
	(0.46)
Asian ethnicity (ref = Chinese)	
Filipina	-0.31
	(0.61)
Other AANHPI	-0.13
	(0.46)
Survey language (ref = English)	
Chinese	-0.38
	(0.60)
Tagalog	-0.80
	(0.97)
US-born (ref = Foreign-born)	1.26*
	(0.45)
Education (ref = College graduate)	
<=High school	2.22**
	(0.67)
Some college	1.04†
	(0.50)
Employment (ref = Full time)	
Part time	0.29

	(0.44)
Not working	0.38
	(0.47)
Homeowner (ref = renter/other non-homeowner)	-0.17
	(0.52)
Public insurance/Other/Not insured (ref = private insurance)	-0.33
	(0.58)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.068
	(0.84)
Metropolitan suburb	0.11
	(0.39)
Years lived at current address	0.0066
	(0.022)
Constant	4.59**
	(1.04)
	0.075

Robust standard errors in parentheses
** p<0.001, * p<0.009, † p<0.05

NOTE: Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.009 is considered significant. Age and years lived at current address are centered at the mean.

Table 5C.S: Ordinary least squares regression of strenuous physical activity on living in an ethnic enclave moderated by neighborhood socioeconomic status and covariates. Asian Community Health Initiative, control sample. N=411

VARIABLES	*Strenuous physical activity (square root of hrs/week): b(se)*
High API enclave (ref = low API enclave)	-0.37
	(0.22)
High neighborhood SES (ref = low neighborhood SES)	-0.16
	(0.22)
High API enclave x High neighborhood SES	0.11
	(0.24)
Age (10 years, centered at 59)	-0.044
	(0.054)
Marital status (ref = Married)	
Formerly married	-0.015
	(0.16)
Single	-0.030
	(0.13)
Asian ethnicity (ref = Chinese)	
Filipina	0.066
	(0.17)
Other AANHPI	-0.041
	(0.13)
Survey language (ref = English)	
Chinese	-0.060
	(0.17)
Tagalog	-0.029
	(0.30)
US-born (ref = Foreign-born)	0.40*
	(0.12)
Education (ref = College graduate)	
<=High school	0.58*
	(0.18)
Some college	0.065
	(0.13)
Employment (ref = Full time)	
Part time	-0.049

	(0.13)
Not working	-0.013
	(0.13)
Homeowner (ref = renter/other non-homeowner)	-0.0016
	(0.12)
Public insurance/Other/Not insured (ref = private insurance)	-0.21
	(0.17)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.22
	(0.24)
Metropolitan suburb	-0.10
	(0.11)
Years lived at current address	0.0050
	(0.0063)
Constant	1.90**
	(0.27)
	0.085

Robust standard errors in parentheses
** p<0.001, * p<0.009, † p<0.05
NOTE: Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.009 is considered significant. Age and years lived at current address are centered at the mean.

Table 5D.S: Negative binomial regression of average weekly alcohol use on living in an ethnic enclave moderated by neighborhood socioeconomic status and covariates. Asian Community Health Initiative, control sample. N=430

VARIABLES	*Average weekly alcohol use (drinks per week): b(se)*
High API enclave (ref = low API enclave)	-0.73
	(0.49)
High neighborhood SES (ref = low neighborhood SES)	-0.089
	(0.45)
High API enclave x High neighborhood SES	0.22
	(0.53)
Age (10 years, centered at 59)	-0.024
	(0.086)
Marital status (ref = Married)	
Formerly married	-0.43
	(0.31)
Single	0.21
	(0.22)
Asian ethnicity (ref = Chinese)	
Filipina	0.42
	(0.33)
Other AANHPI	0.86**
	(0.22)
Survey language (ref = English)	
Chinese	-0.0095
	(0.37)
Tagalog	-1.81*
	(0.65)
US-born (ref = Foreign-born)	0.72*
	(0.24)
Education (ref = College graduate)	
<=High school	-1.04†
	(0.46)
Some college	-0.50
	(0.30)
Employment (ref = Full time)	
Part time	-0.43

	(0.25)
Not working	-0.017
	(0.24)
Homeowner (ref = renter/other non-homeowner)	0.12
	(0.24)
Public insurance/Other/Not insured (ref = private insurance)	-0.041
	(0.30)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.61
	(0.38)
Metropolitan suburb	-0.64*
	(0.23)
Years lived at current address	-0.0013
	(0.012)
Constant	0.40
	(0.54)

Robust standard errors in parentheses
** p<0.001, * p<0.009, † p<0.05

NOTE: Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.009 is considered significant. Age and years lived at current address are centered at the mean.

Table 5E.S: Ordinary least squares regression of fruit consumption on living in an ethnic enclave moderated by neighborhood socioeconomic status and covariates. Asian Community Health Initiative, control sample. N=425

VARIABLES	*Fruit consumption (times per week): b(se)*
High API enclave (ref = low API enclave)	-1.61
	(1.15)
High neighborhood SES (ref = low neighborhood SES)	-1.49
	(1.16)
High API enclave x High neighborhood SES	1.25
	(1.28)
Age (10 years, centered at 59)	0.76*
	(0.24)
Marital status (ref = Married)	
Formerly married	-0.15
	(0.69)
Single	-0.23
	(0.68)
Asian ethnicity (ref = Chinese)	
Filipina	0.065
	(0.83)
Other AANHPI	0.057
	(0.66)
Survey language (ref = English)	
Chinese	1.26
	(0.84)
Tagalog	0.82
	(1.19)
US-born (ref = Foreign-born)	-0.43
	(0.65)
Education (ref = College graduate)	
<=High school	-1.23
	(0.82)
Some college	-1.07
	(0.63)
Employment (ref = Full time)	
Part time	-0.68

	(0.66)
Not working	0.60
	(0.61)
Homeowner (ref = renter/other non-homeowner)	0.80
	(0.61)
Public insurance/Other/Not insured (ref = private insurance)	-0.61
	(0.68)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.68
	(1.13)
Metropolitan suburb	-0.22
	(0.54)
Years lived at current address	-0.030
	(0.028)
Constant	9.85**
	(1.27)
	0.074

Robust standard errors in parentheses
** p<0.001, * p<0.009, † p<0.05

NOTE: Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.009 is considered significant. Age and years lived at current address are centered at the mean.

Table 5F.S: Ordinary least squares regression of vegetable consumption on living in an ethnic enclave moderated by neighborhood socioeconomic status and covariates. Asian Community Health Initiative, control sample. N=425

VARIABLES	*Vegetable consumption (times per week): b(se)*
High API enclave (ref = low API enclave)	-0.37
	(1.14)
High neighborhood SES (ref = low neighborhood SES)	0.62
	(1.14)
High API enclave x High neighborhood SES	-0.013
	(1.24)
Age (10 years, centered at 59)	0.11
	(0.24)
Marital status (ref = Married)	
Formerly married	-0.82
	(0.61)
Single	-0.89
	(0.64)
Asian ethnicity (ref = Chinese)	
Filipina	-2.22*
	(0.84)
Other AANHPI	-0.47
	(0.60)
Survey language (ref = English)	
Chinese	0.36
	(0.77)
Tagalog	0.95
	(1.23)
US-born (ref = Foreign-born)	-0.70
	(0.62)
Education (ref = College graduate)	
<=High school	-0.15
	(0.75)
Some college	-0.71
	(0.62)
Employment (ref = Full time)	
Part time	-0.72

	(0.60)
Not working	-0.66
	(0.56)
Homeowner (ref = renter/other non-homeowner)	0.39
	(0.58)
Public insurance/Other/Not insured (ref = private insurance)	0.36
	(0.71)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-1.55
	(1.07)
Metropolitan suburb	0.80
	(0.50)
Years lived at current address	-0.0040
	(0.028)
Constant	9.19**
	(1.24)
	0.076

Robust standard errors in parentheses
** p<0.001, * p<0.009, † p<0.05
NOTE: Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.009 is considered significant. Age and years lived at current address are centered at the mean.

Table 5G.S: Ordinary least squares regression of body mass index on living in an ethnic enclave moderated by neighborhood socioeconomic status and covariates. Asian Community Health Initiative, control sample. N=410

VARIABLES	*Body mass index (kg/m²): b(se)*
High API enclave (ref = low API enclave)	-4.43†
	(2.00)
High neighborhood SES (ref = low neighborhood SES)	-4.93†
	(2.07)
High API enclave x High neighborhood SES	4.93†
	(2.25)
Age (10 years, centered at 59)	0.039
	(0.26)
Marital status (ref = Married)	
Formerly married	-0.67
	(0.59)
Single	-1.04
	(0.68)
Asian ethnicity (ref = Chinese)	
Filipina	1.17
	(0.72)
Other AANHPI	1.98*
	(0.60)
Survey language (ref = English)	
Chinese	-0.16
	(0.74)
Tagalog	0.97
	(1.06)
US-born (ref = Foreign-born)	2.33*
	(0.72)
Education (ref = College graduate)	
<=High school	1.02
	(0.95)
Some college	0.70
	(0.73)
Employment (ref = Full time)	
Part time	0.053
	(0.64)

Not working	-0.68
	(0.57)
Homeowner (ref = renter/other non-homeowner)	-0.81
	(0.63)
Public insurance/Other/Not insured (ref = private insurance)	1.47
	(0.84)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	0.93
	(1.91)
Metropolitan suburb	-0.63
	(0.49)
Years lived at current address	0.013
	(0.024)
Constant	27.3**
	(1.91)
	0.184

Robust standard errors in parentheses
** p<0.001, * p<0.009, † p<0.05
NOTE: Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.009 is considered significant. Age and years lived at current address are centered at the mean.

Table 6A.1: Logistic regression of odds of breast cancer on restaurant environment index (REI) (ratio of fast food restaurants to total number of other restaurants and food stores) and covariates.
Asian Community Health Initiative, full sample. N=546

VARIABLES	*Odds of having breast cancer*: *OR (se)*
Neighborhood has any restaurant or food store (ref = no restaurants or food store)	0.42
	(0.29)
REI (square root)	0.63
	(0.49)
Age (10 years)	7.12**
	(1.79)
Marital status (ref = Married)	
Formerly married	1.20
	(0.48)
Single	2.04
	(0.89)
Asian ethnicity (ref = Chinese)	
Filipina	3.44†
	(1.61)
Other AANHPI	2.18
	(0.87)
Survey language (ref = English)	
Chinese	1.49
	(0.61)
Tagalog	0.32
	(0.24)
US-born (ref = Foreign-born)	0.60
	(0.23)
Education (ref = College graduate)	
<=High school	3.04†
	(1.24)
Some college	0.95
	(0.40)
Employment (ref = Full time)	
Part time	0.73
	(0.31)
Not working	1.00

	(0.32)
Homeowner (ref = renter/other non-homeowner)	4.18**
	(1.66)
Public insurance/Other/Not insured (ref = private insurance)	0.46
	(0.23)
Ever pregnant (ref = never pregnant)	0.94
	(0.48)
Number of pregnancies	1.22
	(0.23)
Age at first birth	1.06
	(0.034)
Number of months breastfed	0.99
	(0.011)
Age at first menstrual period	0.87
	(0.073)
Any family history of breast cancer (ref = none)	2.36†
	(0.76)
Menopausal status (ref = premenopausal)	
Post-menopausal, no hormone therapy	0.048**
	(0.021)
Post-menopausal, used hormone therapy	0.085**
	(0.044)
High neighborhood SES (ref = low neighborhood SES)	1.85
	(0.61)
High API enclave (ref = low API enclave)	2.72†
	(1.01)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	2.57
	(1.67)
Metropolitan suburb	1.01
	(0.30)
Years lived at current address	0.95**
	(0.015)
Constant	0.51
	(0.72)

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05

REI = restaurant environment index (ratio of fast food restaurants to total number of other restaurants and food stores); calculated within 1,600-meter network distance of individuals' addresses. Transformed by taking the square-root.

NOTE: Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.006 is considered significant. REI, age, and years lived at current address are centered at the mean.

Table 6A.2: Logistic regression of odds of breast cancer on retail food environment index 3 (RFEI3) (ratio of convenience and fast food outlets to supermarkets and farmers markets) and covariates.
Asian Community Health Initiative, full sample. N=546

VARIABLES	*Odds of having breast cancer* *OR (se)*
Neighborhood has any supermarket or farmers market (ref = no supermarket or farmers market)	0.45
	(0.21)
RFEI3 (square root)	0.63
	(0.26)
Age (10 years)	7.38**
	(1.86)
Marital status (ref = Married)	
Formerly married	1.16
	(0.47)
Single	2.02
	(0.90)
Asian ethnicity (ref = Chinese)	
Filipina	3.65*
	(1.69)
Other AANHPI	2.11
	(0.84)
Survey language (ref = English)	
Chinese	1.39
	(0.56)
Tagalog	0.29
	(0.22)
US-born (ref = Foreign-born)	0.60
	(0.22)
Education (ref = College graduate)	
<=High school	3.24*
	(1.33)
Some college	0.98
	(0.40)
Employment (ref = Full time)	
Part time	0.72
	(0.31)
Not working	0.99

	(0.32)
Homeowner (ref = renter/other non-homeowner)	4.05**
	(1.61)
Public insurance/Other/Not insured (ref = private insurance)	0.44
	(0.22)
Ever pregnant (ref = never pregnant)	0.91
	(0.48)
Number of pregnancies	1.23
	(0.24)
Age at first birth	1.06
	(0.035)
Number of months breastfed	0.99
	(0.011)
Age at first menstrual period	0.88
	(0.073)
Any family history of breast cancer (ref = none)	2.41†
	(0.77)
Menopausal status (ref = premenopausal)	
Post-menopausal, no hormone therapy	0.046**
	(0.020)
Post-menopausal, used hormone therapy	0.085**
	(0.044)
High neighborhood SES (ref = low neighborhood SES)	1.88†
	(0.60)
High API enclave (ref = low API enclave)	2.90*
	(1.08)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	2.65
	(1.65)
Metropolitan suburb	1.01
	(0.31)
Years lived at current address	0.95**
	(0.015)
Constant	0.44
	(0.59)

Robust standard errors in parentheses
** p<0.001, * p<0.006, † p<0.05
RFEI3 = retail food environment index 3 (ratio of convenience and fast food outlets to supermarkets and farmers markets); calculated within 1,600-meter network distance of individuals' addresses. Transformed by taking the square-root.

NOTE: Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.006 is considered significant. RFEI3, age, and years lived at current address are centered at the mean.

Table 6A.3: Logistic regression of odds of breast cancer on number of liquor stores and covariates.
Asian Community Health Initiative, full sample. N=546

VARIABLES	*Odds of having breast cancer* *OR (se)*
Number of liquor stores (square-root)	0.84
	(0.11)
Age (10 years)	7.33**
	(1.91)
Marital status (ref = Married)	
Formerly married	1.25
	(0.50)
Single	2.08
	(0.90)
Asian ethnicity (ref = Chinese)	
Filipina	2.93†
	(1.36)
Other AANHPI	1.99
	(0.78)
Survey language (ref = English)	
Chinese	1.36
	(0.54)
Tagalog	0.33
	(0.24)
US-born (ref = Foreign-born)	0.57
	(0.22)
Education (ref = College graduate)	
<=High school	3.05*
	(1.19)
Some college	0.92
	(0.39)
Employment (ref = Full time)	
Part time	0.73
	(0.31)
Not working	1.02
	(0.32)
Homeowner (ref = renter/other non-homeowner)	3.82**
	(1.47)

Public insurance/Other/Not insured (ref = private insurance)	0.44
	(0.22)
Ever pregnant (ref = never pregnant)	1.00
	(0.51)
Number of pregnancies	1.17
	(0.22)
Age at first birth	1.05
	(0.033)
Number of months breastfed	0.99
	(0.010)
Age at first menstrual period	0.87
	(0.071)
Any family history of breast cancer (ref = none)	2.29†
	(0.74)
Menopausal status (ref = premenopausal)	
Post-menopausal, no hormone therapy	0.046**
	(0.020)
Post-menopausal, used hormone therapy	0.083**
	(0.043)
High neighborhood SES (ref = low neighborhood SES)	1.86
	(0.62)
High API enclave (ref = low API enclave)	2.53†
	(0.90)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	2.27
	(1.50)
Metropolitan suburb	0.85
	(0.29)
Years lived at current address	0.95**
	(0.015)
Constant	0.44
	(0.59)

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Number of liquor stores counted within 1,600-meter network distance of individuals' addresses. Number of liquor stores transformed by taking the square-root. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.006 is considered significant. RFEI4, age, and years lived at current address are centered at the mean.

Table 6A.4: Logistic regression of odds of breast cancer on number of recreational facilities and covariates.
Asian Community Health Initiative, full sample. N=546

VARIABLES	*Odds of having breast cancer OR (se)*
Number of recreational facilities (square-root)	0.72†
	(0.12)
Age (10 years)	7.47**
	(2.05)
Marital status (ref = Married)	
Formerly married	1.32
	(0.53)
Single	2.13
	(0.90)
Asian ethnicity (ref = Chinese)	
Filipina	2.63†
	(1.25)
Other AANHPI	1.92
	(0.75)
Survey language (ref = English)	
Chinese	1.35
	(0.54)
Tagalog	0.33
	(0.23)
US-born (ref = Foreign-born)	0.56
	(0.21)
Education (ref = College graduate)	
<=High school	3.10*
	(1.22)
Some college	0.88
	(0.38)
Employment (ref = Full time)	
Part time	0.73
	(0.31)
Not working	1.02
	(0.32)
Homeowner (ref = renter/other non-homeowner)	3.57**
	(1.37)

Public insurance/Other/Not insured (ref = private insurance)	0.41
	(0.21)
Ever pregnant (ref = never pregnant)	0.88
	(0.46)
Number of pregnancies	1.22
	(0.23)
Age at first birth	1.06
	(0.033)
Number of months breastfed	0.99
	(0.010)
Age at first menstrual period	0.87
	(0.070)
Any family history of breast cancer (ref = none)	2.28†
	(0.74)
Menopausal status (ref = premenopausal)	
Post-menopausal, no hormone therapy	0.046**
	(0.020)
Post-menopausal, used hormone therapy	0.086**
	(0.046)
High neighborhood SES (ref = low neighborhood SES)	1.96†
	(0.64)
High API enclave (ref = low API enclave)	2.61†
	(0.94)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	2.01
	(1.33)
Metropolitan suburb	0.79
	(0.26)
Years lived at current address	0.95**
	(0.015)
Constant	0.62
	(0.80)

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Number of recreational facilities counted within 1,600-meter network distance of individuals' addresses. Number of recreational facilities transformed by taking the square-root. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.006 is considered significant. Age and years lived at current address are centered at the mean.

Table 6A.5: Logistic regression of odds of breast cancer on number of parks and covariates.
Asian Community Health Initiative, full sample. N=546

VARIABLES	*Odds of having breast cancer OR (se)*
Number of parks (square-root)	0.84
	(0.17)
Age (10 years)	7.34**
	(1.93)
Marital status (ref = Married)	
Formerly married	1.24
	(0.50)
Single	2.06
	(0.90)
Asian ethnicity (ref = Chinese)	
Filipina	3.10†
	(1.42)
Other AANHPI	2.04
	(0.81)
Survey language (ref = English)	
Chinese	1.36
	(0.54)
Tagalog	0.31
	(0.23)
US-born (ref = Foreign-born)	0.56
	(0.22)
Education (ref = College graduate)	
<=High school	3.00*
	(1.19)
Some college	0.91
	(0.38)
Employment (ref = Full time)	
Part time	0.75
	(0.31)
Not working	1.04
	(0.33)
Homeowner (ref = renter/other non-homeowner)	4.04**
	(1.55)

Public insurance/Other/Not insured (ref = private insurance)	0.45
	(0.23)
Ever pregnant (ref = never pregnant)	0.98
	(0.50)
Number of pregnancies	1.20
	(0.22)
Age at first birth	1.06
	(0.033)
Number of months breastfed	0.99
	(0.010)
Age at first menstrual period	0.87
	(0.072)
Any family history of breast cancer (ref = none)	2.29†
	(0.74)
Menopausal status (ref = premenopausal)	
Post-menopausal, no hormone therapy	0.045**
	(0.020)
Post-menopausal, used hormone therapy	0.086**
	(0.044)
High neighborhood SES (ref = low neighborhood SES)	1.89
	(0.62)
High API enclave (ref = low API enclave)	2.62†
	(0.94)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	2.57
	(1.72)
Metropolitan suburb	0.97
	(0.31)
Years lived at current address	0.95**
	(0.015)
Constant	0.35
	(0.46)

Robust standard errors in parentheses

** $p<0.001$, * $p<0.006$, † $p<0.05$

NOTE: Number of parks counted within 1,600-meter network distance of individuals' addresses. Number of parks transformed by taking the square-root. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.006 is considered significant. Age and years lived at current address are centered at the mean.

Table 6A.6: Logistic regression of odds of breast cancer on block group alpha measure and covariates.
Asian Community Health Initiative, full sample. N=546

VARIABLES	*Odds of having breast cancer OR (se)*
Alpha measure	0.075
	(0.11)
Age (10 years)	7.29**
	(1.86)
Marital status (ref = Married)	
Formerly married	1.21
	(0.48)
Single	2.03
	(0.90)
Asian ethnicity (ref = Chinese)	
Filipina	3.01†
	(1.39)
Other AANHPI	1.91
	(0.76)
Survey language (ref = English)	
Chinese	1.37
	(0.55)
Tagalog	0.31
	(0.23)
US-born (ref = Foreign-born)	0.58
	(0.22)
Education (ref = College graduate)	
<=High school	3.04*
	(1.21)
Some college	0.94
	(0.39)
Employment (ref = Full time)	
Part time	0.75
	(0.32)
Not working	0.98
	(0.31)
Homeowner (ref = renter/other non-homeowner)	4.20**
	(1.66)

Public insurance/Other/Not insured (ref = private insurance)	0.47
	(0.24)
Ever pregnant (ref = never pregnant)	0.90
	(0.47)
Number of pregnancies	1.22
	(0.23)
Age at first birth	1.05
	(0.033)
Number of months breastfed	0.99
	(0.011)
Age at first menstrual period	0.87
	(0.072)
Any family history of breast cancer (ref = none)	2.27†
	(0.74)
Menopausal status (ref = premenopausal)	
Post-menopausal, no hormone therapy	0.045**
	(0.019)
Post-menopausal, used hormone therapy	0.087**
	(0.046)
High neighborhood SES (ref = low neighborhood SES)	1.92†
	(0.62)
High API enclave (ref = low API enclave)	2.57†
	(0.93)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	2.16
	(1.47)
Metropolitan suburb	0.86
	(0.29)
Years lived at current address	0.94**
	(0.015)
Constant	0.51
	(0.66)

Robust standard errors in parentheses

** $p<0.001$, * $p<0.006$, † $p<0.05$

NOTE: Alpha measure = a measure of walkability; ratio of actual number of complete loops to the maximum number of possible loops given the number of intersections. Here calculated at the level of the block group. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.006 is considered significant. Age and years lived at current address are centered at the mean.

Table 6A.7: Logistic regression of odds of breast cancer on block group gamma measure and covariates.
Asian Community Health Initiative, full sample. N=546

VARIABLES	*Odds of having breast cancer OR (se)*
Gamma measure	0.017
	(0.040)
Age (10 years)	7.35**
	(1.88)
Marital status (ref = Married)	
Formerly married	1.21
	(0.48)
Single	2.04
	(0.90)
Asian ethnicity (ref = Chinese)	
Filipina	2.99†
	(1.38)
Other AANHPI	1.89
	(0.75)
Survey language (ref = English)	
Chinese	1.37
	(0.55)
Tagalog	0.31
	(0.23)
US-born (ref = Foreign-born)	0.58
	(0.22)
Education (ref = College graduate)	
<=High school	3.05*
	(1.21)
Some college	0.94
	(0.40)
Employment (ref = Full time)	
Part time	0.76
	(0.32)
Not working	0.98
	(0.31)
Homeowner (ref = renter/other non-homeowner)	4.20**
	(1.66)

Public insurance/Other/Not insured (ref = private insurance)	0.46
	(0.23)
Ever pregnant (ref = never pregnant)	0.89
	(0.47)
Number of pregnancies	1.22
	(0.23)
Age at first birth	1.05
	(0.033)
Number of months breastfed	0.99
	(0.011)
Age at first menstrual period	0.87
	(0.072)
Any family history of breast cancer (ref = none)	2.27†
	(0.74)
Menopausal status (ref = premenopausal)	
Post-menopausal, no hormone therapy	0.045**
	(0.019)
Post-menopausal, used hormone therapy	0.086**
	(0.045)
High neighborhood SES (ref = low neighborhood SES)	1.91†
	(0.61)
High API enclave (ref = low API enclave)	2.58†
	(0.93)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	2.05
	(1.41)
Metropolitan suburb	0.82
	(0.29)
Years lived at current address	0.94**
	(0.015)
Constant	2.14
	(3.70)

Robust standard errors in parentheses

** $p<0.001$, * $p<0.006$, † $p<0.05$

NOTE: Gamma measure = a measure of walkability; ratio of actual number of street segments to maximum possible given number of intersections. Here calculated at the level of the block group. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.006 is considered significant. Age and years lived at current address are centered at the mean.

Table 6A.8: Logistic regression of odds of breast cancer on traffic density and covariates. Asian Community Health Initiative, full sample. N=546

VARIABLES	*Odds of having breast cancer OR (se)*
Traffic density (square-root)	0.45†
	(0.17)
Age (10 years)	7.69**
	(2.10)
Marital status (ref = Married)	
Formerly married	1.23
	(0.50)
Single	2.00
	(0.85)
Asian ethnicity (ref = Chinese)	
Filipina	3.07†
	(1.42)
Other AANHPI	2.05
	(0.81)
Survey language (ref = English)	
Chinese	1.41
	(0.57)
Tagalog	0.30
	(0.22)
US-born (ref = Foreign-born)	0.56
	(0.21)
Education (ref = College graduate)	
<=High school	3.10*
	(1.27)
Some college	0.92
	(0.39)
Employment (ref = Full time)	
Part time	0.72
	(0.30)
Not working	1.01
	(0.31)
Homeowner (ref = renter/other non-homeowner)	3.87**
	(1.54)
Public insurance/Other/Not insured (ref = private	0.43

insurance)	
	(0.22)
Ever pregnant (ref = never pregnant)	0.90
	(0.45)
Number of pregnancies	1.19
	(0.23)
Age at first birth	1.06
	(0.033)
Number of months breastfed	0.99
	(0.011)
Age at first menstrual period	0.87
	(0.073)
Any family history of breast cancer (ref = none)	2.33†
	(0.76)
Menopausal status (ref = premenopausal)	
Post-menopausal, no hormone therapy	0.043**
	(0.019)
Post-menopausal, used hormone therapy	0.075**
	(0.041)
High neighborhood SES (ref = low neighborhood SES)	1.81
	(0.59)
High API enclave (ref = low API enclave)	2.80*
	(0.98)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	2.37
	(1.50)
Metropolitan suburb	0.92
	(0.28)
Years lived at current address	0.95**
	(0.015)
Constant	0.57
	(0.76)

Robust standard errors in parentheses

** p<0.001, * p<0.006, † p<0.05

NOTE: Traffic density calculated as vehicle kilometers travelled within 1,600-meter network distance of individuals' addresses. Traffic density transformed by taking the square-root. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.006 is considered significant. Age and years lived at current address are centered at the mean.

Table 6B.1: The decomposed effect of living in a high ethnic enclave on breast cancer risk, mediated by the restaurant environment index (REI) (ratio of fast food restaurants to total number of fast food and other restaurants).
Asian Community Health Initiative, full sample. N=546

	Log odds of having breast cancer (beta)	*Robust SE*	*P-value*
Decomposed effects of living in a high ethnic enclave, mediated by REI			
Total effect	0.97	0.37	0.01
Direct effect	1.00	0.37	0.01
Indirect effect	-0.03	0.05	0.54

REI = restaurant environment index (ratio of fast food restaurants to total number of fast food and other restaurants); calculated within 1,600-meter network distance of individuals' addresses. Transformed by taking the square-root. Included here as a variable conditional on having any restaurants in the neighborhood.
SE = standard error
NOTE: Decomposed effects calculated using the Kohler, Holm, and Breen (KHB) method in STATA. Model controls for age, marital status, Asian ethnicity, survey language, nativity, education, employment, homeownership, health insurance status, ever pregnant, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, family history of breast cancer, menopausal status, neighborhood socioeconomic status, urbanicity, and years lived in current residence. Standard errors adjusted for clustering at the Census block group level.

Table 6B.2: The decomposed effect of living in a high ethnic enclave on breast cancer risk, mediated by the retail food environment index 3 (RFEI3) (ratio of convenience and fast food outlets to supermarkets and farmers markets).
Asian Community Health Initiative, full sample. N=546

	Log odds of having breast cancer (beta)	*Robust SE*	*P-value*
Decomposed effects of living in a high ethnic enclave, mediated by RFEI3			
Total effect	0.99	0.36	0.01
Direct effect	1.06	0.37	0.00
Indirect effect	-0.08	0.07	0.25

RFEI3 = retail food environment index 3 (ratio of convenience and fast food outlets to supermarkets and farmers markets); calculated within 1,600-meter network distance of individuals' addresses. Transformed by taking the square-root. Included here as a variable conditional on having any restaurants in the neighborhood.
SE = standard error
NOTE: Decomposed effects calculated using the Kohler, Holm, and Breen (KHB) method in STATA. Model controls for age, marital status, Asian ethnicity, survey language, nativity, education, employment, homeownership, health insurance status, ever pregnant, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, family history of breast cancer, menopausal status, neighborhood socioeconomic status, urbanicity, and years lived in current residence. Standard errors adjusted for clustering at the Census block group level.

