

LONGITUDINAL EFFECTS OF ACCULTURATION ON ALCOHOL USE
AMONG VIETNAMESE AND CAMBODIAN IMMIGRANT FAMILIES
IN THE UNITED STATES

by

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ABSTRACT

Background: Asian Americans are the fastest growing racial population in the United States. Rates of alcohol use are increasing among several Asian nationalities, however, Asians are often treated as a singular group in research studies masking potential differences in alcohol use prevalence or risk factors. Two such risk factors are acculturation and intergenerational cultural dissonance (ICD). This dissertation aimed to investigate: 1) the longitudinal impact of acculturation on alcohol use among Vietnamese and Cambodian women in the U.S.; 2) the impact of ICD on alcohol use among their adolescents; and 3) whether the effect of ICD on alcohol use was mediated by adolescent depressive symptomatology.

Methods: Data came from the Cross Cultural Families Project (CCF), a five-year longitudinal study of 327 Vietnamese and Cambodian immigrant families in Washington State. Data were collected annually from an adult caregiver in the family (all women) and an adolescent. Linear mixed effects models were estimated to establish the longitudinal relationship of acculturation and alcohol use among the adult caregivers. Multiple logistic regression models were estimated to assess the impact of ICD on depression and alcohol use among the adolescents.

Results: Acculturation was not associated with alcohol use in the overall sample of adults, however, there were significant associations among a sub-sample of only those who reported any drinking. This suggests that acculturation did not impact alcohol use prevalence, but that it did impact the drinking pattern among those who consumed alcohol. Among alcohol consumers, higher degrees of biculturalism and traditional cultural identification were associated with lower levels of alcohol use, suggesting that

retention of traditional Vietnamese and Cambodian culture is a protective factor for alcohol use problems. Among the adolescents, higher levels of ICD significantly predicted alcohol use, a relationship that was partially mediated by depression symptoms.

Conclusions: Clinicians should be cognizant that aspects of cultural identification are important contributors to drinking patterns among alcohol consumers from Vietnamese and Cambodian immigrant families. Family interventions should be targeted towards reducing conflicts caused by ICD and bicultural effectiveness training. Targeting ICD has the potential to reduce both alcohol use risk and depressive symptomatology among this population.

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Chapter 1. Introduction

1.1 Statement of the problem

Immigration to the United States is occurring at the highest rate since the late 1800's (Caplan, 2007). Asian Americans, in particular, are the fastest growing racial population in the U.S. with over 18.2 million estimated as of 2010. By 2050, the Census Bureau projects there will be 40.6 million Asian Americans, comprising 9% of the U.S. population (Centers for Disease Control and Prevention, 2013; U.S. Census Bureau, 2010). Vietnamese and Cambodian populations represent two of the most recent immigrant groups to the U.S. (Lim, Stormshak, & Falkenstein, 2011).

Following the end of the Vietnam War in 1975, the first of two major waves of Vietnamese began immigrating to the United States after retaliatory threats from the ruling Communist government (Povell, 2005). Immigration continued at a steady rate through the 1990's and there are currently over 1.7 million Vietnamese-Americans living in the U.S., constituting the fourth largest Asian American demographic (U.S. Census Bureau, 2010). Many Cambodians began immigrating to the U.S. in the same time period to escape the brutal rule of the Khmer Rouge. Cambodians arriving to the United States were often separated from their families after years in asylum or refugee camps (Koch-Weser, Liang, & Grigg-Saito, 2006). Immigration continued throughout the 1980's, with currently over 270,000 Cambodian-Americans living in the U.S. Though rates of immigration have slowed somewhat for both groups, the Vietnamese-American population grew by over 72% (U.S. Census Bureau, 2000a, 2010) and the Cambodian-American population grew by over 97% between 2000-2010 (U.S. Census Bureau, 2000b, 2010).

Despite the rapid increase in immigration among these groups, we know very little about many health behaviors among them, including the prevalence or correlates of alcohol use and misuse. This lack of focus has been, in part, due to the assumption that alcohol misuse is not a public health problem among Asian American populations (Cheng et al., 2012; Fang, Barnes-Ceeney, & Schinke, 2011; Iwamoto et al., 2010). Studies have indeed found that alcohol use disorder prevalence is low among Asian Americans, but the majority of these studies define Asians as one singular group, potentially masking important differences with regards to drinking prevalence and risk factors (Wang, Kviz, & Miller, 2012). This is problematic because there is indication that alcohol use rates are increasing among specific Asian subgroups (Wang, Kviz et al., 2012). Furthermore, qualitative studies of Asian American communities have found that adolescent alcohol use and mental health were two of the most widely identified problems by community members (Lee et al., 2009)

Acculturation and intergenerational cultural dissonance (ICD), a difference in acculturation between children and their caregivers, have been identified as risk factors for several health outcomes including depression and alcohol use problems among immigrants (Choi, He, & Harachi, 2008; Gupta, Leong, Valentine, & Canada, 2013; Kim, Chen, Li, Huang, & Moon, 2009; Park, Anastas, Shibusawa, & Nguyen, 2014; Suinn, 2010; Unger, Ritt-Olson, Wagner, Soto, & Baezconde-Garbanati, 2009; Wong et al., 2007). The majority of studies on acculturation and substance or alcohol use have been conducted among Hispanic populations. Studies conducted with Asians have been limited by: 1) a lack of focus on specific Asian nationalities (e.g. Cambodian and Vietnamese) thereby ignoring potentially significant between-group differences; 2) limited measures

of acculturation, ICD, and other important risk factors; 3) predominance of cross-sectional designs (Ho, 2008; Wang et al., 2012; Ying & Han, 2007); and 4) a paucity of investigation into mediators and moderators of acculturation-alcohol use relationships (Hahm, Lahiff, & Guterman, 2004; Lim, Stormshak, & Falkenstein, 2011; Suinn, 2010).

1.2 Specific aims

Investigation into the association of acculturation with alcohol use can be helpful in targeting intervention strategies for drinking problems among immigrant adults and their children. However, this relationship is not currently well understood among Asian immigrant families due to the gaps in the literature highlighted above (Wang, Kviz et al., 2012). The studies described in this dissertation build upon previous research by investigating (1) the longitudinal relationship between acculturation and alcohol use among Vietnamese and Cambodian immigrant adults living in the United States; (2) the degree to which ICD is associated with alcohol use among adolescents from Vietnamese and Cambodian immigrant families; and (3) the potentially mediating role of adolescent depression on the ICD-alcohol use relationship.

The aims of this dissertation that will be described in subsequent chapters were achieved through secondary analysis of data from the Cross Cultural Families Project (CCF), a 5-year longitudinal study of 327 Vietnamese and Cambodian families conducted between 2001 and 2005. An adult caregiver (all female) and an adolescent from each family participated in the study and data were collected annually from both family members for five years. All of the caregivers in the study were immigrants who were born in either Cambodia or Vietnam and migrated to the U.S; 60% of the adolescents in the study sample were born in the U.S with the remainder born outside the country. For

many caregivers in the sample, their arrival constituted a forced migration and many arrived in the U.S. with legal refugee status. The results described in the dissertation are pertinent to recently arrived and future immigrant families from this region by informing prevention and intervention strategies for alcohol misuse.

The specific aims of the dissertation are:

Study Aim 1: To investigate the longitudinal impact of acculturation on alcohol use among Vietnamese and Cambodian immigrant adults in the U.S. and the extent to which this relationship varies by nationality and over time.

Study Aim 2: To assess how a difference in acculturation (i.e. ICD) between Vietnamese and Cambodian caregivers and their adolescent children impacts prevalence of alcohol use among the adolescents and whether this relationship differs by nationality, sex, acculturation, or nativity.

Study Aim 3: To investigate the potentially mediating role of adolescent depression in the ICD-alcohol use relationship.

The investigation of these aims begins to fill significant gaps in the literature by: (1) utilizing validated, multidimensional scales of acculturation with reports from caregivers and adolescents; (2) employing a longitudinal design; (3) focusing on two specific Asian subgroups (Cambodian and Vietnamese); and (4) investigating the complex relationships of acculturation, ICD, depression, and alcohol use through multiple statistical methods, including mixed effects modeling and mediational approaches.

1.3 Dissertation outline

The dissertation includes eight chapters. This first introductory chapter has summarized the public health problem, highlighted the current gaps in the literature, and outlined the study aims that attempt to fill some of these gaps.

The second chapter will provide the background and context of our study population. The relevant political history will be outlined first, detailing the circumstances in Cambodia and Vietnam that led to large numbers being forced from their homes and eventually migrating to the U.S. in the 1970's and 1980's. We will then discuss the migration process itself, including time spent in refugee camps and immigration to the U.S. A discussion of the adjustment of these two groups post-migration will follow with a particular emphasis on Cambodian and Vietnamese families that settled in the Seattle area, the setting of the CCF project. Finally, the cultures of the two groups will be discussed, including ethnicity, family structure and the role of women, religion, and concluding with the respective cultural norms around alcohol use.

Chapter 3 will discuss the scientific literature on our outcomes and predictors of interest in this dissertation. This will include a review of alcohol use, acculturation, ICD, depression, and trauma among Asian American adults and adolescents. The chapter will conclude with a conceptual framework depicting the relationship between the three study aims.

Chapter 4 will detail the methods used to undertake the three study aims. The background of the CCF project will be outlined including recruitment of study participants and interview procedures. The study measures will be described in detail and the statistical analyses used to accomplish each aim will be provided.

Chapters five through seven will address each of the above-stated study aims in turn. In Chapter 5, we will investigate the role of acculturation in impacting alcohol use among Vietnamese and Cambodian adult caregivers. We will also explore whether that relationship varies over time or between the two nationalities. In Chapter 6 we will examine the adolescents of these caregivers. Specifically, we will investigate if differential acculturation strategies between the adolescents and caregivers (ICD) are associated with adolescent alcohol use and, if so, whether that relationship varies by several characteristics such as sex, nationality, nativity, or adolescent acculturation. Having established the ICD-alcohol use relationship, Chapter 7 will explore whether that association is mediated by adolescent depression. Each of these three chapters will be a self-contained study that includes its own background, methods, results, and discussion section.

The 8th and final chapter will serve as the Discussion. The findings from the three preceding chapters will be summarized. Based on these findings the implications for future research will be addressed with specific emphasis on the measurement of acculturation and ICD. Clinical and practical implications for alcohol use interventions among Vietnamese and Cambodian adults and adolescents will then be presented. The dissertation will conclude with a discussion of study limitations, strengths, and public health significance.

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Chapter 2. Background

Alcohol use among specific Asian nationalities in the United States has been under-studied due, in part, to the prevailing assumption that alcohol abuse is not a problem among these populations (Cheng, Lee, & Iwamoto, 2012; Fang, Barnes-Ceeney, & Schinke, 2011; Iwamoto, Corbin, & Fromme, 2010). Qualitative research has indicated that this assumption is prevalent among many Asian American populations as well: a majority of adults in focus groups believed that alcohol use was not an issue in their communities and, further, that their own cultural and religious beliefs would prevent alcohol use problems among their children (Asian American Health Initiative, 2008; Lee, Ma, et al., 2009). Reports from children and adolescents from these families, however, have indicated that not only is drinking common among their generation, but that in addition to drinking socially, drinking with the explicit intent to become inebriated is prevalent (Asian American Health Initiative, 2008). Additional qualitative work with Asian American adolescents found that communication within their families was “not very expressive” leading to communication difficulties with their caregivers and parents (Lee, Juon, et al., 2009).