Table 6B.3: The decomposed effect of living in a high ethnic enclave on breast cancer risk, mediated by the number of liquor stores.
Asian Community Health Initiative, full sample. N=546

	Log odds of having breast cancer (beta)	*Robust SE*	*P-value*
Decomposed effects of living in a high ethnic enclave, mediated by number of liquor stores (sqrt)			
Total effect	0.94	0.36	0.01
Direct effect	0.93	0.36	0.01
Indirect effect	0.01	0.03	0.58

Number of liquor stores counted within 1,600-meter network distance of individuals' addresses. Transformed by taking the square-root.
SE = standard error
NOTE: Decomposed effects calculated using the Kohler, Holm, and Breen (KHB) method in STATA. Model controls for age, marital status, Asian ethnicity, survey language, nativity, education, employment, homeownership, health insurance status, ever pregnant, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, family history of breast cancer, menopausal status, neighborhood socioeconomic status, urbanicity, and years lived in current residence. Standard errors adjusted for clustering at the Census block group level.

Table 6B.4: The decomposed effect of living in a high ethnic enclave on breast cancer risk, mediated by number of recreational facilities.
Asian Community Health Initiative, full sample. N=546

	Log odds of having breast cancer (beta)	*Robust SE*	*P-value*
Decomposed effects of living in a high ethnic enclave, mediated by number of recreational facilities (sqrt)			
Total effect	0.96	0.36	0.01
Direct effect	0.96	0.36	0.01
Indirect effect	0.00	0.03	0.97

Number of recreational facilities counted within 1,600-meter network distance of individuals' addresses. Transformed by taking the square-root.
SE = standard error
NOTE: Decomposed effects calculated using the Kohler, Holm, and Breen (KHB) method in STATA. Model controls for age, marital status, Asian ethnicity, survey language, nativity, education, employment, homeownership, health insurance status, ever pregnant, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, family history of breast cancer, menopausal status, neighborhood socioeconomic status, urbanicity, and years lived in current residence. Standard errors adjusted for clustering at the Census block group level.

Table 6B.5: The decomposed effect of living in a high ethnic enclave on breast cancer risk, mediated by number of parks.
Asian Community Health Initiative, full sample. N=546

	Log odds of having breast cancer (beta)	*Robust SE*	*P-value*
Decomposed effects of living in a high ethnic enclave, mediated by number of parks (sqrt)			
Total effect	0.96	0.36	0.01
Direct effect	0.96	0.36	0.01
Indirect effect	0.00	0.01	0.73

Number of recreational parks counted within 1,600-meter network distance of individuals' addresses. Transformed by taking the square-root.
SE = standard error
NOTE: Decomposed effects calculated using the Kohler, Holm, and Breen (KHB) method in STATA. Model controls for age, marital status, Asian ethnicity, survey language, nativity, education, employment, homeownership, health insurance status, ever pregnant, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, family history of breast cancer, menopausal status, neighborhood socioeconomic status, urbanicity, and years lived in current residence. Standard errors adjusted for clustering at the Census block group level.

Table 6B.6: The decomposed effect of living in a high ethnic enclave on breast cancer risk, mediated by block group alpha measure.
Asian Community Health Initiative, full sample. N=546

	Log odds of having breast cancer (beta)	*Robust SE*	*P-value*
Decomposed effects of living in a high ethnic enclave, mediated by alpha measure			
Total effect	0.95	0.36	0.01
Direct effect	0.95	0.36	0.01
Indirect effect	0.00	0.03	0.94

Alpha measure = a measure of walkability; ratio of actual number of complete loops to the maximum number of possible loops given the number of intersections. Here calculated at the level of the block group.
SE = standard error
NOTE: Decomposed effects calculated using the Kohler, Holm, and Breen (KHB) method in STATA. Model controls for age, marital status, Asian ethnicity, survey language, nativity, education, employment, homeownership, health insurance status, ever pregnant, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, family history of breast cancer, menopausal status, neighborhood socioeconomic status, urbanicity, and years lived in current residence. Standard errors adjusted for clustering at the Census block group level.

Table 6B.7: The decomposed effect of living in a high ethnic enclave on breast cancer risk, mediated by block group gamma measure.
Asian Community Health Initiative, full sample. N=546

	Log odds of having breast cancer (beta)	*Robust SE*	*P-value*
Decomposed effects of living in a high ethnic enclave, mediated by gamma measure			
Total effect	0.95	0.36	0.01
Direct effect	0.95	0.36	0.01
Indirect effect	0.00	0.03	0.96

Gamma measure = a measure of walkability; ratio of actual number of street segments to maximum possible given number of intersections. Here calculated at the level of the block group.
SE = standard error
NOTE: Decomposed effects calculated using the Kohler, Holm, and Breen (KHB) method in STATA. Model controls for age, marital status, Asian ethnicity, survey language, nativity, education, employment, homeownership, health insurance status, ever pregnant, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, family history of breast cancer, menopausal status, neighborhood socioeconomic status, urbanicity, and years lived in current residence. Standard errors adjusted for clustering at the Census block group level.

Table 6B.8: The decomposed effect of living in a high ethnic enclave on breast cancer risk, mediated by traffic density.
Asian Community Health Initiative, full sample. N=546

	Log odds of having breast cancer (beta)	*Robust SE*	*P-value*
Decomposed effects of living in a high ethnic enclave, mediated by traffic density			
Total effect	0.96	0.35	0.01
Direct effect	1.03	0.35	0.00
Indirect effect	-0.07	0.05	0.18

Traffic density calculated as vehicle kilometers travelled within 1,600-meter network distance of individuals' addresses. Transformed by taking the square-root.
SE = standard error
NOTE: Decomposed effects calculated using the Kohler, Holm, and Breen (KHB) method in STATA. Model controls for age, marital status, Asian ethnicity, survey language, nativity, education, employment, homeownership, health insurance status, ever pregnant, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, family history of breast cancer, menopausal status, neighborhood socioeconomic status, urbanicity, and years lived in current residence. Standard errors adjusted for clustering at the Census block group level.

Table 6C.1: Ordinary least squares regression of moderate physical activity on number of recreational facilities and covariates. Asian Community Health Initiative, N=418

	Moderate physical activity (hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Number of recreational facilities (square-root)	0.066	-0.044	-0.040
	(0.13)	(0.14)	(0.15)
Age (10 years)		-0.22	-0.26
		(0.17)	(0.18)
Marital status (ref = Married)			
Formerly married		0.052	0.072
		(0.57)	(0.58)
Single		-0.23	-0.26
		(0.46)	(0.46)
Asian ethnicity (ref = Chinese)			
Filipina		-0.30	-0.32
		(0.61)	(0.62)
Other AANHPI		-0.097	-0.13
		(0.46)	(0.46)
Survey language (ref = English)			
Chinese		-0.39	-0.36
		(0.60)	(0.60)
Tagalog		-0.88	-0.79
		(0.95)	(0.96)
US-born (ref = Foreign-born)		1.30*	1.27*
		(0.44)	(0.45)
Education (ref = College graduate)			
<=High school		2.26**	2.24**
		(0.65)	(0.67)
Some college		1.07†	1.04†
		(0.50)	(0.50)
Employment (ref = Full time)			
Part time		0.30	0.27
		(0.44)	(0.44)
Not working		0.38	0.38
		(0.46)	(0.47)
Homeowner (ref = renter/other non-homeowner)		-0.15	-0.18
		(0.47)	(0.52)

Public insurance/Other/Not insured (ref = private insurance)		-0.31	-0.33
		(0.57)	(0.58)
High neighborhood SES (ref = low neighborhood SES)			-0.23
			(0.42)
High API enclave (ref = low API enclave)			-0.38
			(0.41)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			-0.097
			(0.88)
Metropolitan suburb			0.069
			(0.43)
Years lived at current address			0.0075
			(0.022)
Constant	5.05**	4.48**	4.91**
	(0.31)	(0.73)	(0.96)
R-squared	0.001	0.072	0.075
Model Comparisons:			
Wald F		2.45	0.27
Wald Prob>F		0.0026	0.93
Wald df		14, 363	5, 363

Robust standard errors in parentheses
** p<0.001, * p<0.01, † p<0.05
NOTE: Number of recreational facilities counted within 1,600-meter network distance of individuals' addresses. Number of recreational facilities transformed by taking the square-root. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.01 is considered significant. Age and years lived at current address are centered at the mean.

Table 6C.2: Ordinary least squares regression of moderate physical activity on number of parks and covariates.
Asian Community Health Initiative, N=418

	Moderate physical activity (hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Number of parks (square-root)	0.26	0.095	0.14
	(0.21)	(0.22)	(0.26)
Age (10 years)		-0.22	-0.26
		(0.17)	(0.18)
Marital status (ref = Married)			
Formerly married		0.022	0.046
		(0.57)	(0.58)
Single		-0.24	-0.27
		(0.46)	(0.46)
Asian ethnicity (ref = Chinese)			
Filipina		-0.27	-0.28
		(0.60)	(0.61)
Other AANHPI		-0.088	-0.13
		(0.46)	(0.46)
Survey language (ref = English)			
Chinese		-0.42	-0.37
		(0.59)	(0.60)
Tagalog		-0.86	-0.77
		(0.95)	(0.97)
US-born (ref = Foreign-born)		1.28*	1.26*
		(0.43)	(0.45)
Education (ref = College graduate)			
<=High school		2.22**	2.22**
		(0.65)	(0.66)
Some college		1.06†	1.02†
		(0.50)	(0.50)
Employment (ref = Full time)			
Part time		0.35	0.31
		(0.43)	(0.44)
Not working		0.40	0.40
		(0.45)	(0.47)
Homeowner (ref = renter/other non-homeowner)		-0.091	-0.14
		(0.47)	(0.52)

Public insurance/Other/Not insured (ref = private insurance)		-0.33	-0.34
		(0.57)	(0.58)
High neighborhood SES (ref = low neighborhood SES)			-0.20
			(0.41)
High API enclave (ref = low API enclave)			-0.39
			(0.41)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			0.12
			(0.92)
Metropolitan suburb			0.18
			(0.42)
Years lived at current address			0.0077
			(0.022)
Constant	4.77**	4.21**	4.50**
	(0.36)	(0.74)	(0.97)
R-squared	0.003	0.072	0.076
<u>Model Comparisons:</u>			
Wald F		2.39	0.30
Wald Prob>F		0.0033	0.91
Wald df		14, 363	5, 363

Robust standard errors in parentheses
** p<0.001, * p<0.01, † p<0.05
NOTE: Number of parks counted within 1,600-meter network distance of individuals' addresses. Number of parks transformed by taking the square-root. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.01 is considered significant. Age and years lived at current address are centered at the mean.

Table 6C.3: Ordinary least squares regression of moderate physical activity on block group alpha measure and covariates.
Asian Community Health Initiative, N=418

	Moderate physical activity (hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Alpha measure	0.82	0.087	0.35
	(1.72)	(1.69)	(1.95)
Age (10 years)		-0.22	-0.26
		(0.17)	(0.18)
Marital status (ref = Married)			
Formerly married		0.036	0.058
		(0.57)	(0.57)
Single		-0.24	-0.26
		(0.46)	(0.46)
Asian ethnicity (ref = Chinese)			
Filipina		-0.27	-0.28
		(0.60)	(0.61)
Other AANHPI		-0.083	-0.11
		(0.46)	(0.46)
Survey language (ref = English)			
Chinese		-0.40	-0.36
		(0.60)	(0.60)
Tagalog		-0.87	-0.78
		(0.95)	(0.96)
US-born (ref = Foreign-born)		1.29*	1.26*
		(0.43)	(0.45)
Education (ref = College graduate)			
<=High school		2.24**	2.23**
		(0.65)	(0.66)
Some college		1.07†	1.04†
		(0.50)	(0.50)
Employment (ref = Full time)			
Part time		0.33	0.29
		(0.44)	(0.44)
Not working		0.39	0.40
		(0.46)	(0.47)
Homeowner (ref = renter/other non-homeowner)		-0.12	-0.17
		(0.47)	(0.52)

Public insurance/Other/Not insured (ref = private insurance)		-0.31	-0.33
		(0.57)	(0.58)
High neighborhood SES (ref = low neighborhood SES)			-0.23
			(0.42)
High API enclave (ref = low API enclave)			-0.38
			(0.41)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			0.0033
			(0.90)
Metropolitan suburb			0.13
			(0.43)
Years lived at current address			0.0076
			(0.022)
Constant	5.02**	4.35**	4.70**
	(0.37)	(0.75)	(0.97)
R-squared	0.001	0.072	0.075
Model Comparisons:			
Wald F		2.46	0.28
Wald Prob>F		0.0024	0.92
Wald df		14, 363	5, 363

Robust standard errors in parentheses
** p<0.001, * p<0.01, † p<0.05
Alpha measure = a measure of walkability; ratio of actual number of complete loops to the maximum number of possible loops given the number of intersections. Here calculated at the level of the block group.
NOTE: Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.01 is considered significant. Age and years lived at current address are centered at the mean.

Table 6C.4: Ordinary least squares regression of moderate physical activity on block group gamma measure and covariates.
Asian Community Health Initiative, N=418

	Moderate physical activity (hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Gamma measure	1.18	-0.071	0.34
	(2.51)	(2.47)	(2.91)
Age (10 years)		-0.22	-0.26
		(0.17)	(0.18)
Marital status (ref = Married)			
Formerly married		0.039	0.060
		(0.57)	(0.57)
Single		-0.24	-0.26
		(0.46)	(0.46)
Asian ethnicity (ref = Chinese)			
Filipina		-0.28	-0.29
		(0.60)	(0.61)
Other AANHPI		-0.087	-0.12
		(0.46)	(0.46)
Survey language (ref = English)			
Chinese		-0.40	-0.37
		(0.60)	(0.60)
Tagalog		-0.87	-0.78
		(0.95)	(0.96)
US-born (ref = Foreign-born)		1.29*	1.26*
		(0.43)	(0.45)
Education (ref = College graduate)			
<=High school		2.24**	2.23**
		(0.65)	(0.66)
Some college		1.07†	1.04†
		(0.50)	(0.50)
Employment (ref = Full time)			
Part time		0.32	0.29
		(0.44)	(0.44)
Not working		0.39	0.40
		(0.46)	(0.47)
Homeowner (ref = renter/other non-homeowner)		-0.12	-0.17
		(0.47)	(0.52)

Public insurance/Other/Not insured (ref = private insurance)		-0.31	-0.33
		(0.57)	(0.58)
High neighborhood SES (ref = low neighborhood SES)			-0.23
			(0.42)
High API enclave (ref = low API enclave)			-0.38
			(0.41)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			-0.011
			(0.91)
Metropolitan suburb			0.13
			(0.43)
Years lived at current address			0.0075
			(0.022)
Constant	4.62**	4.40*	4.61*
	(1.19)	(1.39)	(1.73)
R-squared	0.001	0.072	0.075
<u>Model Comparisons:</u>			
Wald F		2.47	0.28
Wald Prob>F		0.0024	0.93
Wald df		14, 363	5, 363

Robust standard errors in parentheses
** p<0.001, * p<0.01, † p<0.05
Gamma measure = a measure of walkability; ratio of actual number of street segments to maximum possible given number of intersections. Here calculated at the level of the block group.
NOTE: Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.01 is considered significant. Age and years lived at current address are centered at the mean.

Table 6C.5: Ordinary least squares regression of moderate physical activity on traffic density and covariates.
Asian Community Health Initiative, N=418

	Moderate physical activity (hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Traffic density (square-root)	-0.16	-0.49	-0.47
	(0.38)	(0.43)	(0.45)
Age (10 years)		-0.24	-0.27
		(0.18)	(0.18)
Marital status (ref = Married)			
Formerly married		0.086	0.10
		(0.57)	(0.58)
Single		-0.21	-0.23
		(0.46)	(0.46)
Asian ethnicity (ref = Chinese)			
Filipina		-0.30	-0.32
		(0.60)	(0.62)
Other AANHPI		-0.096	-0.13
		(0.46)	(0.46)
Survey language (ref = English)			
Chinese		-0.32	-0.30
		(0.60)	(0.60)
Tagalog		-0.92	-0.83
		(0.95)	(0.96)
US-born (ref = Foreign-born)		1.32*	1.29*
		(0.43)	(0.45)
Education (ref = College graduate)			
<=High school		2.26**	2.23**
		(0.65)	(0.67)
Some college		1.12†	1.09†
		(0.50)	(0.50)
Employment (ref = Full time)			
Part time		0.26	0.24
		(0.44)	(0.45)
Not working		0.34	0.36
		(0.46)	(0.47)
Homeowner (ref = renter/other non-homeowner)		-0.22	-0.24
		(0.47)	(0.52)

Public insurance/Other/Not insured (ref = private insurance)		-0.28	-0.32
		(0.57)	(0.58)
High neighborhood SES (ref = low neighborhood SES)			-0.26
			(0.42)
High API enclave (ref = low API enclave)			-0.35
			(0.41)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			-0.10
			(0.85)
Metropolitan suburb			0.040
			(0.40)
Years lived at current address			0.0063
			(0.022)
Constant	5.31**	4.80**	5.23**
	(0.37)	(0.73)	(0.91)
R-squared	0.000	0.075	0.078
<u>Model Comparisons:</u>			
Wald F		2.53	0.24
Wald Prob>F		0.0018	0.94
Wald df		14, 363	5, 363

Robust standard errors in parentheses
** p<0.001, * p<0.01, † p<0.05
NOTE: Traffic density calculated as vehicle kilometers travelled within 1,600-meter network distance of individuals' addresses. Traffic density transformed by taking the square-root. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.01 is considered significant. Age and years lived at current address are centered at the mean.

Table 6D.1: Ordinary least squares regression of strenuous physical activity on number of recreational facilities and covariates.
Asian Community Health Initiative, N=411

	Strenuous physical activity (square root of hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Number of recreational facilities (square-root)	0.050	0.044	0.031
	(0.036)	(0.039)	(0.043)
Age (10 years)		-0.017	-0.043
		(0.050)	(0.054)
Marital status (ref = Married)			
Formerly married		-0.014	-0.016
		(0.16)	(0.17)
Single		-0.0081	-0.034
		(0.13)	(0.13)
Asian ethnicity (ref = Chinese)			
Filipina		0.077	0.079
		(0.17)	(0.17)
Other AANHPI		-0.0052	-0.036
		(0.13)	(0.13)
Survey language (ref = English)			
Chinese		-0.091	-0.069
		(0.17)	(0.17)
Tagalog		-0.10	-0.036
		(0.29)	(0.29)
US-born (ref = Foreign-born)		0.44**	0.40*
		(0.12)	(0.12)
Education (ref = College graduate)			
<=High school		0.54*	0.57*
		(0.18)	(0.18)
Some college		0.063	0.061
		(0.13)	(0.14)
Employment (ref = Full time)			
Part time		-0.011	-0.032
		(0.13)	(0.13)
Not working		-0.0096	-0.010
		(0.13)	(0.13)
Homeowner (ref = renter/other non-homeowner)		0.026	0.011
		(0.12)	(0.13)

Public insurance/Other/Not insured (ref = private insurance)		-0.20	-0.21
		(0.16)	(0.17)
High neighborhood SES (ref = low neighborhood SES)			-0.070
			(0.12)
High API enclave (ref = low API enclave)			-0.29*
			(0.11)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			-0.19
			(0.25)
Metropolitan suburb			-0.072
			(0.12)
Years lived at current address			0.0045
			(0.0064)
Constant	1.55**	1.38**	1.74**
	(0.082)	(0.20)	(0.27)
R-squared	0.004	0.069	0.085
Model Comparisons:			
Wald F		2.31	1.54
Wald Prob>F		0.0047	0.18
Wald df		14, 358	5, 358

Robust standard errors in parentheses
** p<0.001, * p<0.01, † p<0.05
NOTE: Number of recreational facilities counted within 1,600-meter network distance of individuals' addresses. Number of recreational facilities transformed by taking the square-root. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.01 is considered significant. Age and years lived at current address are centered at the mean.

Table 6D.2: Ordinary least squares regression of strenuous physical activity on number of parks and covariates.
Asian Community Health Initiative, N=411

	Strenuous physical activity (square root of hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Number of parks (square-root)	0.042	0.033	0.018
	(0.059)	(0.064)	(0.074)
Age (10 years)		-0.020	-0.045
		(0.050)	(0.054)
Marital status (ref = Married)			
Formerly married		-0.0048	-0.010
		(0.16)	(0.17)
Single		0.00035	-0.028
		(0.13)	(0.13)
Asian ethnicity (ref = Chinese)			
Filipina		0.056	0.066
		(0.17)	(0.17)
Other AANHPI		-0.017	-0.045
		(0.13)	(0.13)
Survey language (ref = English)			
Chinese		-0.089	-0.067
		(0.17)	(0.17)
Tagalog		-0.11	-0.035
		(0.29)	(0.29)
US-born (ref = Foreign-born)		0.44**	0.40*
		(0.12)	(0.12)
Education (ref = College graduate)			
<=High school		0.55*	0.57*
		(0.18)	(0.18)
Some college		0.061	0.060
		(0.13)	(0.13)
Employment (ref = Full time)			
Part time		-0.025	-0.042
		(0.13)	(0.13)
Not working		-0.015	-0.014
		(0.13)	(0.13)
Homeowner (ref = renter/other non-homeowner)		0.011	0.0017
		(0.12)	(0.13)

Public insurance/Other/Not insured (ref = private insurance)		-0.20	-0.21
		(0.16)	(0.17)
High neighborhood SES (ref = low neighborhood SES)			-0.071
			(0.12)
High API enclave (ref = low API enclave)			-0.29*
			(0.11)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			-0.21
			(0.26)
Metropolitan suburb			-0.095
			(0.12)
Years lived at current address			0.0047
			(0.0063)
Constant	1.58**	1.43**	1.80**
	(0.097)	(0.20)	(0.28)
R-squared	0.001	0.067	0.084
<u>Model Comparisons:</u>			
Wald F		2.34	1.59
Wald Prob>F		0.0042	0.16
Wald df		14, 358	5, 358

Robust standard errors in parentheses
** p<0.001, * p<0.01, † p<0.05
NOTE: Number of parks counted within 1,600-meter network distance of individuals' addresses. Number of parks transformed by taking the square-root. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.01 is considered significant. Age and years lived at current address are centered at the mean.

Table 6D.3: Ordinary least squares regression of strenuous physical activity on block group alpha measure and covariates.
Asian Community Health Initiative, N=411

	Strenuous physical activity (square root of hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Alpha measure	-0.069	-0.17	-0.32
	(0.49)	(0.51)	(0.56)
Age (10 years)		-0.021	-0.045
		(0.050)	(0.055)
Marital status (ref = Married)			
Formerly married		0.0044	-0.0032
		(0.16)	(0.16)
Single		-0.00066	-0.029
		(0.13)	(0.13)
Asian ethnicity (ref = Chinese)			
Filipina		0.047	0.055
		(0.17)	(0.17)
Other AANHPI		-0.022	-0.053
		(0.13)	(0.13)
Survey language (ref = English)			
Chinese		-0.081	-0.067
		(0.17)	(0.17)
Tagalog		-0.11	-0.038
		(0.29)	(0.29)
US-born (ref = Foreign-born)		0.44**	0.40*
		(0.12)	(0.12)
Education (ref = College graduate)			
<=High school		0.56*	0.58*
		(0.17)	(0.18)
Some college		0.068	0.067
		(0.13)	(0.13)
Employment (ref = Full time)			
Part time		-0.044	-0.056
		(0.13)	(0.13)
Not working		-0.027	-0.027
		(0.13)	(0.13)
Homeowner (ref = renter/other non-homeowner)		-0.0038	-0.00088
		(0.12)	(0.12)

Public insurance/Other/Not insured (ref = private insurance)		-0.19	-0.21
		(0.16)	(0.17)
High neighborhood SES (ref = low neighborhood SES)			-0.075
			(0.12)
High API enclave (ref = low API enclave)			-0.29*
			(0.11)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			-0.27
			(0.25)
Metropolitan suburb			-0.13
			(0.12)
Years lived at current address			0.0044
			(0.0064)
Constant	1.66**	1.52**	1.92**
	(0.10)	(0.21)	(0.27)
R-squared	0.000	0.067	0.085
<u>Model Comparisons:</u>			
Wald F		2.39	1.64
Wald Prob>F		0.0034	0.15
Wald df		14, 358	5, 358

Robust standard errors in parentheses
** p<0.001, * p<0.01, † p<0.05
Alpha measure = a measure of walkability; ratio of actual number of complete loops to the maximum number of possible loops given the number of intersections. Here calculated at the level of the block group.
NOTE: Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.01 is considered significant. Age and years lived at current address are centered at the mean.

Table 6D.4: Ordinary least squares regression of strenuous physical activity on block group gamma measure and covariates.
Asian Community Health Initiative, N=411

	Strenuous physical activity (square root of hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Gamma measure	-0.080	-0.25	-0.53
	(0.71)	(0.73)	(0.83)
Age (10 years)		-0.021	-0.045
		(0.050)	(0.055)
Marital status (ref = Married)			
Formerly married		0.0044	-0.0032
		(0.16)	(0.16)
Single		-0.00046	-0.029
		(0.13)	(0.13)
Asian ethnicity (ref = Chinese)			
Filipina		0.047	0.054
		(0.17)	(0.17)
Other AANHPI		-0.022	-0.054
		(0.13)	(0.13)
Survey language (ref = English)			
Chinese		-0.081	-0.067
		(0.17)	(0.17)
Tagalog		-0.11	-0.038
		(0.29)	(0.29)
US-born (ref = Foreign-born)		0.44**	0.40*
		(0.12)	(0.12)
Education (ref = College graduate)			
<=High school		0.56*	0.58*
		(0.17)	(0.18)
Some college		0.069	0.068
		(0.13)	(0.13)
Employment (ref = Full time)			
Part time		-0.045	-0.057
		(0.13)	(0.13)
Not working		-0.027	-0.028
		(0.13)	(0.13)
Homeowner (ref = renter/other non-homeowner)		-0.0045	-0.0015
		(0.12)	(0.12)

Public insurance/Other/Not insured (ref = private insurance)		-0.19	-0.21
		(0.16)	(0.17)
High neighborhood SES (ref = low neighborhood SES)			-0.075
			(0.12)
High API enclave (ref = low API enclave)			-0.29*
			(0.11)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			-0.28
			(0.25)
Metropolitan suburb			-0.13
			(0.12)
Years lived at current address			0.0044
			(0.0064)
Constant	1.69**	1.61**	2.11**
	(0.33)	(0.40)	(0.48)
R-squared	0.000	0.067	0.085
<u>Model Comparisons:</u>			
Wald F		2.39	1.66
Wald Prob>F		0.0034	0.14
Wald df		14, 358	5, 358

Robust standard errors in parentheses
** p<0.001, * p<0.01, † p<0.05
Gamma measure = a measure of walkability; ratio of actual number of street segments to maximum possible given number of intersections. Here calculated at the level of the block group.
NOTE: Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.01 is considered significant. Age and years lived at current address are centered at the mean.

Table 6D.5: Ordinary least squares regression of strenuous physical activity on traffic density and covariates.
Asian Community Health Initiative, N=411

	Strenuous physical activity (square root of hrs/week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Traffic density (square-root)	0.038	0.036	0.041
	(0.11)	(0.12)	(0.12)
Age (10 years)		-0.019	-0.044
		(0.051)	(0.055)
Marital status (ref = Married)			
Formerly married		-0.0023	-0.011
		(0.16)	(0.16)
Single		-0.0016	-0.031
		(0.13)	(0.13)
Asian ethnicity (ref = Chinese)			
Filipina		0.054	0.065
		(0.17)	(0.17)
Other AANHPI		-0.016	-0.042
		(0.13)	(0.13)
Survey language (ref = English)			
Chinese		-0.089	-0.071
		(0.17)	(0.17)
Tagalog		-0.10	-0.031
		(0.29)	(0.30)
US-born (ref = Foreign-born)		0.44**	0.40*
		(0.12)	(0.12)
Education (ref = College graduate)			
<=High school		0.55*	0.58*
		(0.17)	(0.18)
Some college		0.062	0.058
		(0.14)	(0.14)
Employment (ref = Full time)			
Part time		-0.031	-0.041
		(0.13)	(0.13)
Not working		-0.016	-0.012
		(0.13)	(0.13)
Homeowner (ref = renter/other non-homeowner)		0.0068	0.0044
		(0.12)	(0.12)

Public insurance/Other/Not insured (ref = private insurance)		-0.20	-0.21
		(0.16)	(0.17)
High neighborhood SES (ref = low neighborhood SES)			-0.071
			(0.12)
High API enclave (ref = low API enclave)			-0.29*
			(0.11)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			-0.23
			(0.24)
Metropolitan suburb			-0.098
			(0.11)
Years lived at current address			0.0048
			(0.0063)
Constant	1.62**	1.45**	1.80**
	(0.10)	(0.21)	(0.26)
R-squared	0.000	0.067	0.085
Model Comparisons:			
Wald F		2.38	1.61
Wald Prob>F		0.0036	0.16
Wald df		14, 358	5, 358

Robust standard errors in parentheses
** p<0.001, * p<0.01, † p<0.05
NOTE: Traffic density calculated as vehicle kilometers travelled within 1,600-meter network distance of individuals' addresses. Traffic density transformed by taking the square-root. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.01 is considered significant. Age and years lived at current address are centered at the mean.