The discrepant within-family findings underscore the complex nature of alcohol use behavior among Asian immigrant families. Understanding the political, historical, cultural, and familial context of the Cambodian and Vietnamese immigrants who settled in the United States is critical before considering the roles that acculturation and intergenerational conflict may have on adult and child alcohol use among these families. This second chapter of the dissertation will provide the context within which the subsequent chapters and statistical analyses regarding acculturation and intergenerational

cultural dissonance must be framed. The chapter will begin with a summary of the relevant political history (1950's-1980's) in Cambodia and Vietnam followed by a discussion of how the political situation necessitated a forced migration for many families. The chapter will then focus on adaptation to life in the United States among families following migration. There will be a specific emphasis on those that settled in Washington State, the location of the Cross Cultural Families Project (CCF), the data source for the subsequent dissertation aims. The final section of the chapter will focus on culture: all of the political and migration history to be discussed has taken place within the context of two distinct cultures. This section will discuss what those cultures entail, how they have changed, and how alcohol use is viewed within those cultures. Throughout the chapter, differences and similarities between the two nationalities will be highlighted and relevant information from the CCF will be presented.

2.1 Political history

2.1.1 Cambodia

Following its independence from France in 1953, Cambodia was ruled as an autocracy with Prince Norodom Sihanouk serving as the de facto leader (Wetzell, 2008). The years of Sihanouk's rule were tumultuous and included an assassination attempt, constitutional amendments that permitted him to stay in power for life, and the breakout of civil war in neighboring Vietnam (Chandler, 1993). Although initially successful, Sihanouk's attempts to keep Cambodia neutral in the Vietnam War and to prevent an all-out regional conflict ultimately failed when, due to close ties with China, in 1965 he allowed the North Vietnamese to establish base camps within Cambodia and China to transport arms and supplies to the North Vietnamese over Cambodian land (Kuan Yew,

2013). This pact coupled with increasing political repression would ultimately lead to his overthrow in 1970 by his Prime Minister, General Lon Nol, who led a coup with a faction supporting a more pro-Western (i.e., anti-North Vietnamese) foreign policy (Kuan Yew, 2013).

Nol appointed himself President and served in that role until 1975 declaring Cambodia the “Khmer Republic” (Chandler, 2008). As with Sihanouk before him, Nol’s reign was notable for its instability: he suffered a stroke in 1971 with his health further declining thereafter; he dissolved the Cambodian Parliament, the “National Assembly”, that same year; and his government was constantly under threat of coup from other rebel groups (Chandler, 2008). Unrest was magnified following the invasion of Cambodia by the U.S. military and South Vietnam in 1970. The effort aimed to track down North Vietnamese troops and destroy Viet Cong bases that had been permitted during Sihanouk’s rule. Meanwhile, Sihanouk, deposed from power and living in exile in China, threw his support behind the Khmer Rouge, a communist rebel group in Cambodia who were allied with North Vietnam (Chandler, 1993; Mattson, 1993). Cambodia thus became embroiled in a civil war between the Khmer Rouge and Nol’s government. Nol was hugely reliant on financial aid from the United States to stave off the Khmer Rouge offensive but without actual military assistance, his government and Phnom Penh fell to the Khmer Rouge in April 1975 (Chandler, 1993).

Upon seizing power, the Khmer Rouge reinstated Sihanouk as head of state, but this was a largely symbolic position and within a year of return he was forced into house arrest (Kuan Yew, 2013). Actual power of the Khmer Rouge was wielded by its leader, Pol Pot. Over the next four years, Pol Pot would lead the Khmer Rouge to commit

horrific atrocities in Cambodia, comparable to those committed in Nazi Germany, and which would become popularly known as the “killing fields” (Kinzie, Fredrickson, Ben, Fleck, & Karls, 1984; Kuan Yew, 2013).

The regime intended to institute a form of agricultural communism based on Maoist principles in which the country was entirely self-sustaining; Pol Pot, for example, refused to purchase goods and supplies from outside the country (Kaslow, 2013; Short, 2005). Within weeks of seizing power, the government forced the evacuation of Phnom Penh and other major cities and towns, upwards of two million people, a forced migration in which family members were often purposefully separated from each other. It was thought that urban Cambodians needed to be re-educated because of their capitalist tendencies (Short, 2005). Thousands of people were killed through malnutrition and disease during these long evacuations to rural areas; those who refused to leave their homes were executed (Kiernan, 2002). Basic human rights were suspended; schools, churches, and public government buildings were closed; religious and traditional Khmer practices were forbidden (Northwestern Law Center for International Human Rights, 2014). After this forced relocation into rural areas, most Cambodians were forced to perform grueling manual labor, with little rest and almost no food (Frey, 2009; Northwestern Law Center for International Human Rights, 2014). Thousands died from starvation, preventable illness due to a lack of medication, and exhaustion (Kiernan, 2002).

In addition to the forced migration, labor, and starvation of thousands of citizens, the Khmer Rouge was also responsible for routine executions of former political enemies, ethnic Vietnamese, Chinese, and Thai individuals, and “intelligentsia” and others who

were educated or held professional positions (Frey, 2009). Those who were not executed immediately were held in prisons and often subjected to torture, including by starvation (Chandler, 1993; Frey, 2009). In total, it is estimated that from 1975 to 1979 between 1.5 and 3 million Cambodians were killed as a result of the Khmer Rouge, or between 20 and 40 percent of the total population, due to executions, starvation, and disease (Mollica et al., 1993). As many as 650,000 additional people died in the year after the fall of the regime due to continued starvation and remnants of lingering Khmer Rouge policies (Brinkley, 2012). In addition to the terrible loss of human life and suffering, traditional Cambodian culture was also severely affected as the Khmer Rouge banned all traditional cultural practices during its reign (Wetzel, 2008). The economic toll was similarly devastating: by the mid-1980's, Cambodia had the world's lowest annual income at approximately \$50 per capita (Rumbaut, 1991).