Table 6D.6: Ordinary least squares regression models testing whether features of the built environment mediate the association between living in a high ethnic enclave and strenuous physical activity.
Asian Community Health Initiative, N=411

	Strenuous physical activity (square root of hrs/week): b(se)					
VARIABLES	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
High API enclave (ref = low API enclave)	-0.29*	-0.29*	-0.29*	-0.29*	-0.29*	-0.29*
	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Number of recreational facilities (square-root)		0.031				
		(0.043)				
Number of parks (square-root)			0.018			
			(0.074)			
Alpha measure				-0.32		
				(0.56)		
Gamma measure					-0.53	
					(0.83)	
Traffic density (square-root)						0.041
						(0.12)
Age (10 years)	-0.045	-0.043	-0.045	-0.045	-0.045	-0.044
	(0.054)	(0.054)	(0.054)	(0.055)	(0.055)	(0.055)
Marital status (ref = Married)						
Formerly married	-0.0081	-0.016	-0.010	-0.0032	-0.0032	-0.011
	(0.16)	(0.17)	(0.17)	(0.16)	(0.16)	(0.16)
Single	-0.028	-0.034	-0.028	-0.029	-0.029	-0.031
	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)
Asian ethnicity (ref = Chinese)						
Filipina	0.064	0.079	0.066	0.055	0.054	0.065
	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)
Other AANHPI	-0.044	-0.036	-0.045	-0.053	-0.054	-0.042

	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)
Survey language (ref = English)						
Chinese	-0.067	-0.069	-0.067	-0.067	-0.067	-0.071
	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)
Tagalog	-0.036	-0.036	-0.035	-0.038	-0.038	-0.031
	(0.29)	(0.29)	(0.29)	(0.29)	(0.29)	(0.30)
US-born (ref = Foreign-born)	0.40*	0.40*	0.40*	0.40*	0.40*	0.40*
	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)
Education (ref = College graduate)						
<=High school	0.58*	0.57*	0.57*	0.58*	0.58*	0.58*
	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)
Some college	0.062	0.061	0.060	0.067	0.068	0.058
	(0.13)	(0.14)	(0.13)	(0.13)	(0.13)	(0.14)
Employment (ref = Full time)						
Part time	-0.044	-0.032	-0.042	-0.056	-0.057	-0.041
	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)
Not working	-0.015	-0.010	-0.014	-0.027	-0.028	-0.012
	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)	(0.13)
Homeowner (ref = renter/other non-homeowner)	-0.0014	0.011	0.0017	-0.00088	-0.0015	0.0044
	(0.12)	(0.13)	(0.13)	(0.12)	(0.12)	(0.12)
Public insurance/Other/Not insured (ref = private insurance)	-0.21	-0.21	-0.21	-0.21	-0.21	-0.21
	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)	(0.17)
High neighborhood SES (ref = low neighborhood SES)	-0.074	-0.070	-0.071	-0.075	-0.075	-0.071
	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)	(0.12)
Urbanicity (ref = metropolitan urban)						
Non-metropolitan city/Rural	-0.23	-0.19	-0.21	-0.27	-0.28	-0.23
	(0.24)	(0.25)	(0.26)	(0.25)	(0.25)	(0.24)

Metropolitan suburb	-0.10	-0.072	-0.095	-0.13	-0.13	-0.098
	(0.11)	(0.12)	(0.12)	(0.12)	(0.12)	(0.11)
Years lived at current address	0.0047	0.0045	0.0047	0.0044	0.0044	0.0048
	(0.0063)	(0.0064)	(0.0063)	(0.0064)	(0.0064)	(0.0063)
Constant	1.84**	1.74**	1.80**	1.92**	2.11**	1.80**
	(0.23)	(0.27)	(0.28)	(0.27)	(0.48)	(0.26)
R-squared	0.084	0.085	0.084	0.085	0.085	0.085

Robust standard errors in parentheses
** p<0.001, * p<0.01, † p<0.05
Alpha measure = a measure of walkability; ratio of actual number of complete loops to the maximum number of possible loops given the number of intersections. Here calculated at the level of the block group.
Gamma measure = a measure of walkability; ratio of actual number of street segments to maximum possible given number of intersections. Here calculated at the level of the block group.
NOTE: Number of recreational facilities and parks counted within 1,600-meter network distance of individuals' addresses. Traffic density calculated as vehicle kilometers travelled within 1,600-meter network distance of individuals' addresses. Number of recreational facilities, number of parks, and traffic density transformed by taking the square-root. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.01 is considered significant. Age and years lived at current address are centered at the mean.

Table 6E.1: Negative binomial regression of average weekly alcohol use on number of neighborhood liquor stores and covariates.
Asian Community Health Initiative, control sample. N=430

VARIABLES	*Average weekly alcohol use (drinks per week): b(se)* Model 1
Number of liquor stores (square-root)	-0.011
	(0.081)
Age (10 years)	-0.023
	(0.087)
Marital status (ref = Married)	
Formerly married	-0.40
	(0.32)
Single	0.21
	(0.22)
Asian ethnicity (ref = Chinese)	
Filipina	0.40
	(0.33)
Other AANHPI	0.85**
	(0.22)
Survey language (ref = English)	
Chinese	-0.024
	(0.38)
Tagalog	-1.82**
	(0.65)
US-born (ref = Foreign-born)	0.72**
	(0.24)
Education (ref = College graduate)	
<=High school	-1.04*
	(0.44)
Some college	-0.49
	(0.30)
Employment (ref = Full time)	
Part time	-0.41†
	(0.24)
Not working	-0.023
	(0.24)
Homeowner (ref = renter/other non-homeowner)	0.12

	(0.24)
Public insurance/Other/Not insured (ref = private insurance)	-0.043
	(0.30)
High neighborhood SES (ref = low neighborhood SES)	0.067
	(0.24)
High API enclave (ref = low API enclave)	-0.55**
	(0.19)
Urbanicity (ref = metropolitan urban)	
Non-metropolitan city/Rural	-0.63
	(0.43)
Metropolitan suburb	-0.65*
	(0.26)
Years lived at current address	-0.0020
	(0.012)
Constant	0.30
	(0.53)

Robust standard errors in parentheses
** $p<0.01$, * $p<0.05$, † $p<0.1$
NOTE: Number of liquor stores counted within 1,600-meter network distance of individuals' addresses. Number liquor stores transformed by taking the square-root. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.01 is considered significant. Age and years lived at current address are centered at the mean.

Table 6E.2: The decomposed effect of living in a high ethnic enclave on weekly alcohol use, mediated by number of neighborhood liquor stores. Asian Community Health Initiative, control sample. N=430

	Average weekly alcohol use (drinks per week): b(se)	*SE*	*P-value*
Decomposed effects of living in a high ethnic enclave, mediated by number of liquor stores (square-root)			
Total effect	0.52	0.24	0.01
Direct effect	0.51	0.24	0.01
Indirect effect	1.01	0.02	0.46

Gamma measure = a measure of walkability; ratio of actual number of street segments to maximum possible given number of intersections. Here calculated at the level of the block group.
SE = standard error
NOTE: Decomposed effects calculated using the command “paramed” in STATA, which allows for negative binomial regression. Model controls for age, marital status, Asian ethnicity, survey language, nativity, education, employment, homeownership, health insurance status, ever pregnant, number of pregnancies, age at first birth, number of months breastfed, age at first menstrual period, family history of breast cancer, menopausal status, neighborhood socioeconomic status, urbanicity, and years lived in current residence. The “paramed” command did not allow standard errors to be adjusted for clustering at the Census block group level.

Table 6F.1: Ordinary least squares regression of fruit consumption on restaurant environment index (ratio of fast food restaurants to total number of other restaurants and food stores) and covariates.
Asian Community Health Initiative, control sample. N=425

	Fruit consumption (times per week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Neighborhood has any restaurant or food store (ref = no restaurants or food store)	1.97	2.42	2.30
	(1.45)	(1.54)	(1.42)
REI (square root)	0.49	1.24	1.39
	(1.28)	(1.33)	(1.37)
Age (10 years)		0.68*	0.77*
		(0.22)	(0.25)
Marital status (ref = Married)			
Formerly married		-0.083	-0.10
		(0.68)	(0.68)
Single		-0.34	-0.22
		(0.65)	(0.68)
Asian ethnicity (ref = Chinese)			
Filipina		0.013	-0.018
		(0.83)	(0.83)
Other AANHPI		0.13	0.027
		(0.65)	(0.65)
Survey language (ref = English)			
Chinese		1.33	1.15
		(0.82)	(0.85)
Tagalog		0.70	0.60
		(1.17)	(1.21)
US-born (ref = Foreign-born)		-0.51	-0.54
		(0.65)	(0.65)
Education (ref = College graduate)			
<=High school		-1.37	-1.28
		(0.80)	(0.83)
Some college		-1.29#	-1.15
		(0.61)	(0.63)
Employment (ref = Full time)			
Part time		-0.73	-0.56
		(0.64)	(0.67)

Not working		0.52	0.73
		(0.61)	(0.62)
Homeowner (ref = renter/other non-homeowner)		0.45	0.82
		(0.58)	(0.61)
Public insurance/Other/Not insured (ref = private insurance)		-0.49	-0.71
		(0.67)	(0.69)
High neighborhood SES (ref = low neighborhood SES)			-0.36
			(0.59)
High API enclave (ref = low API enclave)			-0.72
			(0.57)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			-1.54
			(1.11)
Metropolitan suburb			-0.20
			(0.53)
Years lived at current address			-0.039
			(0.028)
Constant	6.29**	5.96**	6.79**
	(1.43)	(1.62)	(1.68)
R-squared	0.003	0.066	0.077
<u>Model Comparisons:</u>			
Wald F		2.41	0.97
Wald Prob>F		0.0031	0.43
Wald df		14, 370	5, 370

Robust standard errors in parentheses
** p<0.001, * p<0.025, † p<0.05
REI = restaurant environment index (ratio of fast food restaurants to total number of other restaurants and food stores); calculated within 1,600-meter network distance of individuals' addresses. Transformed by taking the square-root.
NOTE: Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.025 is considered significant. REI, age, and years lived at current address are centered at the mean.

Table 6F.2: Ordinary least squares regression of fruit consumption on retail food environment 3 (RFEI3) (ratio of convenience stores and fast food restaurants to supermarkets and farmers markets) and covariates.
Asian Community Health Initiative, control sample. N=425

	Fruit consumption (times per week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Neighborhood has any supermarket or farmers market (ref = no supermarket or farmers market)	1.25	1.36	1.23
	(0.87)	(0.90)	(0.91)
RFEI3 (square root)	-0.72	-0.27	-0.12
	(0.71)	(0.72)	(0.76)
Age (10 years)		0.66*	0.74*
		(0.22)	(0.24)
Marital status (ref = Married)			
Formerly married		-0.069	-0.068
		(0.69)	(0.69)
Single		-0.22	-0.14
		(0.65)	(0.68)
Asian ethnicity (ref = Chinese)			
Filipina		0.23	0.14
		(0.84)	(0.84)
Other AANHPI		0.21	0.10
		(0.65)	(0.66)
Survey language (ref = English)			
Chinese		1.41	1.21
		(0.80)	(0.84)
Tagalog		0.87	0.77
		(1.13)	(1.18)
US-born (ref = Foreign-born)		-0.53	-0.56
		(0.64)	(0.65)
Education (ref = College graduate)			
<=High school		-1.40	-1.36
		(0.79)	(0.82)
Some college		-1.23#	-1.13
		(0.60)	(0.62)
Employment (ref = Full time)			
Part time		-0.65	-0.52
		(0.63)	(0.65)

Not working		0.48	0.68
		(0.60)	(0.62)
Homeowner (ref = renter/other non-homeowner)		0.48	0.82
		(0.58)	(0.61)
Public insurance/Other/Not insured (ref = private insurance)		-0.45	-0.65
		(0.67)	(0.68)
High neighborhood SES (ref = low neighborhood SES)			-0.45
			(0.58)
High API enclave (ref = low API enclave)			-0.63
			(0.58)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			-1.58
			(1.13)
Metropolitan suburb			-0.12
			(0.55)
Years lived at current address			-0.034
			(0.028)
Constant	7.07**	6.93**	7.76**
	(0.84)	(1.14)	(1.37)
R-squared	0.007	0.065	0.076
Model Comparisons:			
Wald F		2.24	0.92
Wald Prob>F		0.0062	0.47
Wald df		14, 370	5, 370

Robust standard errors in parentheses
** p<0.001, * p<0.025, † p<0.05
RFEI3 = retail food environment index 3 (ratio of convenience and fast food outlets to supermarkets and farmers markets); calculated within 1,600-meter network distance of individuals' addresses. Transformed by taking the square-root.
NOTE: Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.025 is considered significant. RFEI3, age, and years lived at current address are centered at the mean.

Table 6G.1: Ordinary least squares regression of vegetable consumption on restaurant environment index (ratio of fast food restaurants to total number of other restaurants and food stores) and covariates.
Asian Community Health Initiative, control sample. N=425

	Vegetable consumption (times per week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Neighborhood has any restaurant or food store (ref = no restaurants or food store)	0.64	1.11	0.74
	(1.59)	(1.71)	(1.54)
REI (square root)	-0.39	0.26	0.89
	(1.19)	(1.17)	(1.21)
Age (10 years)		0.19	0.12
		(0.22)	(0.24)
Marital status (ref = Married)			
Formerly married		-0.83	-0.83
		(0.61)	(0.61)
Single		-0.72	-0.90
		(0.63)	(0.64)
Asian ethnicity (ref = Chinese)			
Filipina		-2.18*	-2.25*
		(0.83)	(0.83)
Other AANHPI		-0.50	-0.47
		(0.60)	(0.60)
Survey language (ref = English)			
Chinese		0.28	0.36
		(0.76)	(0.77)
Tagalog		1.19	0.88
		(1.25)	(1.24)
US-born (ref = Foreign-born)		-0.54	-0.72
		(0.60)	(0.62)
Education (ref = College graduate)			
<=High school		-0.48	-0.15
		(0.73)	(0.75)
Some college		-0.92	-0.74
		(0.61)	(0.62)
Employment (ref = Full time)			
Part time		-0.61	-0.71
		(0.61)	(0.61)

Not working		-0.51	-0.60
		(0.58)	(0.57)
Homeowner (ref = renter/other non-homeowner)		0.63	0.39
		(0.54)	(0.58)
Public insurance/Other/Not insured (ref = private insurance)		0.18	0.33
		(0.70)	(0.71)
High neighborhood SES (ref = low neighborhood SES)			0.69
			(0.53)
High API enclave (ref = low API enclave)			-0.44
			(0.55)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			-1.48
			(1.07)
Metropolitan suburb			0.81
			(0.50)
Years lived at current address			-0.0063
			(0.028)
Constant	8.00**	8.50**	8.46**
	(1.57)	(1.86)	(1.82)
R-squared	0.001	0.057	0.077
<u>Model Comparisons:</u>			
Wald F		1.67	1.81
Wald Prob>F		0.060	0.11
Wald df		14, 370	5, 370

Robust standard errors in parentheses
** p<0.001, * p<0.025, † p<0.05
REI = restaurant environment index (ratio of fast food restaurants to total number of other restaurants and food stores); calculated within 1,600-meter network distance of individuals' addresses. Transformed by taking the square-root.
NOTE: Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.025 is considered significant. REI, age, and years lived at current address are centered at the mean.

Table 6G.2: Ordinary least squares regression of vegetable consumption on retail food environment 3 (RFEI3) (ratio of convenience stores and fast food restaurants to supermarkets and farmers markets) and covariates.
Asian Community Health Initiative, control sample. N=425

	Vegetable consumption (times per week): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Neighborhood has any supermarket or farmers market (ref = no supermarket or farmers market)	0.87	0.70	0.92
	(0.79)	(0.85)	(0.85)
RFEI3 (square root)	-0.90	-0.33	-0.42
	(0.68)	(0.71)	(0.74)
Age (10 years)		0.19	0.11
		(0.22)	(0.24)
Marital status (ref = Married)			
Formerly married		-0.84	-0.83
		(0.62)	(0.61)
Single		-0.64	-0.80
		(0.64)	(0.65)
Asian ethnicity (ref = Chinese)			
Filipina		-2.06*	-2.12*
		(0.85)	(0.85)
Other AANHPI		-0.46	-0.40
		(0.60)	(0.60)
Survey language (ref = English)			
Chinese		0.30	0.34
		(0.76)	(0.76)
Tagalog		1.25	0.97
		(1.26)	(1.25)
US-born (ref = Foreign-born)		-0.57	-0.80
		(0.60)	(0.62)
Education (ref = College graduate)			
<=High school		-0.49	-0.19
		(0.74)	(0.75)
Some college		-0.89	-0.71
		(0.62)	(0.62)
Employment (ref = Full time)			
Part time		-0.56	-0.61
		(0.61)	(0.61)

Not working		-0.51	-0.59
		(0.57)	(0.56)
Homeowner (ref = renter/other non-homeowner)		0.64	0.40
		(0.54)	(0.58)
Public insurance/Other/Not insured (ref = private insurance)		0.18	0.33
		(0.70)	(0.71)
High neighborhood SES (ref = low neighborhood SES)			0.63
			(0.53)
High API enclave (ref = low API enclave)			-0.33
			(0.57)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			-1.34
			(1.06)
Metropolitan suburb			0.92
			(0.51)
Years lived at current address			-0.0049
			(0.028)
Constant	7.83**	8.87**	8.17**
	(0.76)	(1.18)	(1.36)
R-squared	0.007	0.058	0.079
Model Comparisons:			
Wald F		1.49	1.91
Wald Prob>F		0.11	0.091
Wald df		14, 370	5, 370

Robust standard errors in parentheses
** p<0.001, * p<0.025, † p<0.05
RFEI3 = retail food environment index 3 (ratio of convenience and fast food outlets to supermarkets and farmers markets); calculated within 1,600-meter network distance of individuals' addresses. Transformed by taking the square-root.
NOTE: Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.025 is considered significant. RFEI3, age, and years lived at current address are centered at the mean.

Table 6H.1: Ordinary least squares regression of body mass index on restaurant environment index (ratio of fast food restaurants to total number of other restaurants and food stores) and covariates.
Asian Community Health Initiative, control sample. N=410

	Body mass index (kg/m²): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Neighborhood has any restaurant or food store (ref = no restaurants or food store)	2.89**	1.47	1.84
	(0.82)	(1.05)	(1.16)
REI (square root)	1.62	0.91	0.58
	(1.24)	(1.18)	(1.22)
Age (10 years)		-0.0071	0.013
		(0.26)	(0.26)
Marital status (ref = Married)			
Formerly married		-0.37	-0.35
		(0.57)	(0.56)
Single		-1.06	-0.93
		(0.68)	(0.68)
Asian ethnicity (ref = Chinese)			
Filipina		1.08	1.08
		(0.71)	(0.71)
Other AANHPI		2.00**	1.88*
		(0.59)	(0.59)
Survey language (ref = English)			
Chinese		-0.35	-0.42
		(0.75)	(0.77)
Tagalog		0.20	0.57
		(1.09)	(1.07)
US-born (ref = Foreign-born)		2.08*	2.15*
		(0.66)	(0.73)
Education (ref = College graduate)			
<=High school		0.95	0.77
		(0.91)	(0.96)
Some college		0.66	0.53
		(0.73)	(0.71)
Employment (ref = Full time)			
Part time		0.28	0.35
		(0.64)	(0.65)
Not working		-0.79	-0.63

		(0.58)	(0.60)
Homeowner (ref = renter/other non-homeowner)		-1.02	-0.77
		(0.59)	(0.64)
Public insurance/Other/Not insured (ref = private insurance)		1.60	1.36
		(0.90)	(0.87)
High neighborhood SES (ref = low neighborhood SES)			-0.91
			(0.65)
High API enclave (ref = low API enclave)			-0.57
			(0.58)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			0.73
			(2.03)
Metropolitan suburb			-0.62
			(0.50)
Years lived at current address			-0.0015
			(0.023)
Constant	21.1**	21.5**	22.4**
	(0.79)	(1.25)	(1.44)
R-squared	0.010	0.141	0.155
<u>Model Comparisons:</u>			
Wald F		2.72	0.97
Wald Prob>F		0.00081	0.44
Wald df		14, 357	5, 357

Robust standard errors in parentheses
** p<0.001, * p<0.007, † p<0.05
REI = restaurant environment index (ratio of fast food restaurants to total number of other restaurants and food stores); calculated within 1,600-meter network distance of individuals' addresses. Transformed by taking the square-root.
NOTE: Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.007 is considered significant. REI, age, and years lived at current address are centered at the mean.

Table 6H.2: Ordinary least squares regression of body mass index on retail food environment 3 (RFEI3) (ratio of convenience stores and fast food restaurants to supermarkets and farmers markets) and covariates. Asian Community Health Initiative, control sample. N=410

	Body mass index (kg/m^2): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Neighborhood has any supermarket or farmers market (ref = no supermarket or farmers market)	0.54	0.086	-0.081
	(0.69)	(0.74)	(0.73)
RFEI3 (square root)	-0.19	-0.53	-0.30
	(0.61)	(0.65)	(0.68)
Age (10 years)		-0.015	0.010
		(0.26)	(0.27)
Marital status (ref = Married)			
Formerly married		-0.39	-0.35
		(0.57)	(0.55)
Single		-1.01	-0.90
		(0.68)	(0.67)
Asian ethnicity (ref = Chinese)			
Filipina		1.25	1.15
		(0.71)	(0.71)
Other AANHPI		2.02**	1.90*
		(0.60)	(0.60)
Survey language (ref = English)			
Chinese		-0.33	-0.39
		(0.75)	(0.77)
Tagalog		0.27	0.62
		(1.09)	(1.07)
US-born (ref = Foreign-born)		2.08*	2.21*
		(0.64)	(0.72)
Education (ref = College graduate)			
<=High school		1.04	0.80
		(0.93)	(0.96)
Some college		0.77	0.61
		(0.73)	(0.71)
Employment (ref = Full time)			
Part time		0.31	0.31
		(0.67)	(0.67)
Not working		-0.89	-0.75

		(0.57)	(0.60)
Homeowner (ref = renter/other non-homeowner)		-1.04	-0.81
		(0.59)	(0.63)
Public insurance/Other/Not insured (ref = private insurance)		1.61	1.39
		(0.90)	(0.86)
High neighborhood SES (ref = low neighborhood SES)			-0.98
			(0.64)
High API enclave (ref = low API enclave)			-0.47
			(0.60)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			0.57
			(2.03)
Metropolitan suburb			-0.60
			(0.51)
Years lived at current address			0.0014
			(0.024)
Constant	23.5**	22.8**	24.2**
	(0.65)	(1.06)	(1.25)
R-squared	0.001	0.140	0.153
Model Comparisons:			
Wald F		2.89	0.97
Wald Prob>F		0.00036	0.43
Wald df		14, 357	5, 357

Robust standard errors in parentheses
** p<0.001, * p<0.007, † p<0.05
RFEI3 = retail food environment index 3 (ratio of convenience and fast food outlets to supermarkets and farmers markets); calculated within 1,600-meter network distance of individuals' addresses. Transformed by taking the square-root.
NOTE: Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.007 is considered significant. RFEI3, age, and years lived at current address are centered at the mean.

Table 6H.3: Ordinary least squares regression of body mass index on number of recreational facilities and covariates. Asian Community Health Initiative, control sample. N=410

	Body mass index (kg/m²): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Number of recreational facilities (square-root)	-0.038	-0.046	-0.20
	(0.18)	(0.21)	(0.23)
Age (10 years)		-0.013	-0.0040
		(0.25)	(0.26)
Marital status (ref = Married)			
Formerly married		-0.35	-0.28
		(0.57)	(0.55)
Single		-1.04	-0.88
		(0.69)	(0.68)
Asian ethnicity (ref = Chinese)			
Filipina		1.14	1.03
		(0.72)	(0.74)
Other AANHPI		1.99**	1.83*
		(0.59)	(0.59)
Survey language (ref = English)			
Chinese		-0.28	-0.34
		(0.74)	(0.76)
Tagalog		0.25	0.61
		(1.09)	(1.06)
US-born (ref = Foreign-born)		2.15**	2.23*
		(0.64)	(0.73)
Education (ref = College graduate)			
<=High school		1.02	0.83
		(0.95)	(0.98)
Some college		0.73	0.59
		(0.75)	(0.72)
Employment (ref = Full time)			
Part time		0.22	0.22
		(0.66)	(0.65)
Not working		-0.90	-0.76
		(0.57)	(0.59)
Homeowner (ref = renter/other non-homeowner)		-1.06	-0.89
		(0.61)	(0.65)

Public insurance/Other/Not insured (ref = private insurance)		1.64	1.37
		(0.91)	(0.88)
High neighborhood SES (ref = low neighborhood SES)			-1.00
			(0.63)
High API enclave (ref = low API enclave)			-0.53
			(0.58)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			0.23
			(2.01)
Metropolitan suburb			-0.84
			(0.56)
Years lived at current address			0.0029
			(0.023)
Constant	24.1**	23.0**	24.8**
	(0.44)	(0.95)	(1.22)
R-squared	0.000	0.139	0.155
<u>Model Comparisons:</u>			
Wald F		2.87	1.27
Wald Prob>F		0.00040	0.28
Wald df		14, 357	5, 357

Robust standard errors in parentheses
** p<0.001, * p<0.007, † p<0.05
NOTE: Number of recreational facilities counted within 1,600-meter network distance of individuals' addresses. Number of recreational facilities transformed by taking the square-root. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.007 is considered significant. Age and years lived at current address are centered at the mean.

Table 6H.4: Ordinary least squares regression of body mass index on number of parks and covariates.
Asian Community Health Initiative, control sample. N=410

	Body mass index (kg/m^2): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Number of parks (square-root)	0.66#	0.47	0.41
	(0.32)	(0.32)	(0.33)
Age (10 years)		0.00043	0.0038
		(0.25)	(0.27)
Marital status (ref = Married)			
Formerly married		-0.43	-0.37
		(0.56)	(0.55)
Single		-1.05	-0.92
		(0.68)	(0.67)
Asian ethnicity (ref = Chinese)			
Filipina		1.19	1.16
		(0.69)	(0.70)
Other AANHPI		2.00**	1.88*
		(0.58)	(0.59)
Survey language (ref = English)			
Chinese		-0.35	-0.35
		(0.74)	(0.77)
Tagalog		0.36	0.69
		(1.08)	(1.06)
US-born (ref = Foreign-born)		2.09*	2.22*
		(0.64)	(0.73)
Education (ref = College graduate)			
<=High school		0.88	0.72
		(0.94)	(0.97)
Some college		0.64	0.51
		(0.76)	(0.72)
Employment (ref = Full time)			
Part time		0.37	0.34
		(0.65)	(0.64)
Not working		-0.86	-0.74
		(0.56)	(0.59)
Homeowner (ref = renter/other non-homeowner)		-0.88	-0.72
		(0.59)	(0.62)

Public insurance/Other/Not insured (ref = private insurance)		1.56	1.37
		(0.89)	(0.86)
High neighborhood SES (ref = low neighborhood SES)			-0.89
			(0.63)
High API enclave (ref = low API enclave)			-0.53
			(0.58)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			1.05
			(2.06)
Metropolitan suburb			-0.41
			(0.54)
Years lived at current address			0.0025
			(0.023)
Constant	23.0**	22.1**	23.3**
	(0.51)	(0.88)	(1.15)
R-squared	0.012	0.144	0.156
<u>Model Comparisons:</u>			
Wald F		2.81	0.75
Wald Prob>F		0.00053	0.59
Wald df		14, 357	5, 357

Robust standard errors in parentheses
** p<0.001, * p<0.007, † p<0.05
NOTE: Number of parks counted within 1,600-meter network distance of individuals' addresses. Number of parks transformed by taking the square-root. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.007 is considered significant. Age and years lived at current address are centered at the mean.

Table 6H.5: Ordinary least squares regression of body mass index on block group alpha measure and covariates.
Asian Community Health Initiative, control sample. N=410

	Body mass index (kg/m^2): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Alpha measure	3.91	4.18	3.90
	(2.13)	(2.17)	(2.73)
Age (10 years)		0.035	0.031
		(0.25)	(0.26)
Marital status (ref = Married)			
Formerly married		-0.46	-0.40
		(0.59)	(0.57)
Single		-1.04	-0.91
		(0.68)	(0.67)
Asian ethnicity (ref = Chinese)			
Filipina		1.29	1.23
		(0.70)	(0.72)
Other AANHPI		2.11**	1.99*
		(0.60)	(0.61)
Survey language (ref = English)			
Chinese		-0.35	-0.37
		(0.75)	(0.77)
Tagalog		0.33	0.68
		(1.07)	(1.06)
US-born (ref = Foreign-born)		2.07*	2.19*
		(0.63)	(0.72)
Education (ref = College graduate)			
<=High school		0.90	0.71
		(0.91)	(0.97)
Some college		0.68	0.53
		(0.74)	(0.71)
Employment (ref = Full time)			
Part time		0.45	0.42
		(0.67)	(0.66)
Not working		-0.72	-0.61
		(0.57)	(0.58)
Homeowner (ref = renter/other non-homeowner)		-0.97	-0.81
		(0.57)	(0.63)

Public insurance/Other/Not insured (ref = private insurance)		1.52	1.33
		(0.88)	(0.86)
High neighborhood SES (ref = low neighborhood SES)			-0.94
			(0.64)
High API enclave (ref = low API enclave)			-0.52
			(0.58)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			1.07
			(2.17)
Metropolitan suburb			-0.36
			(0.56)
Years lived at current address			0.0041
			(0.023)
Constant	23.2**	22.0**	23.2**
	(0.40)	(0.81)	(1.13)
R-squared	0.007	0.145	0.158
Model Comparisons:			
Wald F		2.93	0.82
Wald Prob>F		0.00031	0.53
Wald df		14, 357	5, 357

Robust standard errors in parentheses
** p<0.001, * p<0.007, † p<0.05
Alpha measure = a measure of walkability; ratio of actual number of complete loops to the maximum number of possible loops given the number of intersections. Here calculated at the level of the block group.
NOTE: Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.007 is considered significant. Age and years lived at current address are centered at the mean.

Table 6H.6: Ordinary least squares regression of body mass index on block group gamma measure and covariates.
Asian Community Health Initiative, control sample. N=410

	Body mass index (kg/m²): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Gamma measure	5.84	6.11	5.72
	(3.10)	(3.14)	(4.07)
Age (10 years)		0.033	0.029
		(0.25)	(0.26)
Marital status (ref = Married)			
Formerly married		-0.46	-0.39
		(0.58)	(0.57)
Single		-1.04	-0.92
		(0.68)	(0.67)
Asian ethnicity (ref = Chinese)			
Filipina		1.29	1.23
		(0.70)	(0.72)
Other AANHPI		2.11**	1.99*
		(0.60)	(0.61)
Survey language (ref = English)			
Chinese		-0.36	-0.37
		(0.75)	(0.77)
Tagalog		0.33	0.67
		(1.07)	(1.06)
US-born (ref = Foreign-born)		2.06*	2.19*
		(0.63)	(0.72)
Education (ref = College graduate)			
<=High school		0.89	0.70
		(0.92)	(0.97)
Some college		0.67	0.53
		(0.74)	(0.71)
Employment (ref = Full time)			
Part time		0.46	0.42
		(0.67)	(0.66)
Not working		-0.72	-0.61
		(0.57)	(0.58)
Homeowner (ref = renter/other non-homeowner)		-0.96	-0.80
		(0.57)	(0.63)

Public insurance/Other/Not insured (ref = private insurance)		1.52	1.33
		(0.88)	(0.86)
High neighborhood SES (ref = low neighborhood SES)			-0.95
			(0.64)
High API enclave (ref = low API enclave)			-0.52
			(0.58)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			1.10
			(2.19)
Metropolitan suburb			-0.32
			(0.57)
Years lived at current address			0.0040
			(0.023)
Constant	21.2**	19.9**	21.2**
	(1.39)	(1.61)	(2.24)
R-squared	0.007	0.145	0.158
<u>Model Comparisons:</u>			
Wald F		2.93	0.80
Wald Prob>F		0.00031	0.55
Wald df		14, 357	5, 357

Robust standard errors in parentheses
** p<0.001, * p<0.007, † p<0.05
Gamma measure = a measure of walkability; ratio of actual number of street segments to maximum possible given number of intersections. Here calculated at the level of the block group.
NOTE: Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.007 is considered significant. Age and years lived at current address are centered at the mean.

Table 6H.7: Ordinary least squares regression of body mass index on traffic density and covariates.
Asian Community Health Initiative, control sample. N=410

	Body mass index (kg/m^2): b(se)		
VARIABLES	Model 1	Model 2	Model 3
Traffic density (square-root)	0.55	0.16	-0.064
	(0.57)	(0.53)	(0.53)
Age (10 years)		-0.00092	0.0078
		(0.25)	(0.26)
Marital status (ref = Married)			
Formerly married		-0.38	-0.33
		(0.58)	(0.56)
Single		-1.06	-0.91
		(0.69)	(0.68)
Asian ethnicity (ref = Chinese)			
Filipina		1.16	1.12
		(0.70)	(0.71)
Other AANHPI		2.00**	1.89*
		(0.59)	(0.59)
Survey language (ref = English)			
Chinese		-0.32	-0.35
		(0.74)	(0.76)
Tagalog		0.29	0.63
		(1.08)	(1.06)
US-born (ref = Foreign-born)		2.13**	2.23*
		(0.64)	(0.72)
Education (ref = College graduate)			
<=High school		1.00	0.78
		(0.93)	(0.96)
Some college		0.71	0.58
		(0.75)	(0.73)
Employment (ref = Full time)			
Part time		0.27	0.29
		(0.65)	(0.64)
Not working		-0.88	-0.75
		(0.56)	(0.59)
Homeowner (ref = renter/other non-homeowner)		-1.00	-0.81
		(0.59)	(0.63)

Public insurance/Other/Not insured (ref = private insurance)		1.63	1.40
		(0.89)	(0.87)
High neighborhood SES (ref = low neighborhood SES)			-0.98
			(0.63)
High API enclave (ref = low API enclave)			-0.52
			(0.58)
Urbanicity (ref = metropolitan urban)			
Non-metropolitan city/Rural			0.51
			(2.02)
Metropolitan suburb			-0.64
			(0.51)
Years lived at current address			0.0015
			(0.024)
Constant	23.5**	22.7**	24.2**
	(0.44)	(0.87)	(1.05)
R-squared	0.002	0.139	0.153
Model Comparisons:			
Wald F		2.87	1.09
Wald Prob>F		0.00040	0.36
Wald df		14, 357	5, 357

Robust standard errors in parentheses
** p<0.001, * p<0.007, † p<0.05
NOTE: Traffic density calculated as vehicle kilometers travelled within 1,600-meter network distance of individuals' addresses. Traffic density transformed by taking the square-root. Standard errors adjusted for clustering at the Census block group level. Alpha adjusted using Šidák correction for multiple comparisons so that p-value<0.007 is considered significant. Age and years lived at current address are centered at the mean.

Figure 7A: Forest plot summary of results for having breast cancer

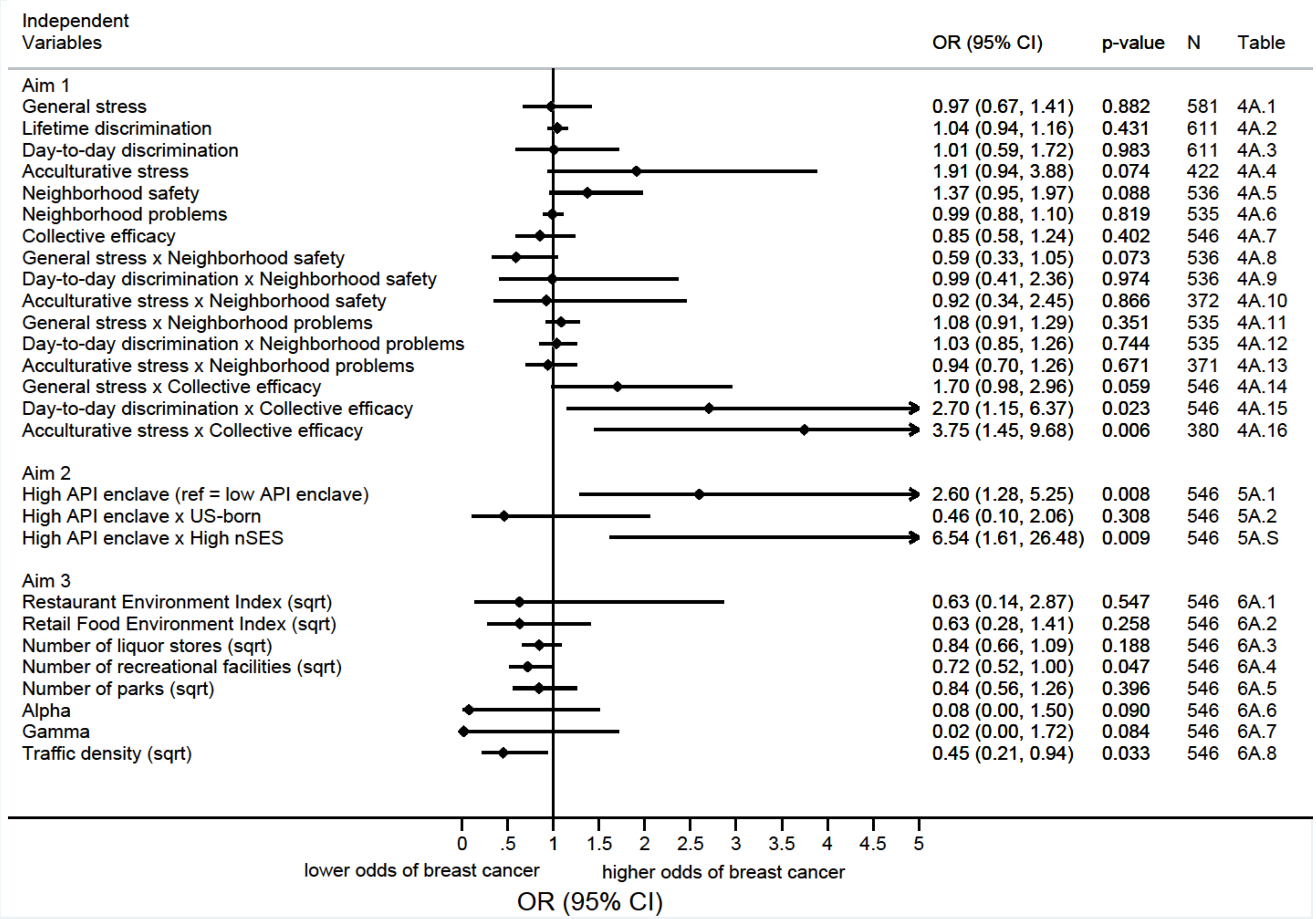
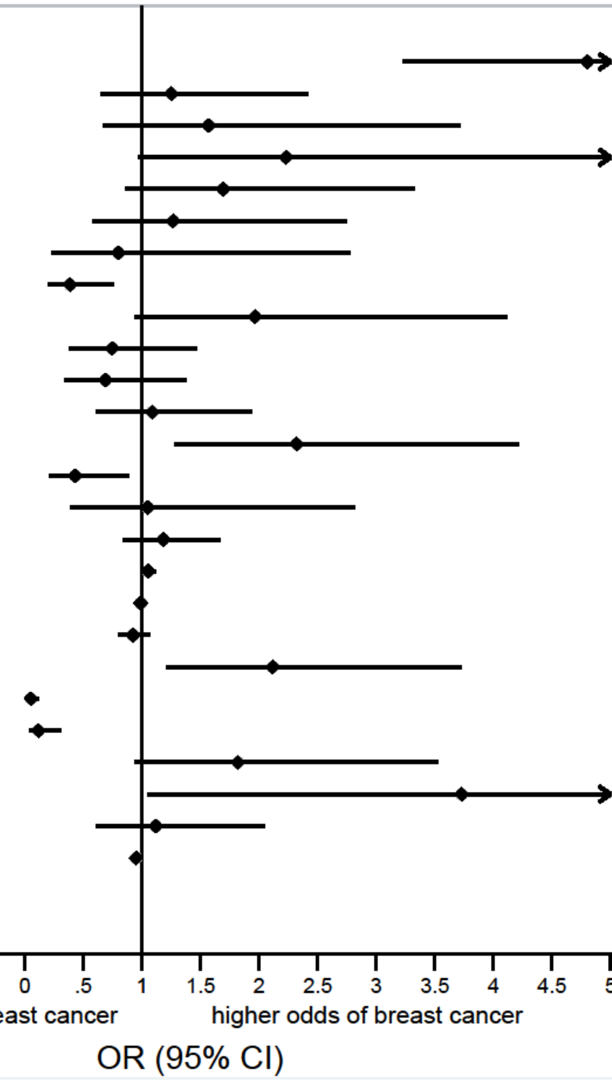


Figure 7A continued



Independent Variables	OR (95% CI)	p-value	N	Table
Control variables				
Age (10 years)	4.80 (3.22, 7.16)	0.000	581	4A.1
Marital status: formerly married (ref = married)	1.25 (0.65, 2.42)	0.507	581	4A.1
Marital status: single (ref = married)	1.57 (0.66, 3.71)	0.304	581	4A.1
Asian ethnicity: Filipina (ref = Chinese)	2.23 (0.97, 5.15)	0.060	581	4A.1
Asian ethnicity: Other AANHPI (ref = Chinese)	1.69 (0.86, 3.33)	0.126	581	4A.1
Survey language: Chinese (ref = English)	1.26 (0.58, 2.74)	0.554	581	4A.1
Survey language: Tagalog (ref = English)	0.80 (0.23, 2.77)	0.724	581	4A.1
US-born (ref = foreign-born)	0.39 (0.20, 0.75)	0.005	581	4A.1
Education: <=high school (ref = college graduate)	1.97 (0.94, 4.12)	0.073	581	4A.1
Education: some college (ref = college graduate)	0.74 (0.38, 1.47)	0.394	581	4A.1
Employment: part time (ref = full time)	0.69 (0.34, 1.38)	0.293	581	4A.1
Employment: not working (ref = full time)	1.09 (0.61, 1.94)	0.776	581	4A.1
Homeowner (ref = non homeowner)	2.32 (1.27, 4.22)	0.006	581	4A.1
Public/other/no insurance (ref = private insurance)	0.43 (0.21, 0.89)	0.022	581	4A.1
Ever pregnant (ref = never pregnant)	1.05 (0.39, 2.82)	0.926	581	4A.1
Number of pregnancies	1.18 (0.83, 1.67)	0.348	581	4A.1
Age at first birth	1.05 (0.99, 1.12)	0.087	581	4A.1
Number of months breastfed	0.99 (0.97, 1.01)	0.306	581	4A.1
Age at first menstrual period	0.92 (0.80, 1.07)	0.278	581	4A.1
Any family history of breast cancer (ref = none)	2.12 (1.20, 3.72)	0.009	581	4A.1
Menopause: post-menopause, no HT (ref = premenopause)	0.05 (0.02, 0.12)	0.000	581	4A.1
Menopause: post-menopause, used HT (ref = premenopause)	0.11 (0.04, 0.31)	0.000	581	4A.1
High nSES (ref = low nSES)	1.82 (0.94, 3.52)	0.076	535	4A.5
Urbanicity: non-metro/rural (ref = metro urban)	3.73 (1.05, 13.29)	0.043	535	4A.5
Urbanicity: metro suburb (ref = metro urban)	1.12 (0.61, 2.04)	0.715	535	4A.5
Years lived at current address	0.95 (0.92, 0.98)	0.001	535	4A.5

Figure 7B: Forest plot summary of results for moderate physical activity

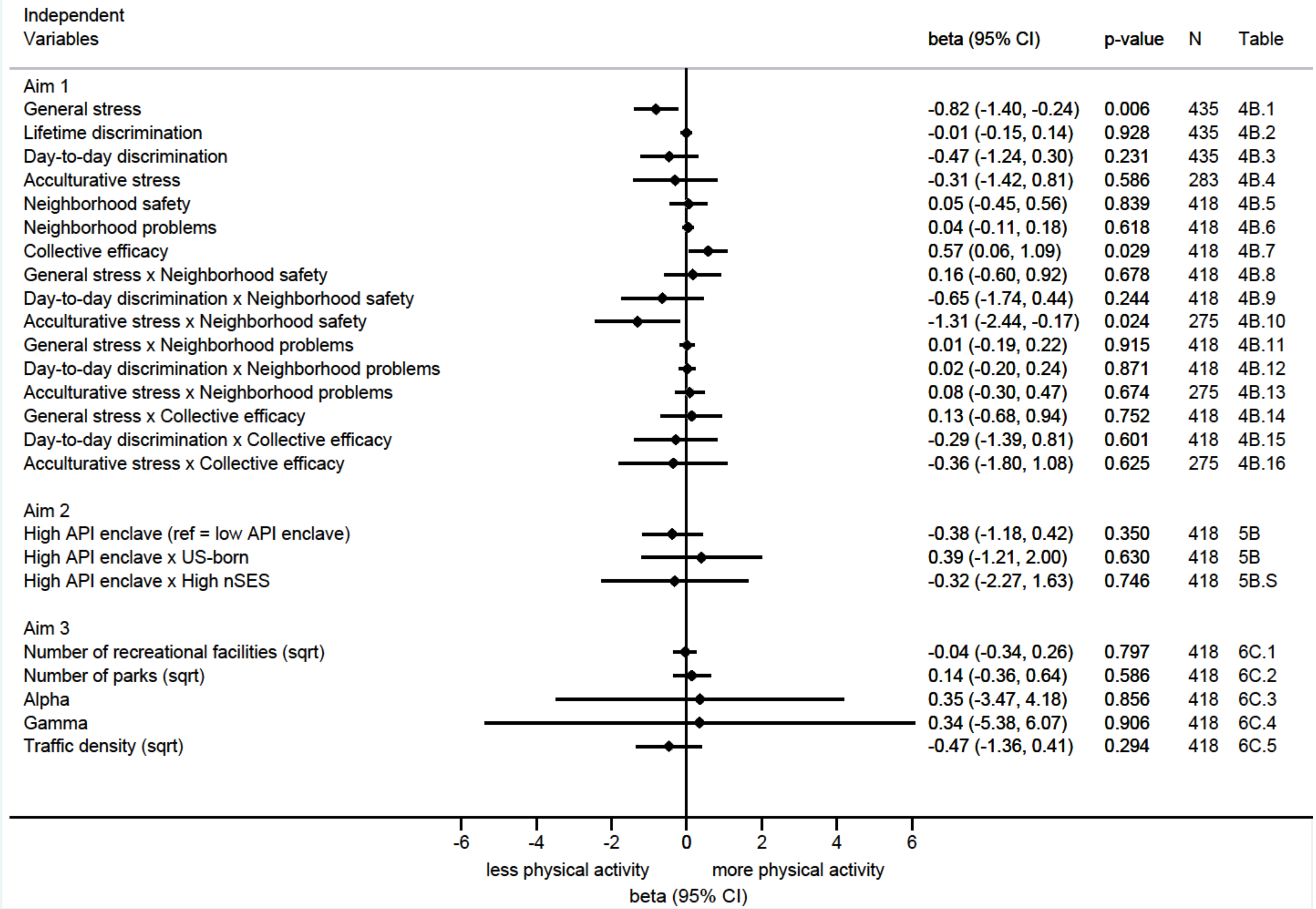
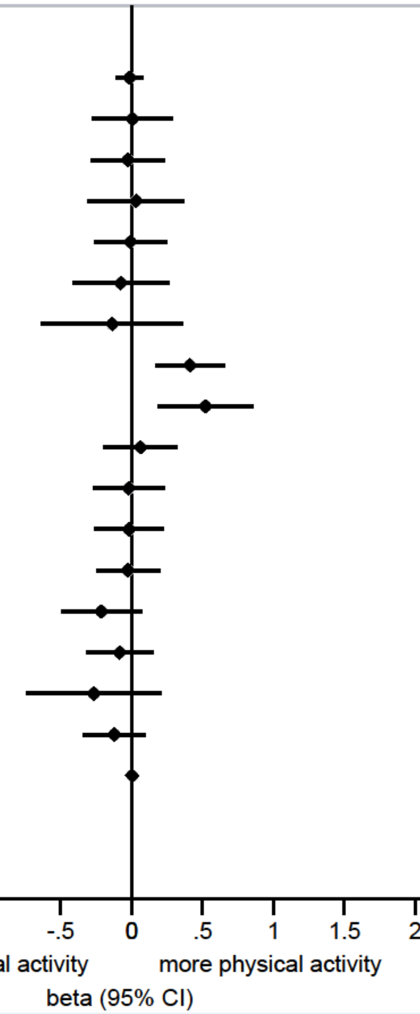


Figure 7B continued



Independent Variables	beta (95% CI)	p-value	N	Table
Control variables				
Age (10 years)	-0.01 (-0.11, 0.08)	0.794	427	4C.1
Marital status: formerly married (ref = married)	0.01 (-0.28, 0.29)	0.960	427	4C.1
Marital status: single (ref = married)	-0.03 (-0.28, 0.23)	0.849	427	4C.1
Asian ethnicity: Filipina (ref = Chinese)	0.03 (-0.31, 0.37)	0.859	427	4C.1
Asian ethnicity: Other AANHPI (ref = Chinese)	-0.01 (-0.27, 0.25)	0.949	427	4C.1
Survey language: Chinese (ref = English)	-0.07 (-0.41, 0.26)	0.665	427	4C.1
Survey language: Tagalog (ref = English)	-0.14 (-0.64, 0.36)	0.594	427	4C.1
US-born (ref = foreign-born)	0.41 (0.17, 0.65)	0.001	427	4C.1
Education: <=high school (ref = college graduate)	0.52 (0.18, 0.86)	0.003	427	4C.1
Education: some college (ref = college graduate)	0.06 (-0.20, 0.33)	0.637	427	4C.1
Employment: part time (ref = full time)	-0.02 (-0.27, 0.23)	0.882	427	4C.1
Employment: not working (ref = full time)	-0.02 (-0.26, 0.23)	0.895	427	4C.1
Homeowner (ref = non homeowner)	-0.03 (-0.25, 0.20)	0.822	427	4C.1
Public/other/no insurance (ref = private insurance)	-0.21 (-0.50, 0.07)	0.142	427	4C.1
High nSES (ref = low nSES)	-0.08 (-0.32, 0.15)	0.492	411	4C.5
Urbanicity: non-metro/rural (ref = metro urban)	-0.27 (-0.74, 0.21)	0.275	411	4C.5
Urbanicity: metro suburb (ref = metro urban)	-0.12 (-0.34, 0.10)	0.277	411	4C.5
Years lived at current address	0.00 (-0.01, 0.02)	0.495	411	4C.5