Although temporarily allies due to a mutual interest in having a communist government in power, relations between the Khmer Rouge and Vietnamese governments began quickly deteriorating due to long-standing ethnic tensions between the two countries. Pol Pot increasingly viewed Vietnam as intent on controlling the entire Southeast Asian region, a fear he believed was borne out when Vietnam signed a cooperation pact with neighboring Laos in 1977 (Udom Deth, 2009). Pol Pot also erroneously believed that his close ally, China, would back a preemptive Cambodian aggression into Vietnam. The Khmer Rouge therefore invaded Vietnam in mid-1977 and also executed ethnic Vietnamese living in eastern Cambodia (Udom Deth, 2009). In response, Vietnam unleashed a bombing campaign and worked to incite a revolt among ethnic Vietnamese living in Cambodia and those disaffected by the Khmer Rouge.

Ultimately, in December 1978, the Vietnamese government determined the only solution was a complete overthrow of the Khmer Rouge and sent a military force of over 100,000 troops into Cambodia backed by additional troops made up of former Khmer Rouge and communist party members who had been exiled by Pol Pot (*Cambodia: A Country Study*, 1987; Udom Deth, 2009). By January 1979, Phnom Penh had fallen to the Vietnamese and the Khmer Rouge's reign was over (*Cambodia: A Country Study*, 1987).

Although defeated and removed from power, Pol Pot and the Khmer Rouge remained active as an insurgent group in Cambodia throughout the 1980's. International support was minimal for the newly created and Vietnam-backed People's Republic of Kampuchea government in Cambodia (Udom Deth, 2009). International aid was also slow to reach the population and repeated guerilla-style attacks from Khmer Rouge rebels made living conditions extremely poor throughout the 1980's. The Vietnamese finally withdrew from Cambodia in 1991 following an international peace agreement and the United Nations sent a peacekeeping force to the country to oversee a transition of power and freely held elections in 1993. Sporadic attacks by the Khmer Rouge ceased completely following the death of Pol Pot in 1998 (Udom Deth, 2009).

2.1.2 Vietnam

In 1945, following 70 years of French colonial rule in Vietnam, Ho Chi Minh, leader of the Vietnamese communist party known as the Viet Minh, returned from 30 years of exile to create the Democratic Republic of Vietnam and declare its independence. The window of opportunity had been created by the Japanese occupation of Southeast Asia during World War II. Once Japan surrendered to the United States, Ho seized the opportunity before the French retained control and the Japanese aided his

effort by giving their arms to the Vietnamese before departing the country (Asian Studies Center, Michigan State University, 2014). The French-supported emperor of Vietnam, Bao Dai abdicated his throne and was exiled (LaBorde, 2014).

In 1946, however, the French returned to regain control of their former colony, supporting the return of Bao Dai and southern Vietnamese who were opposed to Ho's communist government (Asian Studies Center, Michigan State University, 2014; LaBorde, 2014). Rule in Saigon and southern Vietnam was returned to French control and Ho was forced to retreat into the north where he declared a separate government (LaBorde, 2014). Fighting between the sides, later known as the French-Indochina war, continued until 1954. Up to 300,000 Viet Minh troops and as many as 400,000 civilians were killed during the war (Dommen, 2001; Olson & Roberts, 2014). The French finally withdrew in 1954 but fighting continued between the North and South Vietnamese. The Geneva Accord of 1954 officially divided Vietnam into two countries, North and South, at the 17th parallel in an effort to end the conflict (LaBorde, 2014). Hostilities between the sides continued, however, fueled in part by the Cold War, with Ho and the communist government in the North accepting aid from the Soviet Union beginning in 1955 (LaBorde, 2014), and in that same year South Vietnam receiving financial aid and military assistance (in the form of "advisors") from the U.S. upon the request of the South's new leader Ngo Dinh Diem who had defeated Bao Dai in a referendum (LaBorde, 2014; LePoer, 2011).

Diem's government was tenuous in the early 1960's due to several communist insurgencies within South Vietnam (Asian Studies Center, Michigan State University, 2014). In response, President Kennedy dedicated \$65 million for military equipment and

\$136 million for economic aid in addition to 3,200 U.S. military personnel (LePoer, 2011). Diem's government continued to grow more repressive, however, and he was eventually assassinated during a subsequent insurgency; one of his generals, Duong Van Minh became head of state following the successful coup in 1963 (LePoer, 2011).

Following the death of Diem, the U.S. involvement in Vietnam escalated quickly, such that there were over 200,000 American troops in the country by the end of 1964, no longer in a strictly advisory role but now full combatants in the war on the side of South Vietnam (Asian Studies Center, Michigan State University, 2014). At the height of U.S. involvement in 1968, American troop levels exceeded 500,000 (Asian Studies Center, Michigan State University, 2014). As casualties mounted in large numbers through the latter 1960's, support for the war both in the U.S. and among the South Vietnamese plummeted (LePoer, 2011).

Peace negotiations began in 1970 but it took thousands of additional casualties and two years of negotiating before the sides were able to come to an agreement. In January 1973, the Paris Peace Accords were signed. The agreement called for a cease fire, removal of all U.S. troops, and for President Thieu of South Vietnam to continue in his role as head of state in a future unified Saigon government (LePoer, 2011). Although the treaty was signed, neither side abided the cease fire and fighting continued through to 1975 when the U.S. fully withdrew completely from Vietnam (LaBorde, 2014). With North Vietnamese forces advancing on Saigon, President Thieu resigned and later fled to Taiwan (LaBorde, 2014). In April 1975, the North Vietnamese communist forces took control of Saigon, effectively ending the war that had lasted for 30 years. A study by Hirschman and colleagues (1995) estimated that during the years of U.S. involvement

alone (1965-1975), approximately one million Vietnamese died as a result of the war. Several crimes against humanity were documented during the conflict committed by both sides, including the murder of civilians, sexual assaults, and torture (De Silva, 1978; Nelson, 2008).