Figure 7C: Forest plot summary of results for strenuous physical activity

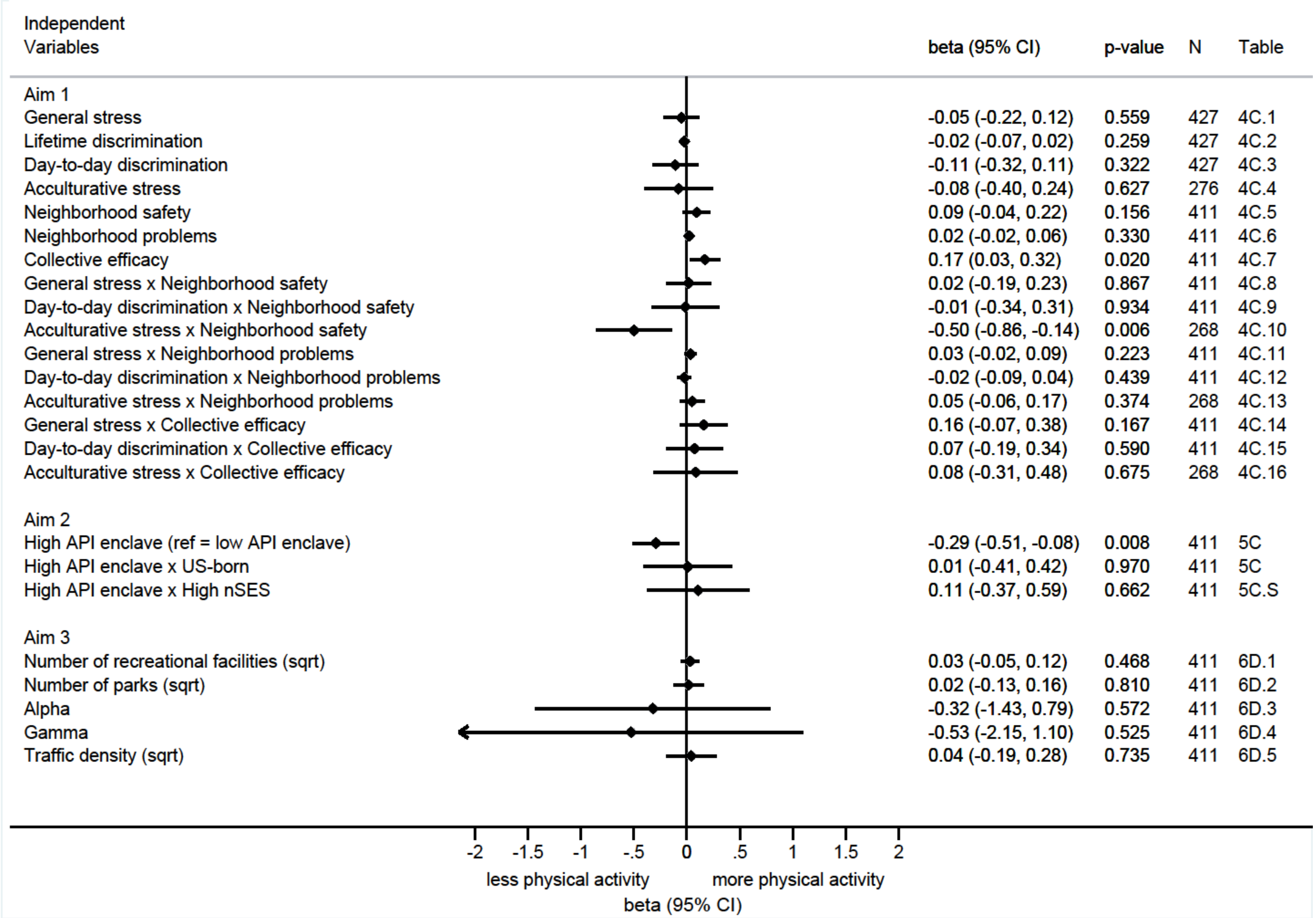


Figure 7C continued

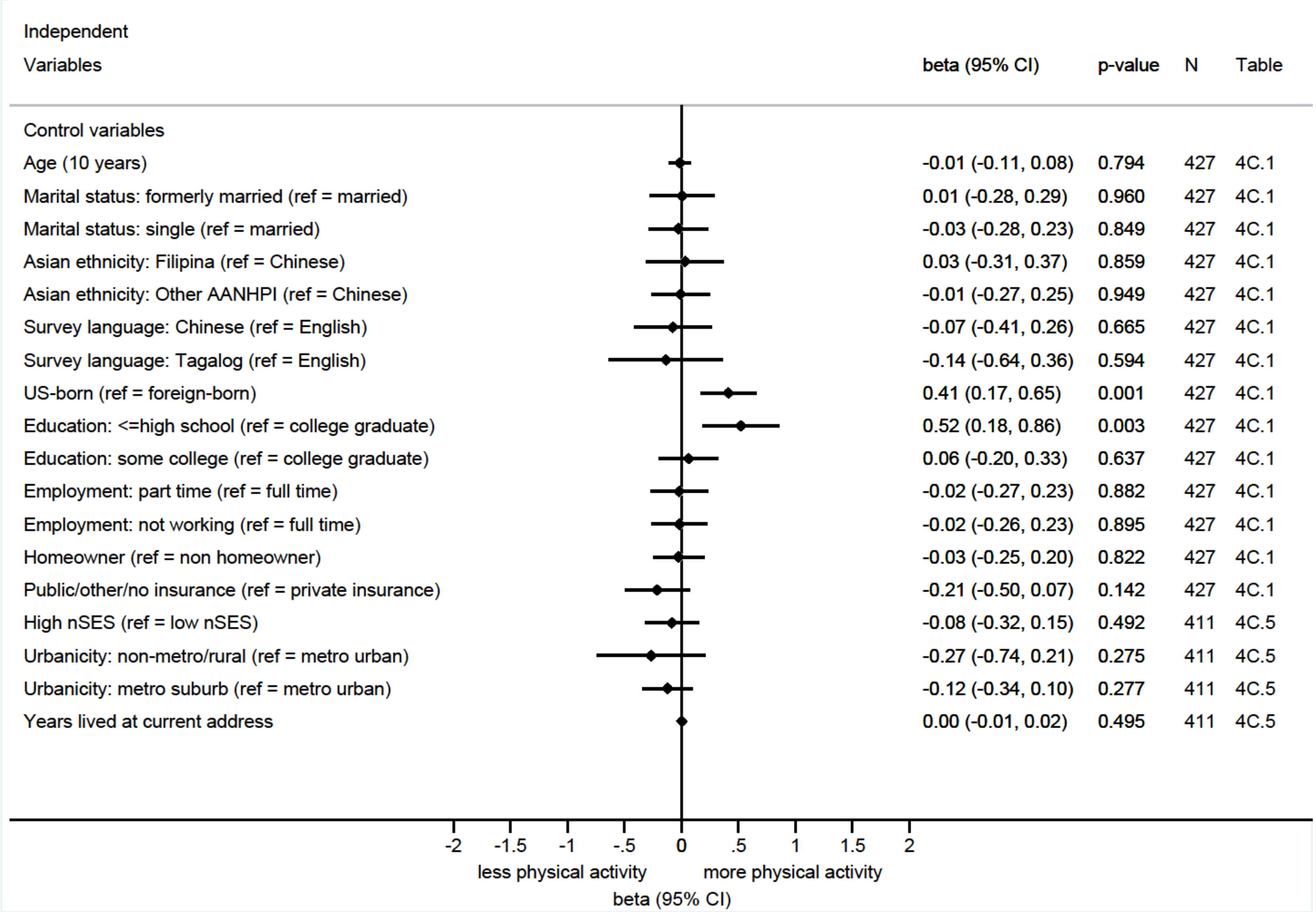


Figure 7D: Forest plot summary of results for alcohol use

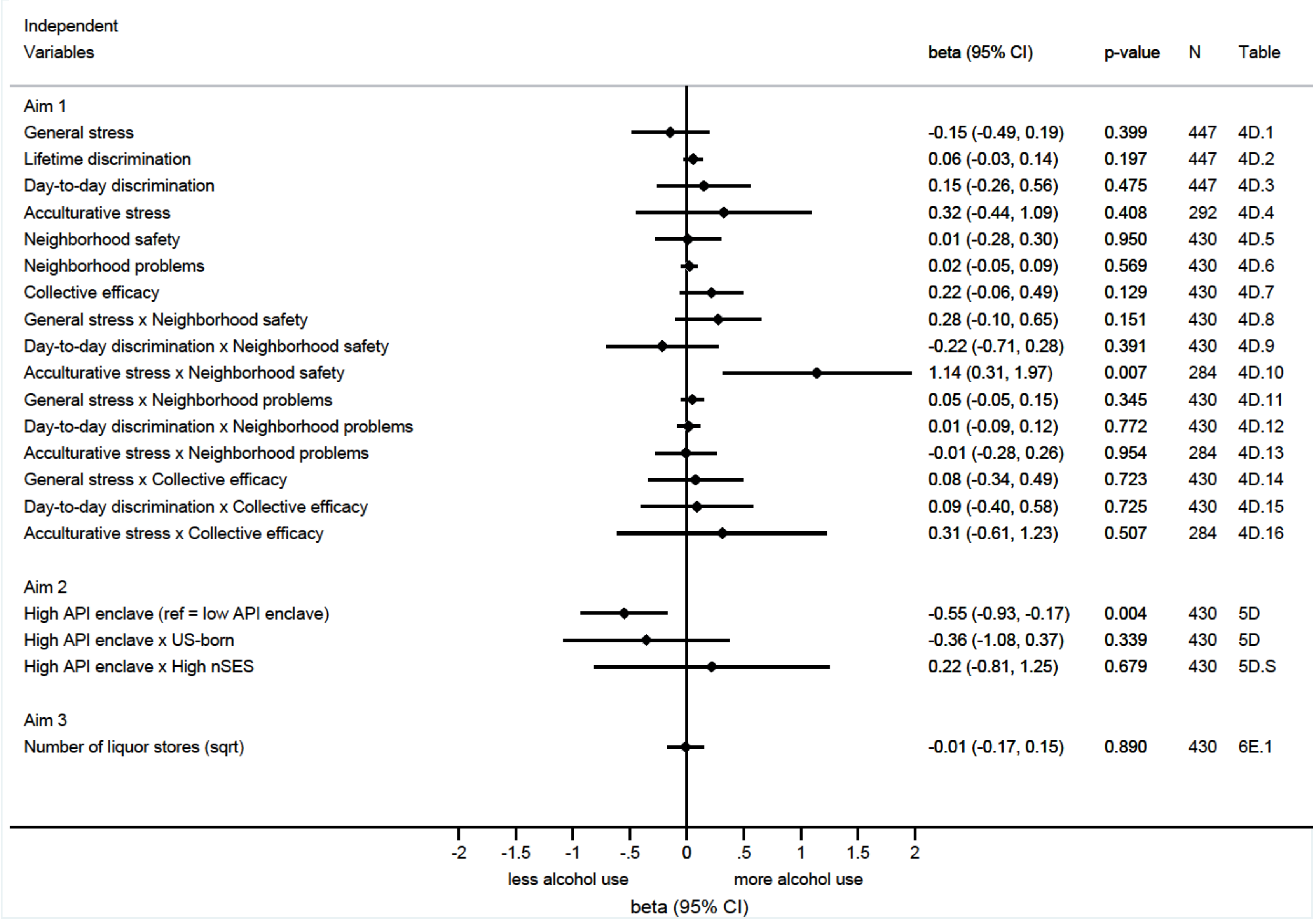
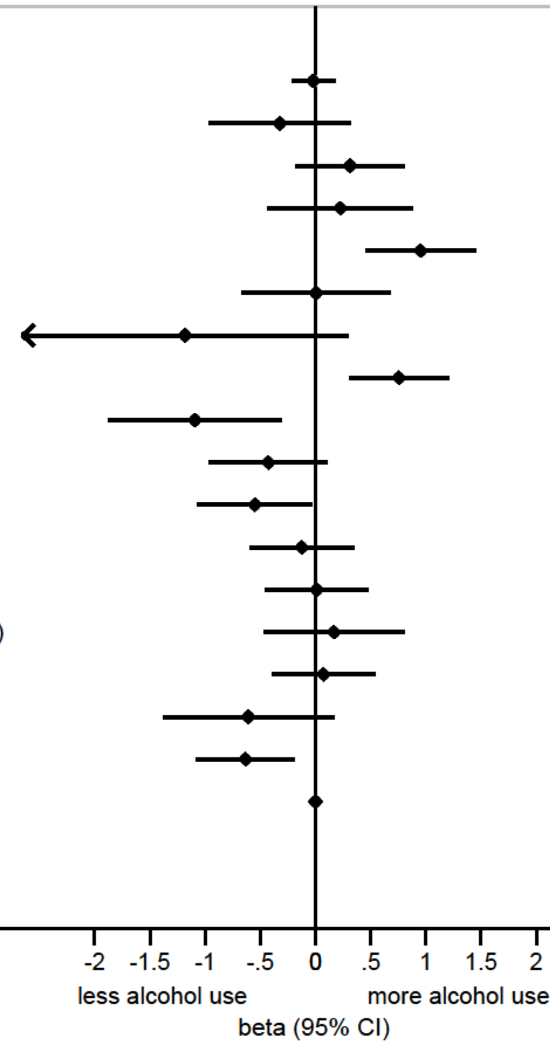


Figure 7D continued



Independent Variables	beta (95% CI)	p-value	N	Table
Control variables				
Age (10 years)	-0.02 (-0.22, 0.18)	0.838	447	4D.1
Marital status: formerly married (ref = married)	-0.32 (-0.97, 0.32)	0.328	447	4D.1
Marital status: single (ref = married)	0.31 (-0.18, 0.80)	0.213	447	4D.1
Asian ethnicity: Filipina (ref = Chinese)	0.23 (-0.43, 0.88)	0.502	447	4D.1
Asian ethnicity: Other AANHPI (ref = Chinese)	0.95 (0.45, 1.45)	0.000	447	4D.1
Survey language: Chinese (ref = English)	0.00 (-0.67, 0.68)	0.991	447	4D.1
Survey language: Tagalog (ref = English)	-1.18 (-2.65, 0.29)	0.117	447	4D.1
US-born (ref = foreign-born)	0.76 (0.30, 1.21)	0.001	447	4D.1
Education: <=high school (ref = college graduate)	-1.09 (-1.88, -0.30)	0.007	447	4D.1
Education: some college (ref = college graduate)	-0.43 (-0.96, 0.10)	0.115	447	4D.1
Employment: part time (ref = full time)	-0.55 (-1.07, -0.03)	0.039	447	4D.1
Employment: not working (ref = full time)	-0.12 (-0.60, 0.35)	0.605	447	4D.1
Homeowner (ref = non homeowner)	0.01 (-0.46, 0.48)	0.964	447	4D.1
Public/other/no insurance (ref = private insurance)	0.17 (-0.47, 0.80)	0.608	447	4D.1
High nSES (ref = low nSES)	0.07 (-0.39, 0.54)	0.760	430	4D.5
Urbanicity: non-metro/rural (ref = metro urban)	-0.61 (-1.38, 0.16)	0.123	430	4D.5
Urbanicity: metro suburb (ref = metro urban)	-0.63 (-1.08, -0.19)	0.005	430	4D.5
Years lived at current address	-0.00 (-0.03, 0.02)	0.879	430	4D.5

Figure 7E: Forest plot summary of results for fruit consumption

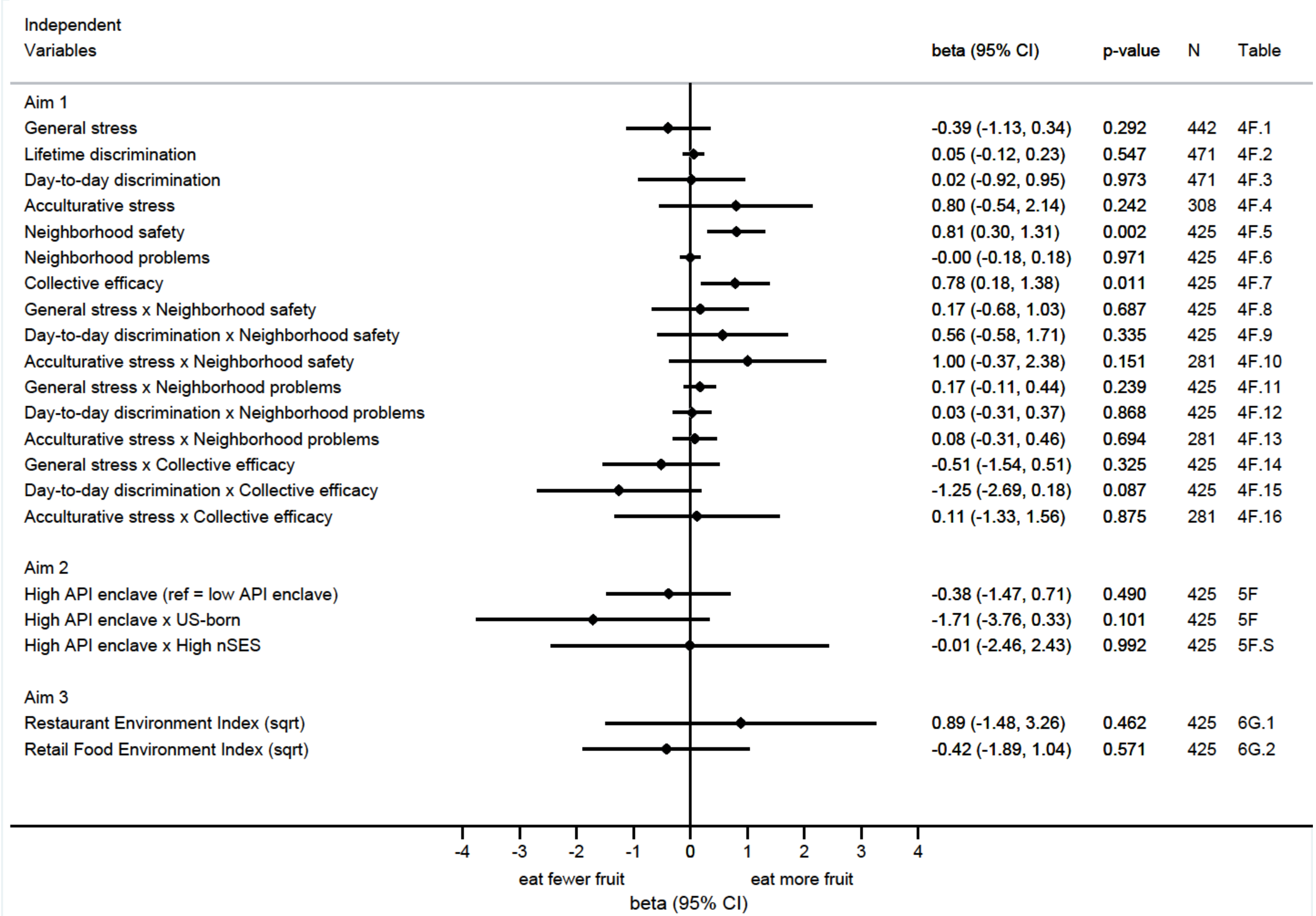


Figure 7E continued

Independent Variables	beta (95% CI)	p-value	N	Table
Control variables				
Age (10 years)	0.21 (-0.21, 0.64)	0.324	442	4F.1
Marital status: formerly married (ref = married)	-0.69 (-1.97, 0.59)	0.291	442	4F.1
Marital status: single (ref = married)	-0.76 (-1.90, 0.39)	0.196	442	4F.1
Asian ethnicity: Filipina (ref = Chinese)	-2.06 (-3.56, -0.55)	0.007	442	4F.1
Asian ethnicity: Other AANHPI (ref = Chinese)	-0.54 (-1.70, 0.63)	0.364	442	4F.1
Survey language: Chinese (ref = English)	0.36 (-1.15, 1.87)	0.641	442	4F.1
Survey language: Tagalog (ref = English)	1.27 (-0.91, 3.45)	0.253	442	4F.1
US-born (ref = foreign-born)	-0.43 (-1.53, 0.66)	0.439	442	4F.1
Education: <=high school (ref = college graduate)	-0.48 (-1.98, 1.03)	0.534	442	4F.1
Education: some college (ref = college graduate)	-0.96 (-2.13, 0.21)	0.106	442	4F.1
Employment: part time (ref = full time)	-0.47 (-1.59, 0.65)	0.408	442	4F.1
Employment: not working (ref = full time)	-0.56 (-1.65, 0.52)	0.308	442	4F.1
Homeowner (ref = non homeowner)	0.43 (-0.58, 1.44)	0.403	442	4F.1
Public/other/no insurance (ref = private insurance)	0.16 (-1.10, 1.42)	0.802	442	4F.1
High nSES (ref = low nSES)	0.54 (-0.48, 1.57)	0.299	425	4F.5
Urbanicity: non-metro/rural (ref = metro urban)	-1.87 (-4.03, 0.30)	0.091	425	4F.5
Urbanicity: metro suburb (ref = metro urban)	0.66 (-0.31, 1.64)	0.183	425	4F.5
Years lived at current address	-0.01 (-0.06, 0.05)	0.822	425	4F.5

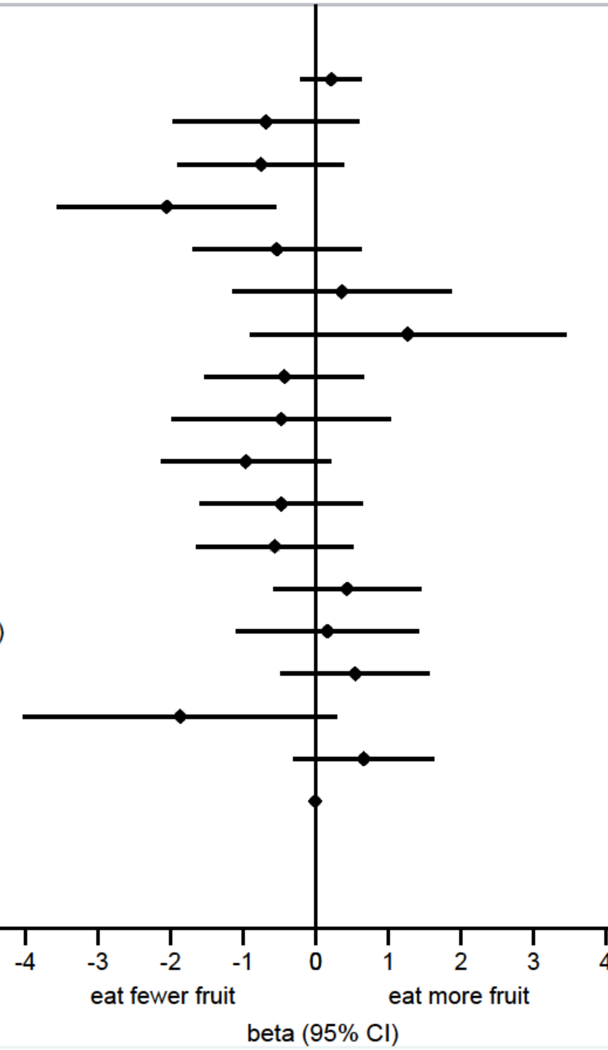


Figure 7F: Forest plot summary of results for vegetable consumption

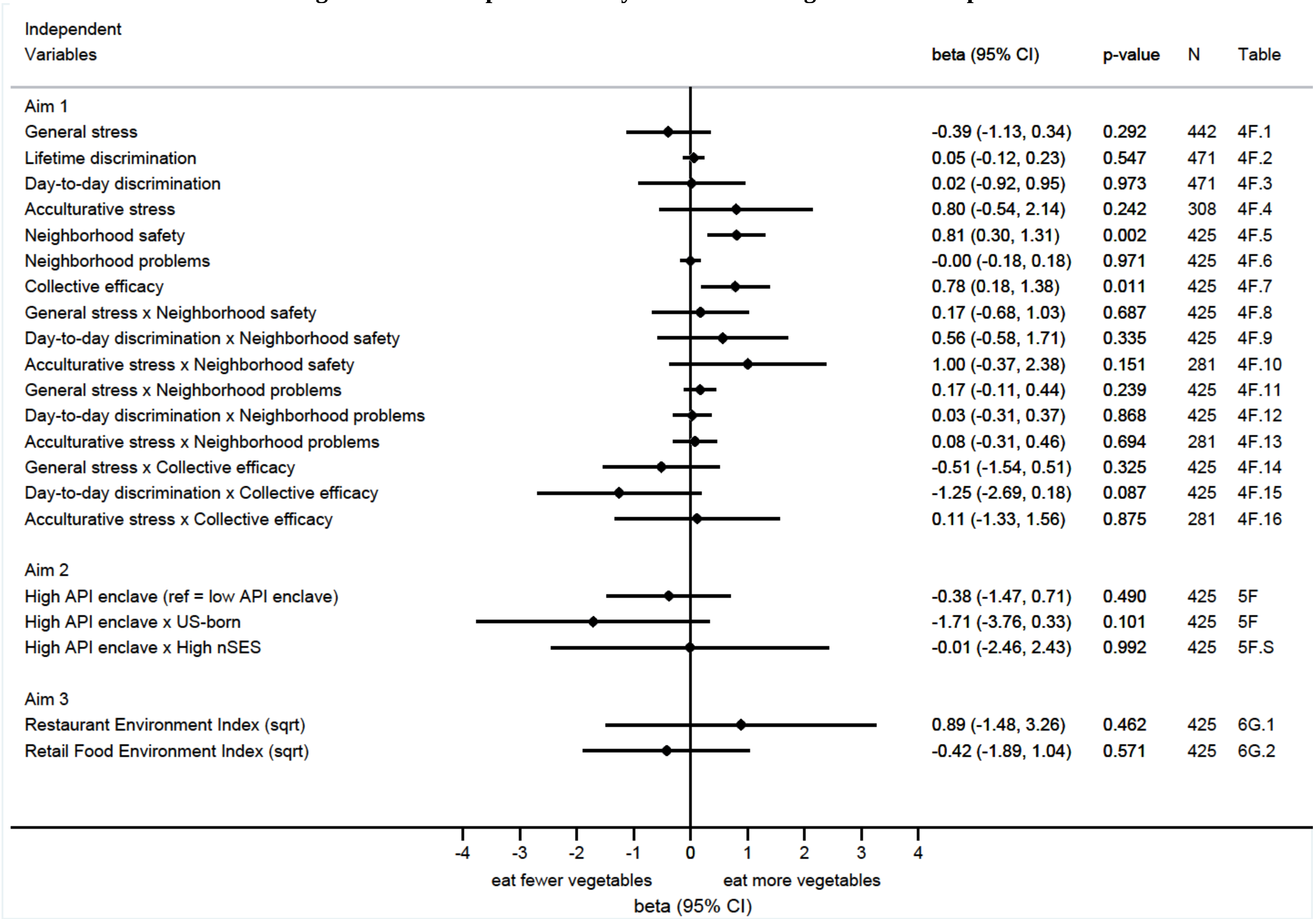


Figure 7F continued

Independent Variables	beta (95% CI)	p-value	N	Table
Control variables				
Age (10 years)	0.21 (-0.21, 0.64)	0.324	442	4F.1
Marital status: formerly married (ref = married)	-0.69 (-1.97, 0.59)	0.291	442	4F.1
Marital status: single (ref = married)	-0.76 (-1.90, 0.39)	0.196	442	4F.1
Asian ethnicity: Filipina (ref = Chinese)	-2.06 (-3.56, -0.55)	0.007	442	4F.1
Asian ethnicity: Other AANHPI (ref = Chinese)	-0.54 (-1.70, 0.63)	0.364	442	4F.1
Survey language: Chinese (ref = English)	0.36 (-1.15, 1.87)	0.641	442	4F.1
Survey language: Tagalog (ref = English)	1.27 (-0.91, 3.45)	0.253	442	4F.1
US-born (ref = foreign-born)	-0.43 (-1.53, 0.66)	0.439	442	4F.1
Education: <=high school (ref = college graduate)	-0.48 (-1.98, 1.03)	0.534	442	4F.1
Education: some college (ref = college graduate)	-0.96 (-2.13, 0.21)	0.106	442	4F.1
Employment: part time (ref = full time)	-0.47 (-1.59, 0.65)	0.408	442	4F.1
Employment: not working (ref = full time)	-0.56 (-1.65, 0.52)	0.308	442	4F.1
Homeowner (ref = non homeowner)	0.43 (-0.58, 1.44)	0.403	442	4F.1
Public/other/no insurance (ref = private insurance)	0.16 (-1.10, 1.42)	0.802	442	4F.1
High nSES (ref = low nSES)	0.54 (-0.48, 1.57)	0.299	425	4F.5
Urbanicity: non-metro/rural (ref = metro urban)	-1.87 (-4.03, 0.30)	0.091	425	4F.5
Urbanicity: metro suburb (ref = metro urban)	0.66 (-0.31, 1.64)	0.183	425	4F.5
Years lived at current address	-0.01 (-0.06, 0.05)	0.822	425	4F.5

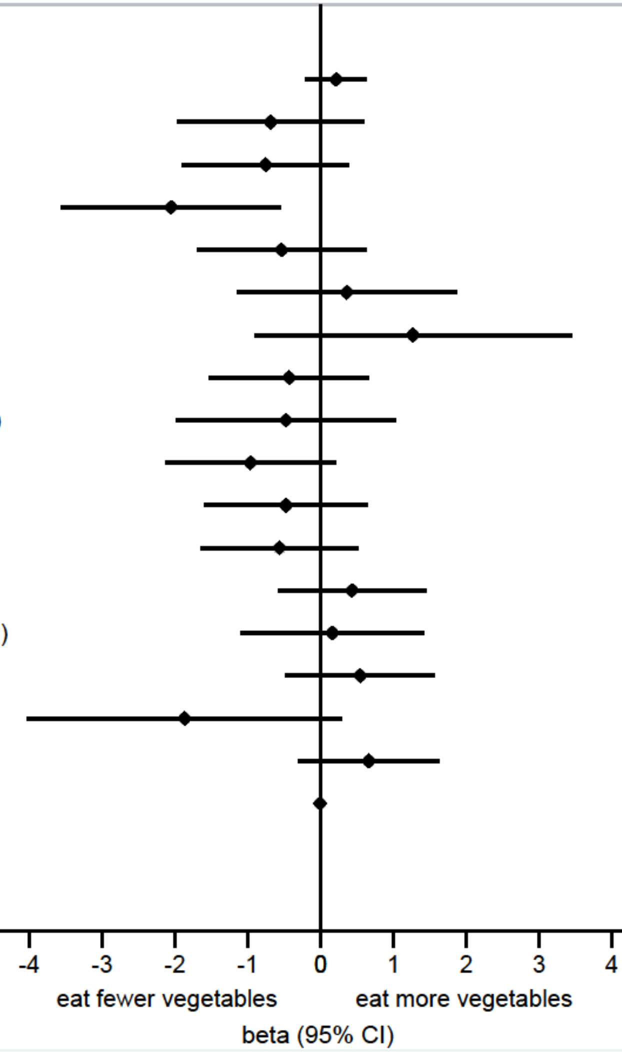


Figure 7G: Forest plot summary of results for body mass index (BMI)

Independent Variables	beta (95% CI)	p-value	N	Table
Aim 1				
General stress	0.88 (0.11, 1.64)	0.025	425	4G.1
Lifetime discrimination	0.19 (0.00, 0.38)	0.045	453	4G.2
Day-to-day discrimination	1.17 (0.20, 2.14)	0.018	453	4G.3
Acculturative stress	0.33 (-0.78, 1.44)	0.560	301	4G.4
Neighborhood safety	-0.21 (-0.90, 0.47)	0.540	410	4G.5
Neighborhood problems	0.20 (-0.03, 0.43)	0.084	410	4G.6
Collective efficacy	0.02 (-0.66, 0.70)	0.961	410	4G.7
General stress x Neighborhood safety	-0.69 (-1.56, 0.17)	0.116	410	4G.8
Day-to-day discrimination x Neighborhood safety	-0.01 (-1.57, 1.55)	0.992	410	4G.9
Acculturative stress x Neighborhood safety	0.07 (-1.16, 1.31)	0.906	275	4G.10
General stress x Neighborhood problems	0.21 (-0.03, 0.45)	0.086	410	4G.11
Day-to-day discrimination x Neighborhood problems	0.03 (-0.46, 0.52)	0.906	410	4G.12
Acculturative stress x Neighborhood problems	-0.26 (-0.60, 0.09)	0.142	275	4G.13
General stress x Collective efficacy	-0.58 (-1.50, 0.34)	0.214	410	4G.14
Day-to-day discrimination x Collective efficacy	0.34 (-1.14, 1.82)	0.652	410	4G.15
Acculturative stress x Collective efficacy	-0.77 (-2.17, 0.63)	0.277	275	4G.16
Aim 2				
High API enclave (ref = low API enclave)	-0.52 (-1.66, 0.61)	0.367	410	5G
High API enclave x US-born	-2.12 (-4.70, 0.46)	0.108	410	5G
High API enclave x High nSES	4.93 (0.52, 9.35)	0.029	410	5G.S
Aim 3				
Restaurant Environment Index (sqrt)	0.58 (-1.81, 2.97)	0.634	410	6H.1
Retail Food Environment Index (sqrt)	-0.30 (-1.64, 1.03)	0.654	410	6H.2
Number of recreational facilities (sqrt)	-0.20 (-0.65, 0.25)	0.379	410	6H.3
Number of parks (sqrt)	0.41 (-0.24, 1.07)	0.213	410	6H.4
Alpha	3.90 (-1.47, 9.27)	0.154	410	6H.5
Gamma	5.72 (-2.29, 13.73)	0.161	410	6H.6
Traffic density (sqrt)	-0.06 (-1.10, 0.97)	0.903	410	6H.7

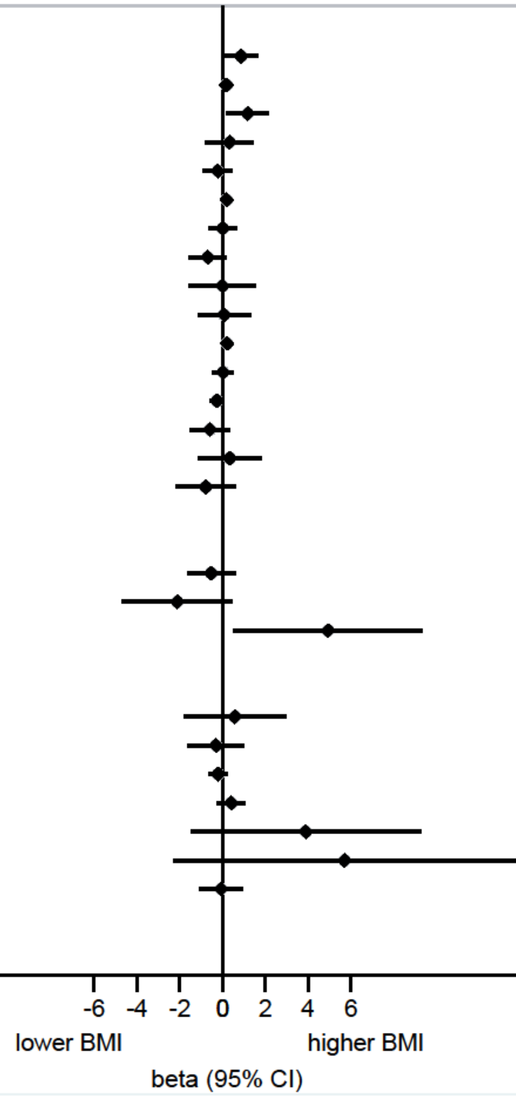
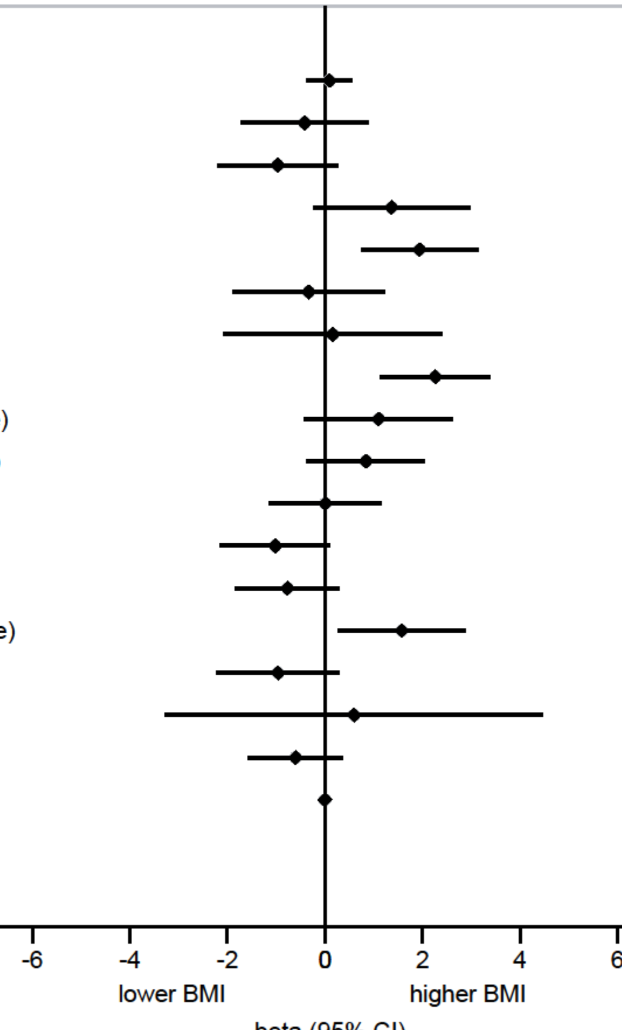


Figure 7G continued

Independent Variables	beta (95% CI)	p-value	N	Table
Control variables				
Age (10 years)	0.09 (-0.38, 0.56)	0.699	425	4G.1
Marital status: formerly married (ref = married)	-0.42 (-1.73, 0.89)	0.533	425	4G.1
Marital status: single (ref = married)	-0.97 (-2.20, 0.26)	0.123	425	4G.1
Asian ethnicity: Filipina (ref = Chinese)	1.37 (-0.23, 2.97)	0.093	425	4G.1
Asian ethnicity: Other AANHPI (ref = Chinese)	1.94 (0.75, 3.14)	0.002	425	4G.1
Survey language: Chinese (ref = English)	-0.33 (-1.88, 1.22)	0.675	425	4G.1
Survey language: Tagalog (ref = English)	0.16 (-2.09, 2.41)	0.887	425	4G.1
US-born (ref = foreign-born)	2.27 (1.13, 3.40)	0.000	425	4G.1
Education: <=high school (ref = college graduate)	1.10 (-0.43, 2.63)	0.159	425	4G.1
Education: some college (ref = college graduate)	0.84 (-0.37, 2.05)	0.171	425	4G.1
Employment: part time (ref = full time)	0.01 (-1.15, 1.17)	0.989	425	4G.1
Employment: not working (ref = full time)	-1.02 (-2.15, 0.11)	0.076	425	4G.1
Homeowner (ref = non homeowner)	-0.77 (-1.83, 0.30)	0.158	425	4G.1
Public/other/no insurance (ref = private insurance)	1.58 (0.28, 2.88)	0.018	425	4G.1
High nSES (ref = low nSES)	-0.96 (-2.22, 0.30)	0.133	410	4G.5
Urbanicity: non-metro/rural (ref = metro urban)	0.60 (-3.27, 4.47)	0.761	410	4G.5
Urbanicity: metro suburb (ref = metro urban)	-0.60 (-1.57, 0.37)	0.227	410	4G.5
Years lived at current address	0.00 (-0.04, 0.05)	0.929	410	4G.5



APPENDICES

Appendix 1. Age-Adjusted[a] Distribution of Selected Socio-Demographic Characteristics of Total Control Sample (n=483) Compared to CHIS Data, Asian Community Health Initiative Study, 2013-2014[b].
Table copied with permission from Wong et al. (2016a).

	All participants[c]			
	Controls (n=483)		CHIS	
	%	95% CI	%	95% CI
Age at interview, years				
20-39	17.0	13.5, 20.5		
40-59	67.3	63.1, 71.6		
≥60	15.7	12.7, 18.6		
Nativity				
US-born	34.8	30.3, 39.3	32.6	27.0, 38.3
Foreign-born	65.2	60.7, 69.7	67.4	61.7, 73.0
Annual household income				
<$30,000	24.7	20.2, 29.2	18.0	13.7, 22.3
$30,000– $999,999	33.4	28.8, 38.0	40.9	35.1, 46.7
≥$100,000	41.9	36.9, 47.0	41.2	35.3, 47.0
Education completed				
High school or less	16.9	13.4, 20.5	17.6	13.4, 21.8
Some college, vocational school, AA or AS degree	19.3	15.7, 22.9	15.5	10.8, 20.1
College graduate or higher	63.7	59.2, 68.2	66.9	61.4, 72.5
Employment status				
Full-time	46.4	41.7, 51.0	58.4	52.7, 64.1
Part-time	21.8	18.0, 25.7	11.5	7.8, 15.2
Not working[e]	31.8	27.5, 36.1	30.1	25.0, 35.3
English proficiency[f]				
Poor	28.2	22.5, 33.9	18.3	14.0, 22.6
OK / good	48.0	41.7, 54.3	35.5	28.7, 42.3
Very good	23.8	18.5, 29.0	46.2	39.2, 53.3
Health insurance				
Any public	25.1	21.1, 29.0	14.1	10.4, 17.9
Private	70.8	66.6, 74.9	78.1	73.6, 82.6
None	3.7	2.0, 5.3	7.8	5.0, 10.6
Other[g]	0.5	0.0, 1.0		
Usual source of care				
Doctor's office or HMO	75.6	71.7, 79.6	61.3	55.6, 67.0
Clinic (hospital,	18.7	15.1, 22.3	24.9	19.9, 29.9

community, neighborhood)				
Other[h], not one place or none	5.7	3.6, 7.7	13.8	9.4, 18.2
Marital status				
Married or living with partner	68.3	63.9, 72.6	64.5	58.9, 70.0
Divorced, separated or widowed	12.9	9.9, 15.8	10.8	8.0, 13.6
Single / never married	18.9	15.2, 22.6	24.8	19.5, 30.0
Household size				
1 person	14.5	11.3, 17.8	9.61	6.8, 12.4
2-3 persons	51.1	46.4, 55.8	44.5	38.7, 50.4
4 or more persons	34.4	29.9, 38.8	45.9	40.0, 51.7
Home ownership				
Yes	63.9	59.5, 68.4	66.5	63.3, 73.8
No	36.1	31.6, 40.5	31.5	26.2, 36.7
Body mass index[i]				
<25	69.6	65.0, 74.2	73.6	68.2, 78.9
25-29.9	23.1	18.9, 27.3	19.3	14.5, 24.1
≥30	7.3	4.8, 9.8	7.1	4.0, 10.2
Screening mammogram[j]				
Yes	79.8	76.1, 83.5	70.0	63.8, 76.2
No	20.2	16.5, 23.9	30.0	23.8 36.2

Abbreviations: AA, Associate of Arts; AANHPI, Asian American, Native Hawaiian, and Pacific Islander; AS, Associate of Science; CHIS, California Health Interview Survey; CI, confidence interval; HMO, health maintenance organization.

[a] Distributions (except age at interview) for controls were adjusted to the age distribution of the general ethnic-specific California population residing in study catchment area.

[b] Table values are column percentages based on non-missing values only; percentages may not sum to 100% due to rounding.

[c] Other AANHPI (non-Chinese and non-Filipina) estimates were calculated including only respondents who took the CHIS in English.

[d] Statistically unstable; has not met criteria for minimum number of respondents needed.

[e] Responses include unemployed, retired, on disability, homemaker, student, and volunteer.

[f] Limited to participants who spoke a non-English language at home (controls, n=267).

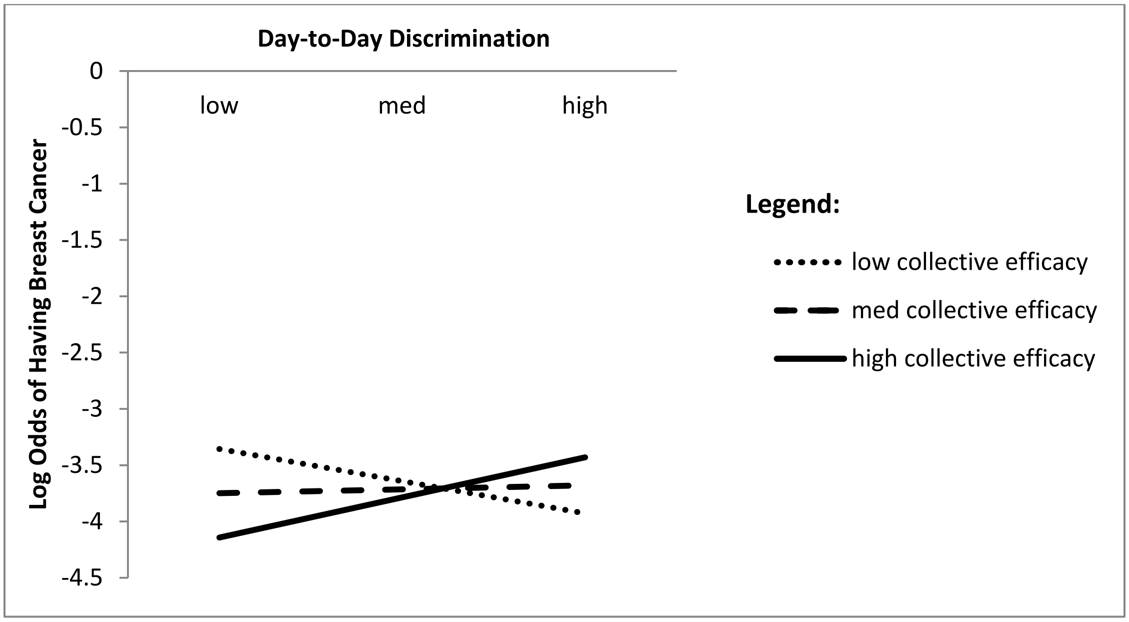
[g] Responses include single-service plan (e.g. dental, vision, prescriptions).

[h] Responses include acupuncturist, websites, and self.

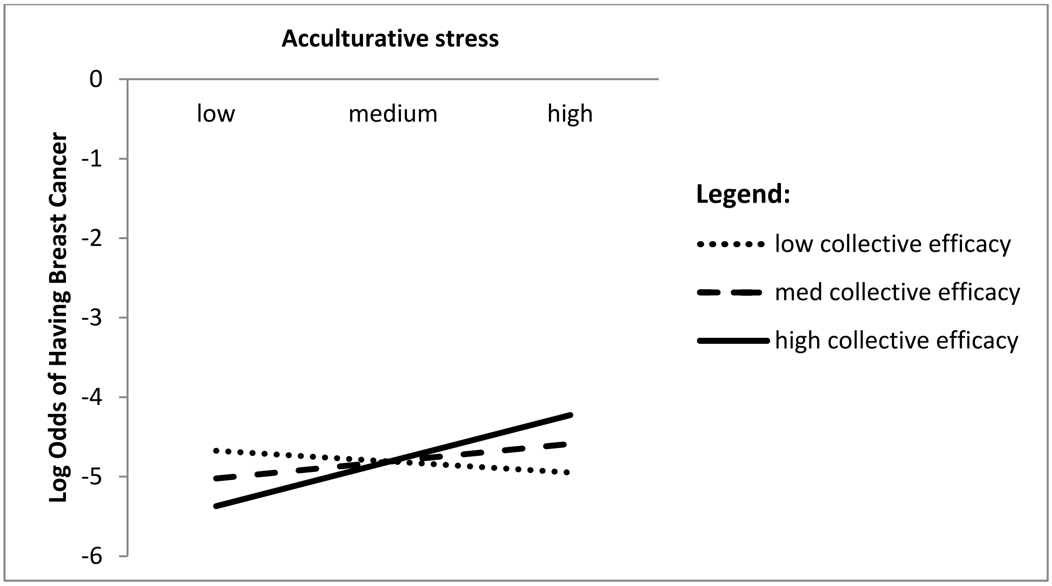
[i] Weight (kg)/height (m)^2.

[j] CHIS respondents limited to females ≥30 years of age.

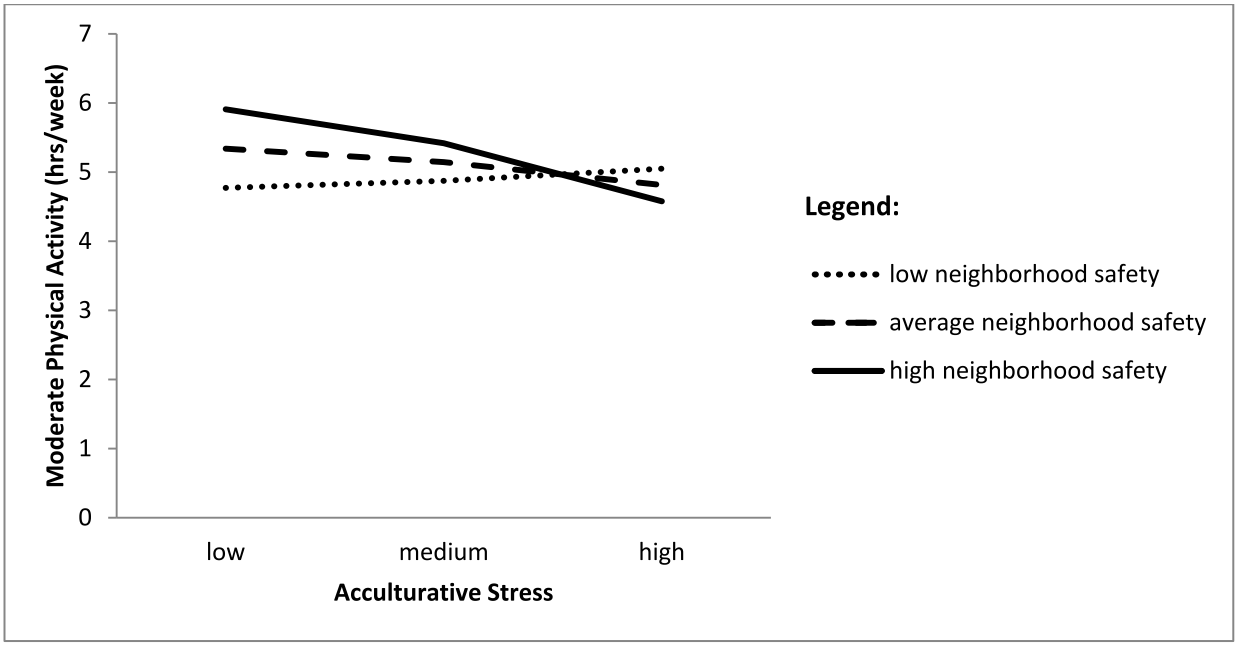
Appendix 2. Aim 1, Hypothesis 3. The association between day-to-day discrimination and having breast cancer, moderated by collective efficacy. (N=546)



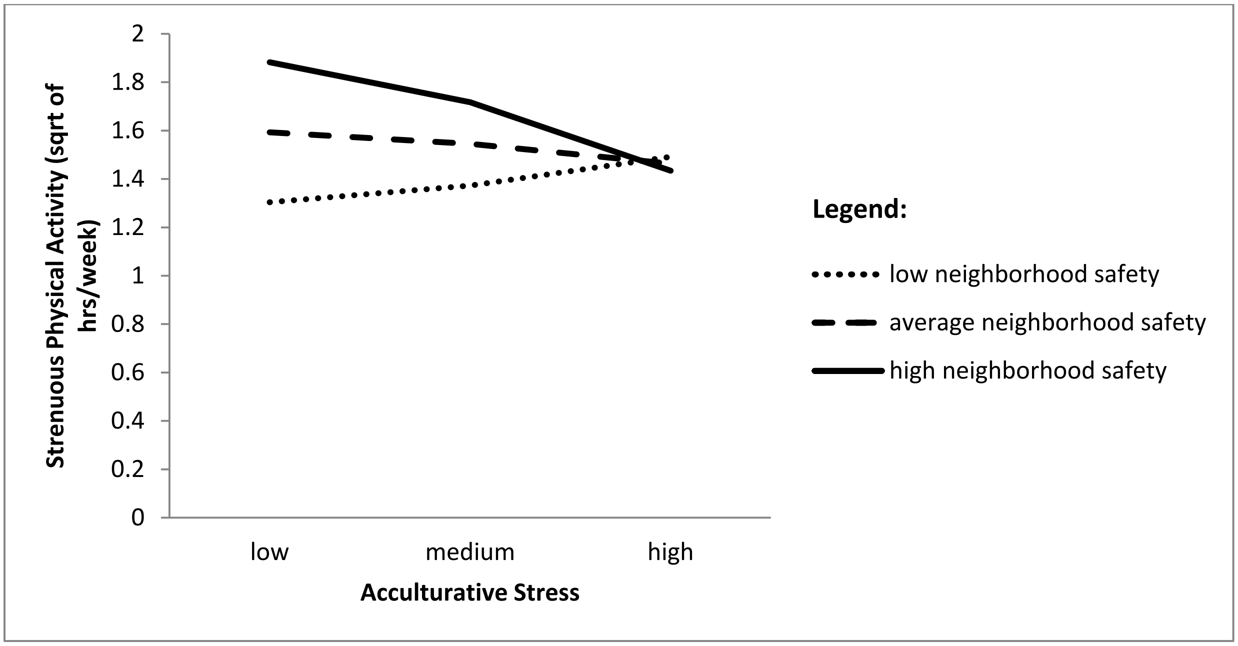
Appendix 3. Aim 1, Hypothesis 3. The association between acculturative stress and having breast cancer, moderated by collective efficacy.
(N=380)



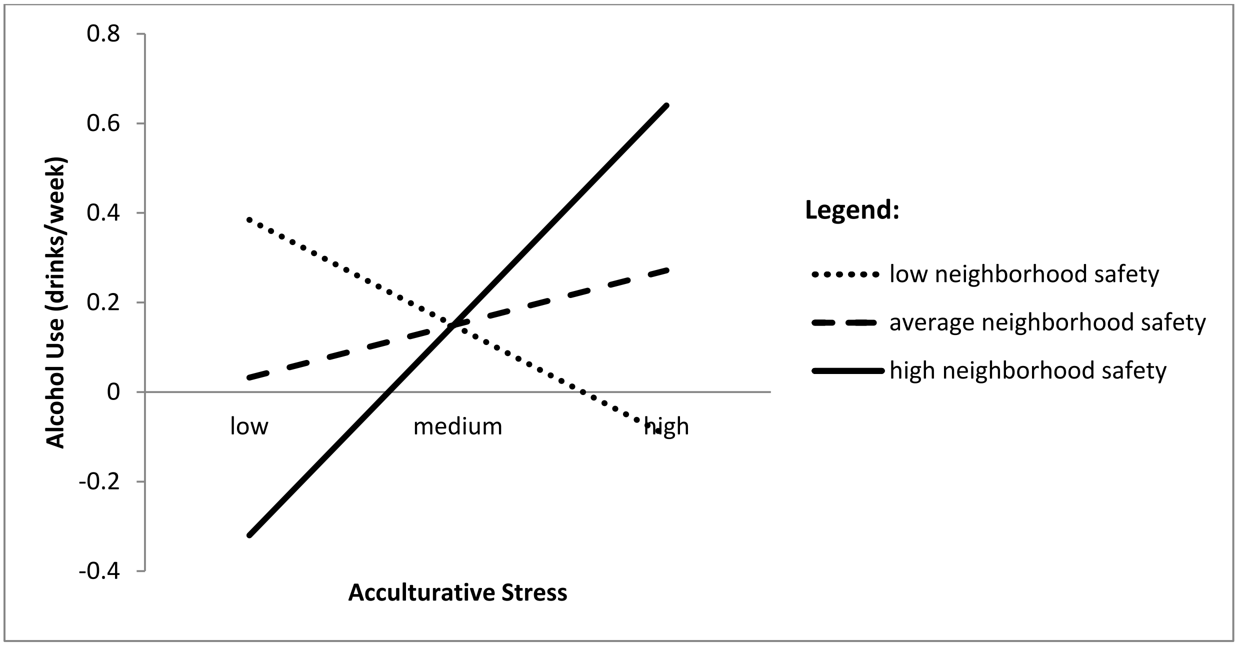
Appendix 4. Aim 1, Hypothesis 3. The association between acculturative stress and moderate physical activity, moderated by neighborhood safety. (N=275)



Appendix 5. Aim 1, Hypothesis 3. The association between acculturative stress and strenuous physical activity, moderated by neighborhood safety. (N=268)



Appendix 6. Aim 1, Hypothesis 3. The association between acculturative stress and alcohol use, moderated by neighborhood safety.
(N=284)



REFERENCES

Ainsworth, B. E., Caspersen, C. J., Matthews, C. E., Mâsse, L. C., Baranowski, T., & Zhu, W. (2012). Recommendations to Improve the Accuracy of Estimates of Physical Activity Derived from Self Report. *J Phys Act Health, 9*(0 1), S76-S84.

Akresh, I. R., Do, D. P., & Frank, R. (2016). Segmented assimilation, neighborhood disadvantage, and Hispanic immigrant health. *Social Science & Medicine, 149*, 114-121. doi: http://dx.doi.org/10.1016/j.socscimed.2015.12.013

Allen, M. L., Elliott, M. N., Morales, L. S., Diamant, A. L., Hambarsoomian, K., & Schuster, M. A. (2007). Adolescent Participation in Preventive Health Behaviors, Physical Activity, and Nutrition: Differences Across Immigrant Generations for Asians and Latinos Compared With Whites. *American Journal of Public Health, 97*(2), 337-343. doi: 10.2105/ajph.2005.076810

An, R., & Sturm, R. (2012). School and Residential Neighborhood Food Environment and Diet Among California Youth. *American Journal of Preventive Medicine, 42*(2), 129-135. doi: http://dx.doi.org/10.1016/j.amepre.2011.10.012

Anderson, W. F., Rosenberg, P. S., Menashe, I., Mitani, A., & Pfeiffer, R. M. (2008). Age-Related Crossover in Breast Cancer Incidence Rates Between Black and White Ethnic Groups. *JNCI: Journal of the National Cancer Institute, 100*(24), 1804-1814. doi: 10.1093/jnci/djn411

Aneshensel, C. S. (2013). *Theory Based Data Analysis* (2nd ed.). Thousand Oaks, California: SAGE Publications, Inc.

Antonova, L., Aronson, K., & Mueller, C. R. (2011). Stress and breast cancer: from epidemiology to molecular biology. *Breast Cancer Res, 13*(2), 208.

Arvidsson, D., Kawakami, N., Ohlsson, H., & Sundquist, K. (2012). Physical activity and concordance between objective and perceived walkability. *Med Sci Sports Exerc, 44*(2), 280-287.

Aune, D., Chan, D. S. M., Vieira, A. R., Rosenblatt, D. A. N., Vieira, R., Greenwood, D. C., & Norat, T. (2012). Fruits, vegetables and breast cancer risk: a systematic review and meta-analysis of prospective studies. *Breast Cancer Res Treat, 134*(2), 479-493. doi: 10.1007/s10549-012-2118-1

Babey, S. H., Diamant, A. L., Hastert, T. A., & Harvey, S. (2008). Designed for disease: the link between local food environments and obesity and diabetes. *UCLA Center for Health Policy Research*.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology, 51*(6), 1173.

Basterra-Gortari, F. J., Bes-Rastrollo, M., Forga, L., Martínez, J. A., & Martinez-Gonzalez, M. A. (2006). *Validity of self-reported body mass index in the National Health Survey*.

Bécares, L., Nazroo, J., & Stafford, M. (2011). The ethnic density effect on alcohol use among ethnic minority people in the UK. [10.1136/jech.2009.087114]. *Journal of Epidemiology and Community Health, 65*(1), 20-25. doi: 10.1136/jech.2009.087114

Bennett, D. A. (2001). How can I deal with missing data in my study? *Aust N Z J Public Health, 25*(5), 464-469.

Berkman, L. F., & Glass, T. (2000). Social integration, social networks, social support, and health. *Social epidemiology, 1*, 137-173.

Berrigan, D., & McKinno, R. A. (2008). Built Environment and Health. *Preventive Medicine, 47*(3), 239-240. doi: 10.1016/j.ypmed.2008.07.010
Black, J. L., & Macinko, J. (2008). Neighborhoods and obesity. *Nutrition Reviews, 66*(1), 2-20. doi: 10.1111/j.1753-4887.2007.00001.x
Booth, G. L. (2016). Built environment and health. *Canada Communicable Disease Report, 42*(10), 205.
Brewer, M., & Kimbro, R. T. (2014). Neighborhood context and immigrant children's physical activity. *Social Science & Medicine, 116*, 1-9. doi: http://dx.doi.org/10.1016/j.socscimed.2014.06.022
Bronfenbrenner, U. (1997). Ecological models of human development. *Readings on the development of children, 1993*, 37-43.
Brown, B. B., Smith, K. R., Hanson, H., Fan, J. X., Kowaleski-Jones, L., & Zick, C. D. (2013). Neighborhood Design for Walking and Biking: Physical Activity and Body Mass Index. *American Journal of Preventive Medicine, 44*(3), 231-238. doi: http://dx.doi.org/10.1016/j.amepre.2012.10.024
Brownson, R. C., Baker, E. A., Housemann, R. A., Brennan, L. K., & Bacak, S. J. (2001). Environmental and Policy Determinants of Physical Activity in the United States. *American Journal of Public Health, 91*(12), 1995-2003. doi: 10.2105/ajph.91.12.1995
Bryden, A., Roberts, B., McKee, M., & Petticrew, M. (2012). A systematic review of the influence on alcohol use of community level availability and marketing of alcohol. *Health & Place, 18*(2), 349-357. doi: http://dx.doi.org/10.1016/j.healthplace.2011.11.003
Burchfield, K. B., & Silver, E. (2013). Collective efficacy and crime in Los Angeles neighborhoods: Implications for the Latino paradox. *Sociological Inquiry, 83*(1), 154-176.
Cameron, A. C., & Trivedi, P. K. (1998). *Regression Analysis of Count Data*. New York: Cambridge Press.
Carlson, J. A., Sallis, J. F., Conway, T. L., Saelens, B. E., Frank, L. D., Kerr, J., . . . King, A. C. (2012). Interactions between psychosocial and built environment factors in explaining older adults' physical activity. *Preventive Medicine, 54*(1), 68-73. doi: http://dx.doi.org/10.1016/j.ypmed.2011.10.004
Carpiano, R. M. (2006). Toward a neighborhood resource-based theory of social capital for health: Can Bourdieu and sociology help? *Social Science & Medicine, 62*(1), 165-175. doi: http://dx.doi.org/10.1016/j.socscimed.2005.05.020
Carroll-Scott, A., Gilstad-Hayden, K., Rosenthal, L., Peters, S. M., McCaslin, C., Joyce, R., & Ickovics, J. R. (2013). Disentangling neighborhood contextual associations with child body mass index, diet, and physical activity: The role of built, socioeconomic, and social environments. *Social Science & Medicine, 95*, 106-114. doi: http://dx.doi.org/10.1016/j.socscimed.2013.04.003
Casagrande, S. S., Gittelsohn, J., Zonderman, A. B., Evans, M. K., & Gary-Webb, T. L. (2011). Association of Walkability With Obesity in Baltimore City, Maryland. *American Journal of Public Health, 101*(S1), S318-S324. doi: 10.2105/ajph.2009.187492
Caspi, C. E., Sorensen, G., Subramanian, S. V., & Kawachi, I. (2012). The local food environment and diet: A systematic review. *Health & Place, 18*(5), 1172-1187. doi: http://dx.doi.org/10.1016/j.healthplace.2012.05.006
Centers for Disease Control and Prevention. (2014, May 6, 2014). Breast Cancer: What Are the Risk Factors? Retrieved December 7, 2014

Cerin, E., Lee, K.-y., Barnett, A., Sit, C. H. P., Cheung, M.-c., & Chan, W.-m. (2013). Objectively-measured neighborhood environments and leisure-time physical activity in Chinese urban elders. *Preventive Medicine, 56*(1), 86-89. doi: http://dx.doi.org/10.1016/j.ypmed.2012.10.024

Chae, D. H., Takeuchi, D. T., Barbeau, E. M., Bennett, G. G., Lindsey, J., & Krieger, N. (2008). Unfair treatment, racial/ethnic discrimination, ethnic identification, and smoking among Asian Americans in the National Latino and Asian American Study. *American Journal of Public Health, 98*(3), 485.