The formal reunification of North and South occurred in 1976 resulting in the newly named Socialist Republic of Vietnam. The new ruling government led by Premier Pham Van Dong attempted to institute socialist economic policies in the southern regions of the country which were previously capitalist (Shinn, 2011). As a means to fully implementing these policies, hundreds of thousands of Vietnamese, primarily those who had been loyal to the U.S./South Vietnamese effort in the war, intellectuals, and other former community leaders in the South, were forced into “reeducation camps.” Forced labor in the camps was common and there were also reports of torture and executions (Shinn, 2011). In 1982, there were approximately 120,000 Vietnamese in these camps, a number that dropped to about 40,000 by 1985. In order to escape the camps, a number of Vietnamese fled the country by boat (Shinn, 2011). The government refuted claims that they executed political prisoners, but some reports estimate that as many as 65,000 political opponents were killed in the years following the end of the war (Shinn, 2011).

As in Cambodia, the 1980’s were a difficult decade for the newly reunified nation. Vietnam’s invasion of Cambodia in the late 1970’s to depose the Khmer Rouge had lasting detrimental effects on its economy well into the next decade and the action was denounced by the international community (Pike, 2011). In order to build the socialist economy, the government passed a series of “five-year” plans beginning in 1976 (Cosslett & Shaw, 2011). Economic growth was incredibly slow, however, and the

country remained heavily dependent upon foreign aid, primarily from the Soviet Union (Cosslett & Shaw, 2011). Unemployment remained high throughout the decade and food shortages were common (Cosslett & Shaw, 2011).

Starting in the latter half of the 1980's, Doi Moi, or "renovations" were enacted to boost the economy. The Doi Moi reforms included a slight relaxation of the strict communist principles of the first five-year plan from 1976 in an effort to modernize and invite foreign investment (Asian Studies Center, Michigan State University, 2014). The reforms helped Vietnam's economy become one of the fastest growing worldwide in the 1990's. By the early 1990's, Vietnam had re-established diplomatic ties with most Western nations, including the United States in 1995 (U.S. Department of State, 2014).

2.2 Migration

The complex humanitarian situations during the Cambodian and Vietnamese civil wars resulted in massive emigration from those countries that lasted throughout the conflicts and for years beyond, creating a population of refugees eventually totaling over 2 million (Rumbaut, 1996). This section will discuss the specific migration experiences of Cambodian and Vietnamese refugees through to their resettlement in the United States.

2.2.1 Cambodia

The tightly controlled reign of Pol Pot and the Khmer Rouge made escape from Cambodia nearly impossible, though some were able to make it out of the forced labor camps and cross an international border. This was an inherently risky endeavor as being caught likely meant execution or torture. Following the Vietnamese invasion of Cambodia in 1978, however, with Pol Pot's attention turned towards pushing the Vietnamese back, the number of refugees emigrating from Cambodia increased

substantially (Rumbaut, 1996). Yet another large increase in refugees occurred immediately after the fall of the Khmer Rouge in 1979 (Rumbaut, 1996). Several hundred thousand would eventually cross into Thailand refugee camps after escaping the Khmer Rouge. Thousands more would continue emigrating from Cambodia throughout the 1980's due to economic instability, food insecurity, and guerilla attacks from the remaining Khmer Rouge forces (Rumbaut, 1996).

In many cases, Cambodians fleeing were initially denied entry into Thailand by border officials. Instead, rudimentary settlements were established along the nebulous Cambodian-Thai border (Program on Forced Migration and Health, Columbia University, 2007). Conditions in the camps were dreadful with few resources and little food; many of the refugees were suffering from hunger and diseases such as malaria were highly prevalent (Program on Forced Migration and Health, Columbia University, 2007). The International Red Cross and United Nations agencies eventually established a presence at the camps making them more semi-permanent bases (Program on Forced Migration and Health, Columbia University, 2007). The camps ranged in size along the border from a few thousand to several hundred thousand. Housed in the camps were former Khmer Rouge soldiers, Khmer Serei (anti-Khmer Rouge forces) and many civilians. The camps were frequently caught in the middle of fire between invading Vietnamese and remaining Khmer Rouge troops (Program on Forced Migration and Health, Columbia University, 2007). Camps were generally overcrowded and rife with disease and violence, some of which was perpetrated by the camp guards (Wetzel, 2008).

By the end of 1979, the Thailand government finally agreed to begin allowing Cambodian refugees to formally cross the border into Thailand and be housed in “holding

centers,” or more permanent refugee settlements (Allegra, Nieburg, & Grabe, 1980; Program on Forced Migration and Health, Columbia University, 2007). Several thousand refugees, however, remained in the “make-shift” camps along the Thai border (Mortland, 1996). For those who fled to the camps during and immediately following the reign of the Khmer Rouge, the settlements were seen as temporary; a means to escape the horrors of the civil war and the subsequent Vietnamese invasion (Ledgerwood, 1990). Many had intended to return back to Cambodia once the violence ended (Mortland, 1996). Indeed, over 350,000 eventually returned back to Cambodia from Thailand and border camps with many having spent five or more years in the camps before returning home (Lynch, 1989). For many others, however, for whom return home was impossible or undesirable, repatriation to a third country was the option. Countries accepting the greatest number of Cambodian refugees included Australia, France, Canada, and the United States (U.S. Committee for Refugees, 1989; Wetzel, 2008).

Migration to the U.S. occurred in four principle waves (Mortland, 1996). The first small wave occurred in the early stages of the Khmer Rouge regime, between 1975 and 1977. This wave included approximately 6,000 people who were generally upper or upper-middle class and had the means and connections to the U.S. war effort or military personnel needed to escape the oppressive rule of Pol Pot (Gordon, 1987).

A second, larger wave of Cambodian refugees arrived in the U.S. in 1979 after the U.S. had increased the number of annual permitted refugees amidst international pressure (Mortland, 1996). This wave included approximately 10,000 from mainly rural areas of Cambodia who had fled the country before the Khmer Rouge came to power (Ebihara, 1985). The following year, 1980, marked the beginning of the third and largest wave

consisting of approximately 125,000 Cambodians (Mortland, 1996). This wave lasted through 1986 and comprised those who had fled the Khmer Rouge and often spent considerable time in Thai refugee camps. The fourth and final wave, totaling approximately 8,000, started in 1987 and lasted through 1993. This group was made up primarily of immigrants (i.e., not legal refugees) and many were resettled as part of a reunification process with families who had already arrived in the U.S. (Mortland, 1996). Many refugees' journeys to the U.S. were extended by 6-month stopovers in the Philippines; this was an effort by the U.S. government to prepare the refugees for U.S. culture and included English and Western hygiene trainings (Wetzel, 2008). In total, an estimated 150,000 Cambodian refugees were resettled throughout the United States (U.S. Committee for Refugees, 1992).

2.2.2 Vietnam

Vietnamese migration to the United States following the end of the war is typically described as occurring in three distinct waves (LaBorde, 2014; Rkasnuam & Batalova, 2014). The first of these waves occurred after the fall of Saigon and the withdrawal of U.S. forces from Vietnam. Approximately 130,000 Vietnamese were evacuated by the U.S. and have been described as largely “young, well educated, English speaking, urban dwellers... fifty-five percent were Catholic” (LaBorde, 2014). Many of these individuals were thought to have been loyal to the U.S. and South Vietnamese effort and in danger of reprisals from the new communist government (Rkasnuam & Batalova, 2014). Many fled with their families and spent a period of time on military bases before being resettled in the U.S. (LaBorde, 2014). The path for immigration was paved by the signing of the Indochina Migration and Refugee Assistance Act of 1975 by

President Ford that established a domestic resettlement program in the U.S. and permitted special status entry for the first-wave Vietnamese refugees (Mortland, 1996).

A second and much larger wave of migration began in 1978 and lasted through the mid-1980's (Wieder, 1996). Many in this wave were fleeing in an effort to escape the reeducation camps of Pham Van Dong and the invasion of Vietnam by China in 1979 (Wieder, 1996). Similar to the second wave of Cambodian refugees relative to the first, this group was characterized as a population from more rural areas and with lower socioeconomic status (LaBorde, 2014; Rkasnuam & Batalova, 2014). An estimated 500,000, including both Vietnamese and ethnic Chinese living in Vietnam who faced persecution from the government, are thought to have attempted emigration from Vietnam during this second wave with perhaps fewer than half surviving (LaBorde, 2014).

Unlike the first wave of Vietnamese refugees, the migration for the second wave was protracted and fraught with difficulty and violence (LaBorde, 2014; Wieder, 1996). Many attempted to flee by boat (this group has been referred to as the "boat people"), often including vessels that were overcrowded or otherwise unsafe for transport (LaBorde, 2014). Disease, boating accidents, and attack by pirates were common during these journeys (Holman, 1996; LaBorde, 2014; Wieder, 1996). Those who survived the voyages across the South China Sea often spent years in refugee camps in various Asian countries including Philippines, Thailand, Malaysia, Singapore, Indonesia and Hong Kong (Holman, 1996; Wieder, 1996). Similar to the camps on the Cambodian-Thai border, conditions in these camps were often poor; disease, malnutrition, and violence were common (LaBorde, 2014).

In the U.S., the “boat people” crisis was responded to in part through the passage of the Refugee Act of 1980 that was meant to be a more permanent legislative act for handling immigrants and refugees (the Indochina Migration and Refugee Assistance Act of 1975 was a more singular act to deal with that particular refugee situation) (Holman, 1996; Wieder, 1996). The 1980 legislation streamlined the various refugee policies that had been previously enacted in a piecemeal fashion, brought the U.S. definition of a refugee in line with that of the United Nations, and established an Office of Refugee Resettlement in the Department of Health and Human Services (Holman, 1996). The new Act helped to hasten the speed with which refugees could be resettled in the U.S. and an estimated 280,500 people entered the country during this second wave between 1978 and 1982 (Wieder, 1996).

A third wave of Vietnamese immigrants began arriving in the U.S. in the mid-1980’s through the 1990’s (Rkasauam & Batalova, 2014). Many in this wave were resettled in the U.S. as part of family reunification efforts similar to the latter waves of Cambodian refugees (Wieder, 1996). Although this group included fewer legal refugees than the second wave (Rkasauam & Batalova, 2014), a large number were former political prisoners who had spent considerable time in reeducation camps in which they may have been exposed to potentially traumatic events (LaBorde, 2014).

2.3 Traumatic events among Cross Cultural Families study participants

The Vietnamese and Cambodian women in the Cross Cultural Families Project (CCF) were active participants in the political and migration histories described above. In the subsequent chapters detailing acculturation and alcohol use amongst this population, it is important to keep this context in mind.

The Cambodians in the CCF had lived in the United States for an average of 16.2 years by 2001, the baseline assessment. This would entail a migration to the U.S. in the mid 1980's, towards the latter end of the third wave of Cambodian refugees. Recall that individuals in this wave were primarily those who had fled during and after the reign of the Khmer Rouge and often had spent considerable time in the camps located on the Cambodian-Thailand border. The average age of the Cambodian sample at baseline of CCF (2001) was 41. A Cambodian woman who was 41 in 2001 would have been born in 1960 during the rule of Prince Sihanouk; would have turned five the year he allowed the North Vietnamese to establish base camps in Cambodia; ten when he was overthrown by General Nol and Cambodia was invaded by the U.S. and South Vietnam; fifteen when Phnom Penh fell to the Khmer Rouge; and nineteen when the Khmer Rouge was ousted and many fled to the border refugee camps. In other words, these are Cambodian women who grew up and experienced their adolescence during a time of incredible conflict and violence. Ninety-four percent of Cambodian women in the CCF study entered the U.S. with legal refugee status and 97% had spent time in a refugee camp.