Chakraborty, J., Maantay, J. A., & Brender, J. D. (2011). Disproportionate Proximity to Environmental Health Hazards: Methods, Models, and Measurement. *American Journal of Public Health, 101*(S1), S27-S36. doi: 10.2105/ajph.2010.300109

Cheraghi, Z., Poorolajal, J., Hashem, T., Esmailnasab, N., & Doosti Irani, A. (2012). Effect of Body Mass Index on Breast Cancer during Premenopausal and Postmenopausal Periods: A Meta-Analysis. *PLoS ONE, 7*(12), e51446. doi: 10.1371/journal.pone.0051446

Chida, Y., Hamer, M., Wardle, J., & Steptoe, A. (2008). Do stress-related psychosocial factors contribute to cancer incidence and survival? [10.1038/ncponc1134]. *Nat Clin Prac Oncol, 5*(8), 466-475. doi: http://www.nature.com/ncponc/journal/v5/n8/suppinfo/ncponc1134_S1.html

Chlebowski, R. T., Kuller, L. H., Prentice, R. L., Stefanick, M. L., Manson, J. E., Gass, M., . . . Sarto, G. E. (2009). Breast cancer after use of estrogen plus progestin in postmenopausal women. *New England Journal of Medicine, 360*(6), 573-587.

Clougherty, J. E., Levy, J. I., Kubzansky, L. D., Ryan, P. B., Suglia, S. F., Canner, M. J., & Wright, R. J. (2007). Synergistic effects of traffic-related air pollution and exposure to violence on urban asthma etiology. *Environmental health perspectives, 115*(8), 1140.

Cohen, D. A., McKenzie, T. L., Sehgal, A., Williamson, S., Golinelli, D., & Lurie, N. (2007). Contribution of Public Parks to Physical Activity. *American Journal of Public Health, 97*(3), 509-514. doi: 10.2105/ajph.2005.072447

Cohen, J. (1968). Multiple regression as a general data-analytic system. [doi:10.1037/h0026714]. *70,* 426-443. doi: 10.1037/h0026714

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of health and social behavior*, 385-396.

Cohen, S., & Williamson, G. (1988). Perceeived Stress in a Probability Sample of the United States. In S. Spacapan & S. Oskamp (Eds.), *The Social Psychology of Health*. Newbury Park, CA: Sage.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological bulletin, 98*(2), 310-357. doi: 10.1037/0033-2909.98.2.310

Collaborative Group on Hormonal Factors in Breast, C. (2001). Familial breast cancer: collaborative reanalysis of individual data from 52 epidemiological studies including 58,209 women with breast cancer and 101,986 women without the disease. *Lancet, 358*(9291), 1389-1399. doi: 10.1016/s0140-6736(01)06524-2

Collaborative Group on Hormonal Factors in Breast Cancer. (2012). Menarche, menopause, and breast cancer risk: individual participant meta-analysis, including 118 964 women with breast cancer from 117 epidemiological studies. *The lancet oncology, 13*(11), 1141.

Conklin, A. I., Forouhi, N. G., Surtees, P., Khaw, K.-T., Wareham, N. J., & Monsivais, P. (2014). Social relationships and healthful dietary behaviour: Evidence from over-50s in

the EPIC cohort, UK. *Social Science & Medicine, 100*, 167-175. doi: http://dx.doi.org/10.1016/j.socscimed.2013.08.018
Craddock, C. S., & Folse, K. A. (2016). Psychological Stress of Hispanics Living on the Border. [journal article]. *Journal of immigrant and minority health, 18*(4), 856-863. doi: 10.1007/s10903-015-0295-9
Dairkee, S. H., Seok, J., Champion, S., Sayeed, A., Mindrinos, M., Xiao, W., . . . Goodson, W. H. (2008). Bisphenol A Induces a Profile of Tumor Aggressiveness in High-Risk Cells from Breast Cancer Patients. [10.1158/0008-5472.CAN-07-6526]. *Cancer Research, 68*(7), 2076.
Dallago, L., Perkins, D. D., Santinello, M., Boyce, W., Molcho, M., & Morgan, A. (2009). Adolescent Place Attachment, Social Capital, and Perceived Safety: A Comparison of 13 Countries. *American journal of community psychology, 44*(1-2), 148-160. doi: 10.1007/s10464-009-9250-z
Danaei, G., Vander Hoorn, S., Lopez, A. D., Murray, C. J. L., & Ezzati, M. (2005). Causes of cancer in the world: comparative risk assessment of nine behavioural and environmental risk factors. *The Lancet, 366*(9499), 1784-1793. doi: http://dx.doi.org/10.1016/S0140-6736(05)67725-2
Deapen, D., Liu, L., Perkins, C., Bernstein, L., & Ross, R. K. (2002). Rapidly rising breast cancer incidence rates among Asian-American women. *International Journal of Cancer, 99*(5), 747-750. doi: 10.1002/ijc.10415
DeSantis, C., Ma, J., Bryan, L., & Jemal, A. (2014). Breast cancer statistics, 2013. *CA: A Cancer Journal for Clinicians, 64*(1), 52-62. doi: 10.3322/caac.21203
Diez Roux, A. V., & Mair, C. (2010). Neighborhoods and health. *Annals of the New York Academy of Sciences, 1186*(1), 125-145.
Dill, J. (2004). *Measuring network connectivity for bicycling and walking.* Paper presented at the 83rd Annual Meeting of the Transportation Research Board, Washington, DC.
Ding, D., & Gebel, K. (2012). Built environment, physical activity, and obesity: What have we learned from reviewing the literature? *Health & Place, 18*(1), 100-105. doi: http://dx.doi.org/10.1016/j.healthplace.2011.08.021
Do, D. P., Dubowitz, T., Bird, C. E., Lurie, N., Escarce, J. J., & Finch, B. K. (2007). Neighborhood context and ethnicity differences in body mass index: A multilevel analysis using the NHANES III survey (1988–1994). *Economics & Human Biology, 5*(2), 179-203. doi: http://dx.doi.org/10.1016/j.ehb.2007.03.006
Dong, S., Terasaka, S., & Kiyama, R. (2011). Bisphenol A induces a rapid activation of Erk1/2 through GPR30 in human breast cancer cells. *Environmental pollution, 159*(1), 212-218.
Dong, Y., & Peng, C.-Y. J. (2013). Principled missing data methods for researchers. *SpringerPlus, 2*, 222. doi: 10.1186/2193-1801-2-222
Dubowitz, T., Subramanian, S. V., Acevedo-Garcia, D., Osypuk, T. L., & Peterson, K. E. (2008). Individual and Neighborhood Differences in Diet Among Low-Income Foreign and U.S.-Born Women. *Women's Health Issues, 18*(3), 181-190. doi: http://dx.doi.org/10.1016/j.whi.2007.11.001
Duijts, S. F. A., Zeegers, M. P. A., & Borne, B. V. (2003). The association between stressful life events and breast cancer risk: A meta-analysis. *International Journal of Cancer, 107*(6), 1023-1029. doi: 10.1002/ijc.11504

Duncan, D. T., Aldstadt, J., Whalen, J., Melly, S. J., & Gortmaker, S. L. (2011). Validation of Walk Score® for estimating neighborhood walkability: An analysis of four US metropolitan areas. *Int J Environ Res Public Health, 8*(11), 4160-4179.

Dyrstad, S. M., Hansen, B. H., Holme, I. M., & Anderssen, S. A. (2014). Comparison of self-reported versus accelerometer-measured physical activity. *Med Sci Sports Exerc, 46*(1), 99-106.

Elder, G. H., Jr. (1998). The Life Course as Developmental Theory. *Child Development, 69*(1), 1-12.

Eliassen, A., Colditz, G. A., Rosner, B., Willett, W. C., & Hankinson, S. E. (2006). Adult weight change and risk of postmenopausal breast cancer. *JAMA, 296*(2), 193-201. doi: 10.1001/jama.296.2.193

Emsley, R., & Liu, H. (2013). PARAMED: Stata module to perform causal mediation analysis using parametric regression models. *Statistical Software Components*.

Eschbach, K., Mahnken, J. D., & Goodwin, J. S. (2005). Neighborhood composition and incidence of cancer among Hispanics in the United States. *Cancer, 103*(5), 1036-1044. doi: 10.1002/cncr.20885

Ferlay, J., Soerjomataram, I., Ervik, M., Dikshit, R., Eser, S., Mathers, C., . . . Bray, F. (2014). GLOBOCAN 2012 v1.1, Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 Retrieved Jan. 16, 2015, from http://globocan.iarc.fr/

Fernandez, S. V., & Russo, J. (2009). Estrogen and Xenoestrogens in Breast Cancer. *Toxicologic Pathology, 38*(1), 110-122. doi: 10.1177/0192623309354108

Fletcher, R. H., Fletcher, S. W., & Fletcher, G. S. (2012). *Clinical epidemiology: the essentials*: Lippincott Williams & Wilkins.

Ford, D., Easton, D., Stratton, M., Narod, S., Goldgar, D., Devilee, P., . . . Chang-Claude, J. (1998). Genetic heterogeneity and penetrance analysis of the BRCA1 and BRCA2 genes in breast cancer families. *The American Journal of Human Genetics, 62*(3), 676-689.

Fox, K. R. (1999). The influence of physical activity on mental well-being. [10.1017/S1368980099000567]. *Public Health Nutrition, 2*(Supplement 3a), 411-418.

Frank, R., Cerda, M., & Rendon, M. (2007). Barrios and burbs: residential context and health-risk behaviors among Angeleno adolescents. *Journal of health and social behavior, 48*(3), 283-300.

Franzini, L., Taylor, W., Elliott, M. N., Cuccaro, P., Tortolero, S. R., Janice Gilliland, M., . . . Schuster, M. A. (2010). Neighborhood characteristics favorable to outdoor physical activity: Disparities by socioeconomic and racial/ethnic composition. *Health & Place, 16*(2), 267-274. doi: http://dx.doi.org/10.1016/j.healthplace.2009.10.009

Gaudet, M. M., Gapstur, S. M., Sun, J., Diver, W. R., Hannan, L. M., & Thun, M. J. (2013). Active Smoking and Breast Cancer Risk: Original Cohort Data and Meta-Analysis. *J Natl Cancer Inst*. doi: 10.1093/jnci/djt023

Gee, G. C., & Ford, C. L. (2011). Structural racism and health inequities. *Du Bois Review: Social Science Research on Race, 8*(01), 115-132.

Gee, G. C., & Payne-Sturges, D. C. (2004). Environmental health disparities: a framework integrating psychosocial and environmental concepts. *Environ Health Perspect, 112*(17), 1645-1653.

Gee, G. C., & Ro, A. (2009). Racism and discrimination. *Asian American communities and health: Context, research, policy, and action*, 364-402.

Gee, G. C., Ro, A., Shariff-Marco, S., & Chae, D. (2009). Racial discrimination and health among Asian Americans: evidence, assessment, and directions for future research. *Epidemiologic reviews*, *31*(1), 130-151.

Geronimus, A. T. (1996). Black/white differences in the relationship of maternal age to birthweight: a population-based test of the weathering hypothesis. *Soc Sci Med*, *42*(4), 589-597.

Geronimus, A. T., Hicken, M., Keene, D., & Bound, J. (2006). "Weathering" and age patterns of allostatic load scores among blacks and whites in the United States. *Am J Public Health*, *96*(5), 826-833. doi: 10.2105/ajph.2004.060749

Gomez, S., Glaser, S., McClure, L., Shema, S., Kealey, M., Keegan, T. M., & Satariano, W. (2011). The California Neighborhoods Data System: a new resource for examining the impact of neighborhood characteristics on cancer incidence and outcomes in populations. *Cancer Causes & Control*, *22*(4), 631-647. doi: 10.1007/s10552-011-9736-5

Gomez, S. L., Clarke, C. A., Shema, S. J., Chang, E. T., Keegan, T. H., & Glaser, S. L. (2010). Disparities in breast cancer survival among Asian women by ethnicity and immigrant status: a population-based study. *American Journal of Public Health*, *100*(5), 861.

Gomez, S. L., Quach, T., Horn-Ross, P. L., Pham, J. T., Cockburn, M., Chang, E. T., . . . Clarke, C. A. (2010). Hidden breast cancer disparities in Asian women: disaggregating incidence rates by ethnicity and migrant status. *American Journal of Public Health*, *100 Suppl 1*, S125-131. doi: 10.2105/ajph.2009.163931

Gomez, S. L., Shariff-Marco, S., DeRouen, M., Keegan, T. H. M., Yen, I. H., Mujahid, M., . . . Glaser, S. L. (2015). The impact of neighborhood social and built environment factors across the cancer continuum: Current research, methodological considerations, and future directions. *Cancer*, *121*(14), 2314-2330. doi: 10.1002/cncr.29345

Gorber, S. C., Tremblay, M., Moher, D., & Gorber, B. (2007). A comparison of direct vs. self-report measures for assessing height, weight and body mass index: a systematic review. *Obesity reviews*, *8*(4), 307-326.

Gordon-Larsen, P., Nelson, M. C., Page, P., & Popkin, B. M. (2006). Inequality in the Built Environment Underlies Key Health Disparities in Physical Activity and Obesity. *Pediatrics*, *117*(2), 417-424. doi: 10.1542/peds.2005-0058

Gordon, L., Payne-Sturges, D., & Gee, G. (2010). Environmental health disparities: Select case studies related to Asian and Pacific Islander Americans. *Environmental Justice*, *3*(1), 21-26.

Gordon, M. M. (1964). *Assimilation in American life: The role of race, religion, and national origins*: Oxford University Press on Demand.

Grineski, S. E., Collins, T. W., & Chakraborty, J. (2013). Hispanic heterogeneity and environmental injustice: intra-ethnic patterns of exposure to cancer risks from traffic-related air pollution in Miami. *Population and Environment*, *35*(1), 26-44. doi: 10.1007/s11111-012-0184-2

Hawkins, S. S., Gillman, M. W., Shafer, E. F., & Cohen, B. B. (2014). Acculturation and Maternal Health Behaviors: Findings from the Massachusetts Birth Certificate. *American Journal of Preventive Medicine*, *47*(2), 150-159. doi: http://dx.doi.org/10.1016/j.amepre.2014.02.015

Hirsch, J. A., Moore, K. A., Clarke, P. J., Rodriguez, D. A., Evenson, K. R., Brines, S. J., . . . Roux, A. V. D. (2014). Changes in the built environment and changes in the amount of

walking over time: longitudinal results from the multi-ethnic study of atherosclerosis. *Am J Epidemiol, 180*(8), 799-809.
Hoedl, S., Titze, S., & Oja, P. (2010). The bikeability and walkability evaluation table: Reliability and application. *American Journal of Preventive Medicine, 39*(5), 457-459.
Howell, A., Anderson, A., Clarke, R., Duffy, S., Evans, D., Garcia-Closas, M., . . . Harvie, M. (2014). Risk determination and prevention of breast cancer. *Breast Cancer Research, 16*(5), 446.
Hung, L.-J., Tsai, S.-S., Chen, P.-S., Yang, Y.-H., Liou, S.-H., Wu, T.-N., & Yang, C.-Y. (2012). Traffic air pollution and risk of death from breast cancer in Taiwan: Fine particulate matter (PM2. 5) as a proxy marker. *Aerosol Air Qual. Res, 12*(2), 275-282.
Hystad, P., Villeneuve, P. J., Goldberg, M. S., Crouse, D. L., & Johnson, K. (2015). Exposure to traffic-related air pollution and the risk of developing breast cancer among women in eight Canadian provinces: A case–control study. *Environment International, 74*, 240-248. doi: http://dx.doi.org/10.1016/j.envint.2014.09.004
Inagami, S., Cohen, D. A., Finch, B. K., & Asch, S. M. (2006). You Are Where You Shop: Grocery Store Locations, Weight, and Neighborhoods. *American Journal of Preventive Medicine, 31*(1), 10-17. doi: http://dx.doi.org/10.1016/j.amepre.2006.03.019
Irwin, M. L., Aiello, E. J., McTiernan, A., Baumgartner, R. N., Baumgartner, K. B., Bernstein, L., . . . Ballard-Barbash, R. (2006). Pre-diagnosis physical activity and mammographic density in breast cancer survivors. *Breast Cancer Res Treat, 95*(2), 171-178.
Jeffery, R. W., Baxter, J., McGuire, M., & Linde, J. (2006). Are fast food restaurants an environmental risk factor for obesity? *International Journal of Behavioral Nutrition and Physical Activity, 3*(1), 2. doi: 10.1186/1479-5868-3-2
Jemal, A., Bray, F., Center, M. M., Ferlay, J., Ward, E., & Forman, D. (2011). Global cancer statistics. *CA: A Cancer Journal for Clinicians, 61*(2), 69-90. doi: 10.3322/caac.20107
Jenkins, S., Raghuraman, N., Eltoum, I., Carpenter, M., Russo, J., & Lamartiniere, C. A. (2009). Oral exposure to bisphenol A increases dimethylbenzanthracene-induced mammary cancer in rats. *Environmental health perspectives, 117*(6), 910.
Jensen, L., & Chitose, Y. (1994). Today's second generation: Evidence from the 1990 US Census. *International Migration Review*, 714-735.
Johnson-Kizlow, M., Matt, G. E., Rock, C. L., de la Rosa, R., Conway, T. L., & Romero, R. A. (2011). Assessment of dietary intakes of Filipino-Americans: Implications for food frequency questionnaire design. *J Nutr Educ Behav, 43*, 505-510.
Jung, S., Spiegelman, D., Baglietto, L., Bernstein, L., Boggs, D. A., van den Brandt, P. A., . . . Smith-Warner, S. A. (2013). Fruit and Vegetable Intake and Risk of Breast Cancer by Hormone Receptor Status. *J Natl Cancer Inst, 105*(3), 219-236. doi: 10.1093/jnci/djs635
Kaczynski, A. T., Potwarka, L. R., Smale, B. J. A., & Havitz, M. E. (2009). Association of Parkland Proximity with Neighborhood and Park-based Physical Activity: Variations by Gender and Age. *Leisure Sciences, 31*(2), 174-191. doi: 10.1080/01490400802686045
Kavanagh, A. M., Kelly, M. T., Krnjacki, L., Thornton, L., Jolley, D., Subramanian, S. V., . . . Bentley, R. J. (2011). Access to alcohol outlets and harmful alcohol consumption: a multi-level study in Melbourne, Australia. *Addiction, 106*(10), 1772-1779. doi: 10.1111/j.1360-0443.2011.03510.x
Kawachi, I., & Berkman, L. F. (2003). Neighborhoods and health.
Keegan, T. H. M., John, E. M., Fish, K. M., Alfaro-Velcamp, T., Clarke, C. A., & Gomez, S. L. (2010). Breast Cancer Incidence Patterns among California Hispanic Women:

Differences by Nativity and Residence in an Enclave. *Cancer Epidemiology Biomarkers & Prevention, 19*(5), 1208-1218. doi: 10.1158/1055-9965.epi-10-0021
Keegan, T. H. M., Quach, T., Shema, S., Glaser, S. L., & Gomez, S. L. (2010). The influence of nativity and neighborhoods on breast cancer stage at diagnosis and survival among California Hispanic women. *BMC Cancer, 10*, 603. doi: 10.1186/1471-2407-10-603
Keegan, T. H. M., Shariff-Marco, S., Sangaramoorthy, M., Koo, J., Hertz, A., Schupp, C., . . . Gomez, S. (2014). Neighborhood influences on recreational physical activity and survival after breast cancer. *Cancer Causes & Control*, 1-14. doi: 10.1007/s10552-014-0431-1
Keith, S. W., Fontaine, K. R., Pajewski, N. M., Mehta, T., & Allison, D. B. (2011). Use of self-reported height and weight biases the body mass index-mortality association. *Int J Obes (Lond), 35*(3), 401-408. doi: 10.1038/ijo.2010.148
Kelsey, J. L., Gammon, M. D., & John, E. M. (1993). Reproductive factors and breast cancer. *Epidemiologic reviews, 15*(1), 36.
Kerr, J., Duncan, S., & Schipperjin, J. (2011). Using Global Positioning Systems in Health Research: A Practical Approach to Data Collection and Processing. *American Journal of Preventive Medicine, 41*(5), 532-540. doi: http://dx.doi.org/10.1016/j.amepre.2011.07.017
Kershaw, K. N., Albrecht, S. S., & Carnethon, M. R. (2013). Racial and ethnic residential segregation, the neighborhood socioeconomic environment, and obesity among Blacks and Mexican Americans. *Am J Epidemiol, 177*(4), 299-309.
Key, T. J., Appleby, P. N., Reeves, G. K., Roddam, A., Dorgan, J. F., Longcope, C., . . . Endogenous Hormones Breast Cancer Collaborative, G. (2003). Body mass index, serum sex hormones, and breast cancer risk in postmenopausal women. *J Natl Cancer Inst, 95*(16), 1218-1226.
Key, T. J., Verkasalo, P. K., & Banks, E. (2001). Epidemiology of breast cancer. *The lancet oncology, 2*(3), 133-140. doi: http://dx.doi.org/10.1016/S1470-2045(00)00254-0
Kim, I., & Spencer, M. S. (2011). Heavy Drinking, Perceived Discrimination, and Immigration Status Among Filipino Americans. *Substance Use & Misuse, 46*(10), 1256-1264. doi: doi:10.3109/10826084.2011.570844
Kimbro, R. T., Brooks-Gunn, J., & McLanahan, S. (2011). Young children in urban areas: Links among neighborhood characteristics, weight status, outdoor play, and television watching. *Social Science & Medicine, 72*(5), 668-676. doi: http://dx.doi.org/10.1016/j.socscimed.2010.12.015
Kirby, J. B., Liang, L., Chen, H.-J., & Wang, Y. (2012). Race, Place, and Obesity: The Complex Relationships Among Community Racial/Ethnic Composition, Individual Race/Ethnicity, and Obesity in the United States. *American Journal of Public Health, 102*(8), 1572-1578. doi: 10.2105/ajph.2011.300452
Kobayashi, S., Sugiura, H., Ando, Y., Shiraki, N., Yanagi, T., Yamashita, H., & Toyama, T. (2012). Reproductive history and breast cancer risk. *Breast Cancer, 19*(4), 302-308. doi: 10.1007/s12282-012-0384-8
Kohler, B. A., Sherman, R. L., Howlader, N., Jemal, A., Ryerson, A. B., Henry, K. A., . . . Penberthy, L. (2015). Annual Report to the Nation on the Status of Cancer, 1975-2011, Featuring Incidence of Breast Cancer Subtypes by Race/Ethnicity, Poverty, and State. *J Natl Cancer Inst, 107*(6).
Kohler, U., Karlson, K. B., & Holm, A. (2011). Comparing coefficients of nested nonlinear probability models. *Stata Journal, 11*(3), 420-438.

Kotsopoulos, J., Lubinski, J., Salmena, L., Lynch, H. T., Kim-Sing, C., Foulkes, W. D., . . . Tung, N. (2012). Breastfeeding and the risk of breast cancer in BRCA1 and BRCA2 mutation carriers. *Breast Cancer Res, 14*(2), R42.

Kriska, A. (1997). Modifiable activity questionnaire. *Med Sci Sports Exerc, 29*, S73-87.

Kriska, A. M., Knowler, W. C., LaPorte, R. E., Drash, A. L., Wing, R. R., Blair, S. N., . . . Kuller, L. H. (1990). Development of Questionnaire to Examine Relationship of Physical Activity and Diabetes in Pima Indians. *Diabetes Care, 13*(4), 401-411.

Kruk, J. (2012). Self-reported psychological stress and the risk of breast cancer: a case-control study. *Stress, 15*(2), 162-171.

Kuo, T.-M., Mobley, L. R., & Anselin, L. (2011). Geographic disparities in late-stage breast cancer diagnosis in California. *Health & Place, 17*(1), 327-334. doi: http://dx.doi.org/10.1016/j.healthplace.2010.11.007

Kurian, A. W. (2010). BRCA1 and BRCA2 mutations across race and ethnicity: distribution and clinical implications. *Current Opinion in Obstetrics and Gynecology, 22*(1), 72-78.

Lara, M., Gamboa, C., Kahramanian, M. I., Morales, L. S., & Bautista, D. E. (2005). Acculturation and Latino health in the United States: a review of the literature and its sociopolitical context. *Annu Rev Public Health, 26*, 367-397. doi: 10.1146/annurev.publhealth.26.021304.144615

Lê-Scherban, F., Albrecht, S. S., Osypuk, T. L., Sánchez, B. N., & Diez Roux, A. V. (2014). Neighborhood Ethnic Composition, Spatial Assimilation, and Change in Body Mass Index Over Time Among Hispanic and Chinese Immigrants: Multi-Ethnic Study of Atherosclerosis. *American Journal of Public Health, 104*(11), 2138-2146. doi: 10.2105/ajph.2014.302154

Lee, S. K., Sobal, J., & Frongillo, E. A. J. (1999). Acculturation and dietary practices among Korean Americans. *J Am Diet Assoc, 99*, 1084-1089.

Legh-Jones, H., & Moore, S. (2012). Network social capital, social participation, and physical inactivity in an urban adult population. *Social Science & Medicine, 74*(9), 1362-1367. doi: http://dx.doi.org/10.1016/j.socscimed.2012.01.005

Lesser, I. A., Gasevic, D., & Lear, S. A. (2014). The Association between Acculturation and Dietary Patterns of South Asian Immigrants. *PLoS ONE, 9*(2), e88495. doi: 10.1371/journal.pone.0088495

Lillberg, K., Verkasalo, P. K., Kaprio, J., Teppo, L., Helenius, H., & Koskenvuo, M. (2003). Stressful life events and risk of breast cancer in 10,808 women: a cohort study. *Am J Epidemiol, 157*(5), 415-423.

Lim, S., Yi, S. S., Lundy De La Cruz, N., & Trinh-Shevrin, C. (2017). Defining Ethnic Enclave and Its Associations with Self-Reported Health Outcomes Among Asian American Adults in New York City. *Journal of immigrant and minority health, 19*(1), 138-146. doi: 10.1007/s10903-015-0334-6

Lin, S. S., Clarke, C. A., O'Malley, C. D., & Le, G. M. (2002). Studying Cancer Incidence and Outcomes in Immigrants: Methodological Concerns. *American Journal of Public Health, 92*(11), 1757-a-1759. doi: 10.2105/AJPH.92.11.1757-a

Lindström, M., Hanson, B. S., & Östergren, P.-O. (2001). Socioeconomic differences in leisure-time physical activity: the role of social participation and social capital in shaping health related behaviour. *Social Science & Medicine, 52*(3), 441-451. doi: http://dx.doi.org/10.1016/S0277-9536(00)00153-2

Litt, J. S., Soobader, M.-J., Turbin, M. S., Hale, J. W., Buchenau, M., & Marshall, J. A. (2011). The Influence of Social Involvement, Neighborhood Aesthetics, and Community Garden Participation on Fruit and Vegetable Consumption. *American Journal of Public Health, 101*(8), 1466-1473. doi: 10.2105/ajph.2010.300111

Liu, Y. T., Gao, C. M., Ding, J. H., Li, S. P., Cao, H. X., Wu, J. Z., . . . Tajima, K. (2011). Physiological, reproductive factors and breast cancer risk in Jiangsu province of China. *Asian Pac J Cancer Prev*, *12*(3), 787-790.

Logan, J. R. (2011). Separate and unequal: The neighborhood gap for blacks, Hispanics and Asians in Metropolitan America. *Project US2010 Report*, 1-22.

Mackenbach, J. D., Rutter, H., Compernolle, S., Glonti, K., Oppert, J.-M., Charreire, H., . . . Lakerveld, J. (2014). Obesogenic environments: a systematic review of the association between the physical environment and adult weight status, the SPOTLIGHT project. *BMC Public Health, 14*(1), 233. doi: 10.1186/1471-2458-14-233

Maghelal, P. K., & Capp, C. J. (2011). Walkability: A Review of Existing Pedestrian Indices. *Journal of the Urban & Regional Information Systems Association, 23*(2).

Mair, C., Diez Roux, A. V., Osypuk, T. L., Rapp, S. R., Seeman, T., & Watson, K. E. (2010). Is neighborhood racial/ethnic composition associated with depressive symptoms? The multi-ethnic study of atherosclerosis. *Social Science & Medicine, 71*(3), 541-550. doi: http://dx.doi.org/10.1016/j.socscimed.2010.04.014

Malone, K. E., Begg, C. B., Haile, R. W., Borg, A., Concannon, P., Tellhed, L., . . . Bernstein, J. L. (2010). Population-Based Study of the Risk of Second Primary Contralateral Breast Cancer Associated With Carrying a Mutation in BRCA1 or BRCA2. *Journal of Clinical Oncology, 28*(14), 2404-2410. doi: 10.1200/jco.2009.24.2495

Marchbanks, P. A., McDonald, J. A., Wilson, H. G., Folger, S. G., Mandel, M. G., Daling, J. R., . . . Strom, B. L. (2002). Oral contraceptives and the risk of breast cancer. *New England Journal of Medicine, 346*(26), 2025-2032.