The Vietnamese in the sample had lived in the U.S. for 11 years at study baseline, suggesting that many immigrated in the late 1980's. This would constitute a migration during the late 2nd and into the 3rd waves of Vietnamese migration described above. Therefore, some of the Vietnamese women in our study may have fled Vietnam during the "boat people" crisis and spent considerable time in refugee camps before being resettled in the U.S., while still others in the third wave may have spent time in reeducation camps before being released. Others potentially were family members of those who had been resettled in the U.S. earlier in the decade. The average age of the

Vietnamese sample at baseline was 42. A Vietnamese woman who was 42 in 2001 would have been born in 1959, five years after the Geneva Accords had split Vietnam into North and South; she would have been four years old during the coup of Duong Van Minh in 1963; nine at the height of U.S. troop involvement in the war in 1968; sixteen in 1975 during the fall of Saigon; and twenty-three in 1982 when there were more than 120,000 Vietnamese in reeducation camps. Similar to the Cambodians in the study sample, these are women who grew up during a time of persistent war. Ninety-two percent of Vietnamese women were legal refugees upon arrival in the U.S., however, only 51% had spent time in camps before arriving.

We are unable to determine specifically the historical events experienced by women in the CCF study, but the data do suggest that there were significant amounts of trauma experienced by both groups. The most commonly reported trauma types among Cambodian women were a lack of food or water (77%), ill health without access to medical care (73%), lack of shelter (69%), and forced to change the way you think (52%). These events are in line with life under the rule of the Khmer Rouge. Among Vietnamese women, ill health without access to medical care (42%), lack of food or water (35%), lack of shelter (24%), and forced to change the way you think (20%) were also the four most commonly reported events. These may have occurred during the war itself or potentially during time in flight or in refugee camps. Notably, 26% of Cambodian women reported torture, likely during the time of the Khmer Rouge, compared to 5% of Vietnamese women.

The data indicate a difference in the number and type of traumatic events experienced between the groups. Cambodian women, on average, experienced

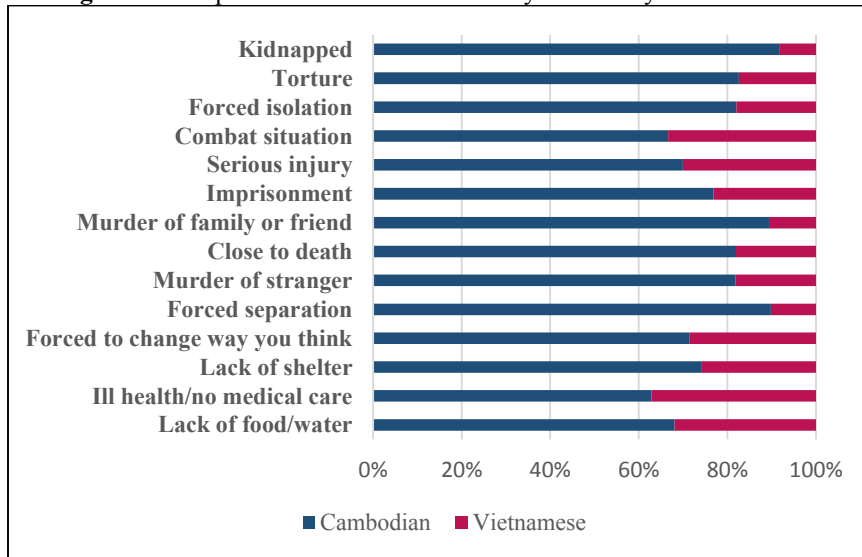
significantly more types of traumatic events than Vietnamese women (5.53 vs. 1.90; $p < .0001$). For every trauma type measured, Cambodians were more likely to have reported experiencing or witnessing the trauma than Vietnamese, except for sexual assault, for which there was no statistically significant difference ($p = .46$).

The total number of traumatic events reported by nationality are listed in Table 2.1. Figure 2.1 graphically displays the proportion of participants who experienced each traumatic event type by nationality.

Table 2.1 Trauma and community violence events experienced or witnessed (n=324)

Trauma type	Total Sample (n=324)	Cambodian (n=163)	Vietnamese (n=161)	χ^2	p value
	n (%)				
Lack of food or water	163 (55.8)	111 (77.1)	52 (35.1)	52.08	<.0001
Ill health without access to medical care	167 (57.2)	105 (72.9)	62 (41.9)	28.69	<.0001
Lack of shelter	135 (46.2)	100 (69.4)	35 (23.7)	61.58	<.0001
Imprisonment	65 (22.3)	50 (34.7)	15 (10.1)	25.50	<.0001
Serious injury	70 (24.1)	49 (34.0)	21 (14.3)	15.52	<.0001
Combat situation	66 (22.6)	44 (30.6)	22 (14.9)	10.27	<.01
Forced to change the way you think	105 (36.0)	75 (52.1)	30 (20.3)	32.08	<.0001
Sexual assault	21 (7.2)	12 (8.3)	9 (6.1)	0.55	.46
Forced isolation	39 (13.4)	32 (22.2)	7 (4.7)	19.30	<.0001
Being close to death	72 (24.7)	59 (41.0)	13 (8.8)	40.71	<.0001
Forced separation from family	79 (27.1)	71 (49.3)	8 (5.4)	71.27	<.0001
Murder of family member or friend	66 (22.7)	59 (41.0)	7 (4.8)	54.39	<.0001
Murder of stranger	77 (26.5)	63 (44.0)	14 (9.5)	44.74	<.0001
Kidnapped	37 (12.7)	34 (23.6)	3 (2.0)	30.73	<.0001
Torture	46 (15.8)	38 (26.4)	8 (5.4)	24.21	<.0001