Markides, K. S., & Eschbach, K. (2011). Hispanic paradox in adult mortality in the United States *International handbook of adult mortality* (pp. 227-240): Springer.

Marshall, J. D., Brauer, M., & Frank, L. D. (2009). Healthy neighborhoods: walkability and air pollution. *Environmental health perspectives, 117*(11), 1752.

Mason, S. M., Kaufman, J. S., Daniels, J. L., Emch, M. E., Hogan, V. K., & Savitz, D. A. (2011). Neighborhood ethnic density and preterm birth across seven ethnic groups in New York City. *Health & Place, 17*(1), 280-288. doi: http://dx.doi.org/10.1016/j.healthplace.2010.11.006

Massey, D., & Denton, N. A. (1993). *American Apartheid: Segregation and the Making of the Underclass*. Cambridge, MA: Harvard University Press.

McEwen, B. S. (1998). Stress, Adaptation, and Disease: Allostasis and Allostatic Load. *Annals of the New York Academy of Sciences, 840*(1), 33-44. doi: 10.1111/j.1749-6632.1998.tb09546.x

McEwen, B. S., & Seeman, T. (1999). Protective and damaging effects of mediators of stress: elaborating and testing the concepts of allostasis and allostatic load. *Annals of the New York Academy of Sciences, 896*(1), 30-47.

McNeill, L. H., Kreuter, M. W., & Subramanian, S. (2006). Social environment and physical activity: a review of concepts and evidence. *Social Science & Medicine, 63*(4), 1011-1022.

Mezei, G., & Kheifets, L. (2006). Selection bias and its implications for case–control studies: a case study of magnetic field exposure and childhood leukaemia. *International Journal of Epidemiology, 35*(2), 397-406.

Miles, R. (2006). Neighborhood disorder and smoking: Findings of a European urban survey. *Social Science & Medicine, 63*(9), 2464-2475. doi: http://dx.doi.org/10.1016/j.socscimed.2006.06.011

Miller, B., Chu, K., Hankey, B., & Ries, L. G. (2008). Cancer incidence and mortality patterns among specific Asian and Pacific Islander populations in the U.S. *Cancer Causes & Control, 19*(3), 227-256. doi: 10.1007/s10552-007-9088-3

Mobley, L. R., Root, E. D., Finkelstein, E. A., Khavjou, O., Farris, R. P., & Will, J. C. (2006). Environment, Obesity, and Cardiovascular Disease Risk in Low-Income Women. *American Journal of Preventive Medicine, 30*(4), 327-332.e321. doi: http://dx.doi.org/10.1016/j.amepre.2005.12.001

Möller, T., Olsson, H., Ranstam, J., & Cancer, C. G. o. H. F. i. B. (2002). Breast cancer and breastfeeding: collaborative reanalysis of individual data from 47 epidemiological studies in 30 countries, including 50 302 women with breast cancer and 96 973 women without the disease. *Lancet, 360*(9328), 187-195.

Monninkhof, E. M., Elias, S. G., Vlems, F. A., van der Tweel, I., Schuit, A. J., Voskuil, D. W., . . . TFPAC, o. b. o. (2007). Physical Activity and Breast Cancer: A Systematic Review. *Epidemiology, 18*(1), 137-157 110.1097/1001.ede.0000251167.0000275581.0000251198.

Moore, L. V., Diez Roux, A. V., Evenson, K. R., McGinn, A. P., & Brines, S. J. (2008). Availability of Recreational Resources in Minority and Low Socioeconomic Status Areas. *American Journal of Preventive Medicine, 34*(1), 16-22. doi: 10.1016/j.amepre.2007.09.021

Morello-Frosch, R., & Lopez, R. (2006). The riskscape and the color line: examining the role of segregation in environmental health disparities. *Environ Res, 102*(2), 181-196. doi: 10.1016/j.envres.2006.05.007

Morello-Frosch, R., Pastor, M., & Sadd, J. (2001). Environmental Justice and Southern California's "Riskscape". *Urban Affairs Review, 36*(4), 551-578. doi: 10.1177/10780870122184993

Morey, B. N. (2014). Environmental Justice for Native Hawaiians and Pacific Islanders in Los Angeles County. *Environmental Justice, 7*(1), 9-17.

Morland, K., Diez Roux, A. V., & Wing, S. (2006). Supermarkets, other food stores, and obesity: the atherosclerosis risk in communities study. *American Journal of Preventive Medicine, 30*(4), 333-339.

Mytton, O. T., Townsend, N., Rutter, H., & Foster, C. (2012). Green space and physical activity: An observational study using Health Survey for England data. *Health & Place, 18*(5), 1034-1041. doi: http://dx.doi.org/10.1016/j.healthplace.2012.06.003

National Cancer Institute. (2016). *SEER Cancer Statistics Factsheets: Female Breast Cancer*. Bethesda, MD: National Cancer Institute Retrieved from http://seer.cancer.gov/statfacts/html/breast.html.

National Establishment Time-Series (NETS) Database 2009 ed. (2008).

NAVSTREETS Street Data Reference Manual v3.7. (2010).

Nelson, M. C., Gordon-Larsen, P., Song, Y., & Popkin, B. M. (2006). Built and Social Environments: Associations with Adolescent Overweight and Activity. *American Journal*

of Preventive Medicine, 31(2), 109-117. doi: http://dx.doi.org/10.1016/j.amepre.2006.03.026
Nelson, N. J. (2006). Migrant Studies Aid the Search for Factors Linked to Breast Cancer Risk. *J Natl Cancer Inst, 98*(7), 436-438. doi: 10.1093/jnci/djj147
Nichol, M., Janssen, I., & Pickett, W. (2010). Associations between neighborhood safety, availability of recreational facilities, and adolescent physical activity among Canadian youth. *Journal of Physical Activity and Health, 7*(4), 442-450.
Nobari, T. Z., Wang, M.-C., Chaparro, M. P., Crespi, C. M., Koleilat, M., & Whaley, S. E. (2013). Immigrant enclaves and obesity in preschool-aged children in Los Angeles County. *Social Science & Medicine, 92*, 1-8. doi: http://dx.doi.org/10.1016/j.socscimed.2013.05.019
Noh, S., & Avison, W. R. (1996). Asian immigrants and the stress process: a study of Koreans in Canada. *J Health Soc Behav, 37*(2), 192-206.
Noh, S., Beiser, M., Kaspar, V., Hou, F., & Rummens, J. (1999). Perceived Racial Discrimination, Depression, and Coping: A Study of Southeast Asian Refugees in Canada. *Journal of health and social behavior, 40*(3), 193-207.
Norman, G. J., Nutter, S. K., Ryan, S., Sallis, J. F., Calfas, K. J., & Patrick, K. (2006). Community design and access to recreational facilities as correlates of adolescent physical activity and body-mass index. *Journal of Physical Activity and Health, 3*(s1), S118-S128.
O. Ferdinand, A., Sen, B., Rahurkar, S., Engler, S., & Menachemi, N. (2012). The Relationship Between Built Environments and Physical Activity: A Systematic Review. *American Journal of Public Health, 102*(10), e7-e13. doi: 10.2105/ajph.2012.300740
Osypuk, T. L., Diez Roux, A. V., Hadley, C., & Kandula, N. R. (2009). Are immigrant enclaves healthy places to live? The Multi-ethnic Study of Atherosclerosis. *Social Science & Medicine, 69*(1), 110-120. doi: http://dx.doi.org/10.1016/j.socscimed.2009.04.010
Palmer, J. R., Boggs, D. A., Wise, L. A., Adams-Campbell, L. L., & Rosenberg, L. (2012). Individual and Neighborhood Socioeconomic Status in Relation to Breast Cancer Incidence in African-American Women. *Am J Epidemiol, 176*(12), 1141-1146. doi: 10.1093/aje/kws211
Park, S.-Y., Kolonel, L. N., Lim, U., White, K. K., Henderson, B. E., & Wilkens, L. R. (2014). Alcohol consumption and breast cancer risk among women from five ethnic groups with light to moderate intakes: The Multiethnic Cohort Study. *International Journal of Cancer, 134*(6), 1504-1510. doi: 10.1002/ijc.28476
Park, S. K., Kim, Y., Kang, D., Jung, E. J., & Yoo, K. Y. (2011). Risk factors and control strategies for the rapidly rising rate of breast cancer in Korea. *J Breast Cancer, 14*(2), 79-87. doi: 10.4048/jbc.2011.14.2.79
Parrillo, V. N., & Donoghue, C. (2005). Updating the Bogardus social distance studies: a new national survey. *The Social Science Journal, 42*(2), 257-271. doi: http://dx.doi.org/10.1016/j.soscij.2005.03.011
Paschall, M. J., Grube, J. W., Thomas, S., Cannon, C., & Treffers, R. (2012). Relationships between local enforcement, alcohol availability, drinking norms, and adolescent alcohol use in 50 California cities. *Journal of studies on alcohol and drugs, 73*(4), 657-665.
Patel, K. V., Eschbach, K., Rudkin, L. L., Peek, M. K., & Markides, K. S. (2003). Neighborhood context and self-rated health in older Mexican Americans. *Ann Epidemiol, 13*(9), 620-628. doi: http://dx.doi.org/10.1016/S1047-2797(03)00060-7

Penedo, F. J., & Dahn, J. R. (2005). Exercise and well-being: a review of mental and physical health benefits associated with physical activity. *Current Opinion in Psychiatry, 18*(2), 189-193.

Perchoux, C., Chaix, B., Cummins, S., & Kestens, Y. (2013). Conceptualization and measurement of environmental exposure in epidemiology: Accounting for activity space related to daily mobility. *Health & Place, 21*, 86-93. doi: http://dx.doi.org/10.1016/j.healthplace.2013.01.005

Petticrew, M., Fraser, J. M., & Regan, M. F. (1999). Adverse life-events and risk of breast cancer: A meta-analysis. *British Journal of Health Psychology, 4*(1), 1-17. doi: 10.1348/135910799168434

Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual review of sociology, 24*(1), 1-24.

Portes, A., & Rumbaut, R. G. (2014). *Immigrant America: A Portrait* (Fourth Edition ed.): University of California Press.

Portes, A., & Sensenbrenner, J. (1993). Embeddedness and immigration: Notes on the social determinants of economic action. *American journal of sociology, 98*(6), 1320-1350.

Portes, A., & Zhou, M. (1993). The new second generation: Segmented assimilation and its variants. *The ANNALS of the American Academy of Political and Social Science, 530*(1), 74-96.

Pudrovska, T., & Anikputa, B. (2011). The Role of Early-Life Socioeconomic Status in Breast Cancer Incidence and Mortality. *Journal of Aging and Health, 24*(2), 323-344. doi: 10.1177/0898264311422744

Pupo, M., Pisano, A., Lappano, R., Santolla, M. F., De Francesco, E. M., Abonante, S., . . . Maggiolini, M. (2012). Bisphenol A induces gene expression changes and proliferative effects through GPER in breast cancer cells and cancer-associated fibroblasts. *Environmental health perspectives, 120*(8), 1177.

Quach, T., Nuru-Jeter, A., Morris, P., Allen, L., Shema, S. J., Winters, J. K., . . . Gomez, S. L. (2012). Experiences and Perceptions of Medical Discrimination Among a Multiethnic Sample of Breast Cancer Patients in the Greater San Francisco Bay Area, California. *American Journal of Public Health, 102*(5), 1027-1034. doi: 10.2105/ajph.2011.300554

Quick, V., Wall, M., Larson, N., Haines, J., & Neumark-Sztainer, D. (2013). Personal, behavioral and socio-environmental predictors of overweight incidence in young adults: 10-yr longitudinal findings. *International Journal of Behavioral Nutrition and Physical Activity, 10*(1), 37. doi: 10.1186/1479-5868-10-37

Ranchod, Y. K., Diez Roux, A. V., Evenson, K. R., Sánchez, B. N., & Moore, K. (2014). Longitudinal Associations Between Neighborhood Recreational Facilities and Change in Recreational Physical Activity in the Multi-Ethnic Study of Atherosclerosis, 2000–2007. *Am J Epidemiol, 179*(3), 335-343. doi: 10.1093/aje/kwt263

Renalds, A., Smith, T. H., & Hale, P. J. (2010). A systematic review of built environment and health. *Fam Community Health, 33*(1), 68-78. doi: 10.1097/FCH.0b013e3181c4e2e5

Reynolds, P., Hurley, S., Goldberg, D. E., Quach, T., Rull, R., & Behren, J. V. (2011). An Excess of Breast Cancer among Young California-born Asian Women. *Ethnicity & Disease, 21*(2), 196-201.

Reynolds, P., Hurley, S., Quach, A.-T., Rosen, H., Behren, J., Hertz, A., & Smith, D. (2005). Regional variations in breast cancer incidence among California women, 1988–1997. *Cancer Causes & Control, 16*(2), 139-150. doi: 10.1007/s10552-004-2616-5

Richardson, E. A., Pearce, J., Mitchell, R., & Kingham, S. (2013). Role of physical activity in the relationship between urban green space and health. *Public Health, 127*(4), 318-324. doi: http://dx.doi.org/10.1016/j.puhe.2013.01.004

Robert, S. A., Strombom, I., Trentham-Dietz, A., Hampton, J. M., McElroy, J. A., Newcomb, P. A., & Remington, P. L. (2004a). Socioeconomic Risk Factors for Breast Cancer: Distinguishing Individual- and Community-Level Effects. *Epidemiology, 15*(4), 442-450 410.1097/1001.ede.0000129512.0000161698.0000129503.

Robert, S. A., Strombom, I., Trentham-Dietz, A., Hampton, J. M., McElroy, J. A., Newcomb, P. A., & Remington, P. L. (2004b). Socioeconomic Risk Factors for Breast Cancer: Distinguishing Individual- and Community-Level Effects. *Epidemiology, 15*(4).

Rogers, J. A., Metz, L., & Yong, V. W. (2013). Review: Endocrine disrupting chemicals and immune responses: A focus on bisphenol-A and its potential mechanisms. *Molecular Immunology, 53*(4), 421-430. doi: http://dx.doi.org/10.1016/j.molimm.2012.09.013

Rooney, B. L., Mathiason, M. A., & Schauberger, C. W. (2011). Predictors of Obesity in Childhood, Adolescence, and Adulthood in a Birth Cohort. *Maternal and Child Health Journal, 15*(8), 1166-1175. doi: 10.1007/s10995-010-0689-1

Rosenberg, L., Palmer, J. R., Bethea, T. N., Ban, Y., Kipping-Ruane, K., & Adams-Campbell, L. L. (2014). A Prospective Study of Physical Activity and Breast Cancer Incidence in African-American Women. *Cancer Epidemiology Biomarkers & Prevention, 23*(11), 2522-2531. doi: 10.1158/1055-9965.epi-14-0448

Ross, C. E., & Mirowsky, J. (1992). Households, Employment, and the Sense of Control. *Social Psychology Quarterly, 55*(3), 217-235.

Rothman, K. J., Greenland, S., & Lash, T. L. (2008). Case–Control Studies *Encyclopedia of Quantitative Risk Analysis and Assessment*: John Wiley & Sons, Ltd.

Salant, T., & Lauderdale, D. S. (2003). Measuring culture: a critical review of acculturation and health in Asian immigrant populations. *Social Science & Medicine, 57*(1), 71-90. doi: http://dx.doi.org/10.1016/S0277-9536(02)00300-3

Sallis, J. F., & Glanz, K. (2009). Physical Activity and Food Environments: Solutions to the Obesity Epidemic. *Milbank Quarterly, 87*(1), 123-154. doi: 10.1111/j.1468-0009.2009.00550.x

Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science, 277*(5328), 918-924.

Satia, J. A., Patterson, R. E., Kristal, A. R., Hislop, T. G., Yasui, Y., & Taylor, V. M. (2001). Development of scales to measure dietary acculturation among Chinese-Americans and Chinese-Canadians. *J Am Diet Assoc, 101*, 548-553.

Schairer, C., Lubin, J., Troisi, R., Sturgeon, S., Brinton, L., & Hoover, R. (2000). MEnopausal estrogen and estrogen-progestin replacement therapy and breast cancer risk. *JAMA, 283*(4), 485-491. doi: 10.1001/jama.283.4.485

Schulz, L. O., Harper, I. T., Smith, C. J., Kriska, A. M., & Ravussin, E. (1994). Energy intake and physical activity in Pima Indians: comparison with energy expenditure measured by doubly-labeled water. *Obesity Res, 2*, 541-548.

Scribner, R. A., Cohen, D. A., & Fisher, W. (2000). Evidence of a Structural Effect for Alcohol Outlet Density: A Multilevel Analysis. *Alcoholism: Clinical and Experimental Research, 24*(2), 188-195. doi: 10.1111/j.1530-0277.2000.tb04590.x

Scully, D., Kremer, J., Meade, M. M., Graham, R., & Dudgeon, K. (1998). Physical exercise and psychological well being: a critical review. *British Journal of Sports Medicine, 32*(2), 111-120. doi: 10.1136/bjsm.32.2.111

Shariff-Marco, S., Gee, G. C., Breen, N., Willis, G., Reeve, B. B., Grant, D., . . . Brown, E. R. (2009). A MIXED-METHODS APPROACH TO DEVELOPING A SELF-REPORTED RACIAL/ETHNIC DISCRIMINATION MEASURE FOR USE IN MULTIETHNIC HEALTH SURVEYS. *Ethnicity & disease, 19*(4), 447-453.

Siqueira Reis, R., Hino, A. A. F., Ricardo Rech, C., Kerr, J., & Curi Hallal, P. (2013). Walkability and Physical Activity: Findings from Curitiba, Brazil. *American Journal of Preventive Medicine, 45*(3), 269-275. doi: http://dx.doi.org/10.1016/j.amepre.2013.04.020

Smith, D., Cummins, S., Clark, C., & Stansfeld, S. (2013). Does the local food environment around schools affect diet? Longitudinal associations in adolescents attending secondary schools in East London. *BMC Public Health, 13*(1), 70. doi: 10.1186/1471-2458-13-70

Song, Y., Gee, G. C., Fan, Y., & Takeuchi, D. T. (2007). Do physical neighborhood characteristics matter in predicting traffic stress and health outcomes? *Transportation Research Part F: Traffic Psychology and Behaviour, 10*(2), 164-176. doi: http://dx.doi.org/10.1016/j.trf.2006.09.001

Soto, A. M., Brisken, C., Schaeberle, C., & Sonnenschein, C. (2013). Does Cancer Start in the Womb? Altered Mammary Gland Development and Predisposition to Breast Cancer due to in Utero Exposure to Endocrine Disruptors. *J Mammary Gland Biol Neoplasia, 18*(2), 199-208. doi: 10.1007/s10911-013-9293-5

Stanford, J. L., Herrinton, L. J., Schwartz, S. M., & Weiss, N. S. (1995). Breast Cancer Incidence in Asian Migrants to the United States and Their Descendants. *Epidemiology, 6*(2), 181-183. doi: 10.2307/3702322

StataCorp. (2015). Stata Statistical Software: Release 14. College Station, TX: StataCorp LP.

Steptoe, A., & Feldman, P. J. (2001). Neighborhood problems as sources of chronic stress: Development of a measure of neighborhood problems, and associations with socioeconomic status and health. *Annals of Behavioral Medicine, 23*(3), 177-185. doi: 10.1207/s15324796abm2303_5

Stewart, B. W., & Wild, C. P. (2014). *World Cancer Report 2014*. IARC.

Stockdale, S. E., Wells, K. B., Tang, L., Belin, T. R., Zhang, L., & Sherbourne, C. D. (2007). The importance of social context: Neighborhood stressors, stress-buffering mechanisms, and alcohol, drug, and mental health disorders. *Social Science & Medicine, 65*(9), 1867-1881. doi: http://dx.doi.org/10.1016/j.socscimed.2007.05.045

Stults-Kolehmainen, M. A., & Sinha, R. (2014). The Effects of Stress on Physical Activity and Exercise. [journal article]. *Sports Medicine, 44*(1), 81-121. doi: 10.1007/s40279-013-0090-5

Texas A&M Geoservices. (2013). Free Texas A&M Geoservices Desktop Geocoding Client. from Texas A&M University

Teychenne, M., Ball, K., & Salmon, J. (2008). Physical activity and likelihood of depression in adults: A review. *Preventive Medicine, 46*(5), 397-411. doi: http://dx.doi.org/10.1016/j.ypmed.2008.01.009

Thomson, M. D., & Hoffman-Goetz, L. (2009). Defining and measuring acculturation: A systematic review of public health studies with Hispanic populations in the United States.

Social Science & Medicine, 69(7), 983-991. doi: http://dx.doi.org/10.1016/j.socscimed.2009.05.011
Thornton, L., JR, P., & Kavanagh, A. (2011). Using Geographic Information Systems (GIS) to assess the role of the built environment in influencing obesity: a glossary. *Int J Behav Nutr Phys Act, 8*(71).
Tudor-Locke, C. E., & Myers, A. M. (2001). Challenges and Opportunities for Measuring Physical Activity in Sedentary Adults. *Sports Medicine, 31*(2), 91-100. doi: 10.2165/00007256-200131020-00002
UCLA Center for Health Policy Research. (AskCHIS 2003). *Number of drinks per day compared by Race - Census for Females Ages 22-90 (Santa Clara, Alameda, Contra Costa, San Francisco, San Mateo)*. Retrieved from: http://ask.chis.ucla.edu
UCLA: Statistical Consulting Group. (2016). Stata Data Analysis Examples: Negative Binomial Regression, March 22, 2016, from http://www.ats.ucla.edu/stat/stata/dae/nbreg.htm
Van Cauwenberg, J., De Bourdeaudhuij, I., De Meester, F., Van Dyck, D., Salmon, J., Clarys, P., & Deforche, B. (2011). Relationship between the physical environment and physical activity in older adults: A systematic review. *Health & Place, 17*(2), 458-469. doi: http://dx.doi.org/10.1016/j.healthplace.2010.11.010
Van der Horst, K., Oenema, A., Ferreira, I., Wendel-Vos, W., Giskes, K., Van Lenthe, F., & Brug, J. (2007). A systematic review of environmental correlates of obesity-related dietary behaviors in youth. *Health education research, 22*(2), 203-226.
Van Dyck, D., Cerin, E., Cardon, G., Deforche, B., Sallis, J. F., Owen, N., & de Bourdeaudhuij, I. (2010). Physical activity as a mediator of the associations between neighborhood walkability and adiposity in Belgian adults. *Health & Place, 16*(5), 952-960. doi: http://dx.doi.org/10.1016/j.healthplace.2010.05.011
Van Dyck, D., Cerin, E., Conway, T. L., De Bourdeaudhuij, I., Owen, N., Kerr, J., . . . Sallis, J. F. (2012). Perceived neighborhood environmental attributes associated with adults' transport-related walking and cycling: Findings from the USA, Australia and Belgium. *International Journal of Behavioral Nutrition and Physical Activity, 9*(1), 70. doi: 10.1186/1479-5868-9-70
Vandenberg, L. N., Hauser, R., Marcus, M., Olea, N., & Welshons, W. V. (2007). Human exposure to bisphenol A (BPA). *Reproductive Toxicology, 24*(2), 139-177. doi: http://dx.doi.org/10.1016/j.reprotox.2007.07.010
Walton, E. (2012). Resurgent Ethnicity among Asian Americans: Ethnic Neighborhood Context and Health. *Journal of Health and Social Behavior, 53*(3), 378-394. doi: 10.1177/0022146512455426
Walton, E. (2015). Making Sense of Asian American Ethnic Neighborhoods. *Sociological Perspectives, 58*(3), 490-515. doi: 10.1177/0731121414568568
Wang, M. C., Cubbin, C., Ahn, D., & Winkleby, M. A. (2008). Changes in neighbourhood food store environment, food behaviour and body mass index, 1981--1990. *Public Health Nutr, 11*(9), 963-970. doi: 10.1017/s136898000700105x
Wang, M. C., Kim, S., Gonzalez, A. A., MacLeod, K. E., & Winkleby, M. A. (2007a). Socioeconomic and food-related physical characteristics of the neighbourhood environment are associated with body mass index. *J Epidemiol Community Health, 61*(6), 491-498. doi: 10.1136/jech.2006.051680
Wang, M. C., Kim, S., Gonzalez, A. A., MacLeod, K. E., & Winkleby, M. A. (2007b). Socioeconomic and food-related physical characteristics of the neighbourhood

environment are associated with body mass index. *Journal of Epidemiology and Community Health, 61*(6), 491-498. doi: 10.1136/jech.2006.051680
Webster, T. F., Hoffman, K., Weinberg, J., Vieira, V., xf, nica, & Aschengrau, A. (2008). Community- and Individual-Level Socioeconomic Status and Breast Cancer Risk: Multilevel Modeling on Cape Cod, Massachusetts. *Environmental health perspectives, 116*(8), 1125-1129.
Wen, M., & Maloney, T. N. (2011). Latino Residential Isolation and the Risk of Obesity in Utah: The Role of Neighborhood Socioeconomic, Built-Environmental, and Subcultural Context. *Journal of immigrant and minority health, 13*(6), 1134-1141. doi: 10.1007/s10903-011-9439-8
Williams, D. R., & Collins, C. (2001). Racial residential segregation: a fundamental cause of racial disparities in health. *Public Health Rep, 116*(5), 404-416.
Williams, D. R., Mohammed, S. A., & Shields, A. E. (2016). Understanding and effectively addressing breast cancer in African American women: Unpacking the social context. *Cancer, 122*(14), 2138-2149. doi: 10.1002/cncr.29935
Williams, D. R., Yan Yu, Jackson, J. S., & Anderson, N. B. (1997). Racial Differences in Physical and Mental Health. *Journal of Health Psychology, 2*(3), 335-351. doi: 10.1177/135910539700200305
Wong, C. K., Horn-Ross, P. L., Gee, G. C., Shariff-Marco, S., Quach, T., Allen, L., . . . Gomez, S. L. (2016a). Strategies for recruiting representative samples of Asian Americans for a population-based case-control study. *Journal of Epidemiology and Community Health, Manuscript revised and resubmitted*.
Wong, C. K., Horn-Ross, P. L., Gee, G. C., Shariff-Marco, S., Quach, T., Allen, L., . . . Gomez, S. L. (2016b). Strategies for recruiting representative samples of Asian Americans for a population-based case–control study. *Journal of Epidemiology and Community Health*.
World Health Organization. (1998). Obesity: preventing and managing the global epidemic: report of a WHO consultation on obesity, Geneva, 3-5 June 1997.
World Health Organization Expert Consultation. (2004). Appropriate body-mass index for Asian populations and its implications for policy and intervention strategies. *Lancet, 363*(9403), 157-163. doi: 10.1016/s0140-6736(03)15268-3
Wright, R., Ellis, M., & Parks, V. (2005). Re-Placing Whiteness in Spatial Assimilation Research. *City & Community, 4*(2), 111-135. doi: 10.1111/j.1540-6040.2005.00107.x
Xie, Y., & Greenman, E. (2011). The social context of assimilation: Testing implications of segmented assimilation theory. *Social science research, 40*(3), 965-984. doi: http://dx.doi.org/10.1016/j.ssresearch.2011.01.004
Yi, S. S., Roberts, C., Lightstone, A. S., Shih, M., & Trinh-Shevrin, C. (2015). Disparities in meeting physical activity guidelines for Asian-Americans in two metropolitan areas in the United States. *Ann Epidemiol, 25*(9), 656-660.e652. doi: http://dx.doi.org/10.1016/j.annepidem.2015.05.002
Yost, K., Perkins, C., Cohen, R., Morris, C., & Wright, W. (2001). Socioeconomic status and breast cancer incidence in California for different race/ethnic groups. *Cancer Causes & Control, 12*(8), 703-711. doi: 10.1023/a:1011240019516
Youlden, D. R., Cramb, S. M., Yip, C. H., & Baade, P. D. (2014). Incidence and mortality of female breast cancer in the Asia-Pacific region. *Cancer biology & medicine, 11*(2), 101-115.

Young, R., Macdonald, L., & Ellaway, A. (2013). Associations between proximity and density of local alcohol outlets and alcohol use among Scottish adolescents. *Health & Place, 19*, 124-130. doi: http://dx.doi.org/10.1016/j.healthplace.2012.10.004

Zhang, J., Dhakal, I. B., Zhao, Z., & Li, L. (2012). Trends in mortality from cancers of the breast, colon, prostate, esophagus, and stomach in East Asia: role of nutrition transition. *European Journal of Cancer Prevention, 21*(5), 480-489. doi: 10.1097/CEJ.0b013e328351c732

Zhang, S. M., Lee, I.-M., Manson, J. E., Cook, N. R., Willett, W. C., & Buring, J. E. (2007). Alcohol Consumption and Breast Cancer Risk in the Women's Health Study. *Am J Epidemiol, 165*(6), 667-676. doi: 10.1093/aje/kwk054

Ziegler, R. G., Hoover, R. N., Pike, M. C., Hildesheim, A., Nomura, A. M. Y., West, D. W., . . . Hyer, M. B. (1993). Migration Patterns and Breast Cancer Risk in Asian-American Women. *J Natl Cancer Inst, 85*(22), 1819-1827. doi: 10.1093/jnci/85.22.1819