Figure 2.1 Proportion of traumatic events by nationality



2.4 Adaptation to life in U.S.

2.4.1 Cambodian immigrants in America

A majority of Cambodians who resettled in the U.S. were from rural areas with few receiving much formal education (Song, 1986). Only 24% of Cambodian women in CCF graduated high school. Many individuals, especially those from rural areas in Cambodia, were not literate in Khmer to begin with and were unable to read or write Khmer or English upon arrival (Wetzel, 2008). Many were also unfamiliar with American culture, although some received cultural and vocational training at processing centers before arriving in the U.S. (Mortland, 1996). Often these educational classes, which emphasized English-language training and literacy, were continued to some extent after arrival in the U.S. as it was thought that these skills would be essential in improving vocational ability (Mortland, 1996). Availability of these services varied widely, however, depending on the place of resettlement: some Cambodian immigrants received

as many as two years of government-funded training while others were essentially made to find jobs immediately upon arrival (Mortland, 1996). Data from the 2000 census (one year before CCF baseline) revealed that only 29.5% of Cambodian-Americans thought that they spoke English “very well” (Dixon, 2006). In the CCF data, 28% of women reported that their written English was as good as or better than their Khmer and 30% thought the same of their ability to read English.

Language, of course, was only one of many challenges in adjusting to a new culture. Upon initial resettlement, many Cambodian immigrants were completely on their own. An initial strategy of refugee resettlement following the 1980 Refugee Act was to disperse refugees throughout the country so as not to burden any one particular area (Rumbaut, 1996). In fact, less than 50% of refugees were settled in the area of their choice (Rumbaut, 1996). Therefore, in many instances, refugees were settled in a place where they had no contacts, no employment, and could not read, speak, or write the language. Cambodians referred to the “Khmer Guided Placement Project” of the U.S. government, which aimed to place them in “low impact areas,” as the “Khmer Refrigerator Project” because of the often very cold and rural locations in which they were resettled (Rumbaut, 1996).

Despite the reality that many refugees were initially scattered throughout the country upon resettlement, a number of “hubs” of Cambodian refugees began forming. This phenomenon occurred due to secondary migration: Cambodian refugees, in essence, began seeking out others who had been resettled in other parts of the country. Secondary migration was common among all Southeast Asian refugees and it is estimated that 45% of those who had been resettled in 1975 had migrated to a different state by 1980

(Rumbaut, 1996). This initial secondary migration set the stage for larger communities of Cambodians to begin building in the U.S. Later waves of refugees and immigrants often were part of family reunification efforts further increasing the local Cambodian communities (Rumbaut, 1996).

One such hub of Cambodians created through secondary migration and reunification efforts was Washington State and, specifically, the Seattle/Tacoma area, the site of the CCF project. Over eight percent of the Cambodian population in the U.S. currently lives in Washington State numbering approximately 23,000, 84% of whom are in the Seattle metro area (Niedzwiecki & Duong, 2004; Pfeifer, 2010; U.S. Census Bureau, 2010). Sixty-four percent of families included in the CCF resided in low-income neighborhoods in the southern sections of Seattle. This is representative of most Cambodian families in the area that resettled in south Seattle and lived primarily in public housing, although in more recent years (after the conclusion of the CCF study), families have started purchasing their own homes and moving to other sections of the city (Wetzel, 2008).

There are strong ties within these Cambodian communities. In the White Center neighborhood of Seattle, where a large number of Cambodians reside, there is the Khmer Community Center of Seattle-King County which provides a number of services to residents such as tutoring, culture and language lessons and seminars, counseling, and various other types of support and information (Wetzel, 2008). Sixty-eight percent of Cambodians in the CCF reported that at least a few of their closest friends lived within a 3-block radius of their home; 39% had at least one family member living in the neighborhood as well; and the average household size was 5.5 persons, typically

including children and possibly extended family members. Sixty-three percent reported that they mostly or almost exclusively spent time with other Cambodians in their community. Practically speaking, this means that many families, although living in diverse urban neighborhoods, were also surrounded by many other Cambodians; in other words, they were not isolated. This may have implications in terms of the degree to which Cambodians in CCF felt they needed or wanted to adopt various aspects of American culture or the degree to which they felt capable of retaining aspects of traditional Cambodian culture.

The predominance of low-income housing among Cambodian immigrants is a reflection of the fact that economic opportunity has been a challenge for many who settled in the U.S. The Refugee Act of 1980 promoted a goal of “economic self-sufficiency” (Rumbaut, 1996), however, in reality this was difficult for many Cambodian refugees in the U.S. Seventy-two percent of Cambodian families in the CCF received some form of government assistance such as food stamps or the free/reduced lunch program. Finding employment proved difficult for many due to language barriers and poor education (Wetzel, 2008). Most commonly, Cambodians who settled in Washington worked in landscaping and janitorial positions. Over time, and among more recently arrived immigrants who often have more education, however, many Cambodians have started receiving higher paying jobs and owning their own businesses (Wetzel, 2008). Still, among the women in the CCF who arrived in the early to mid-1980’s, 38% were unemployed in 2001 and 43% were heading single-parent households.

Health has also been a serious concern among Cambodians since arriving in the U.S., including severe illness and premature death (Mortland, 1996). Compared to other

refugee populations, such as the Vietnamese, Cambodians often arrived with poorer health status (Wetzel, 2008), including high rates of tuberculosis, Hepatitis B, and intestinal parasites (Catanzaro & Moser, 1982). Further, the prevalence of mental health problems, including depression and post-traumatic stress disorder, remained high, even years after the Khmer Rouge (Berthold et al., 2014; Marshall, Schell, Elliott, Berthold, & Chun, 2005). Chronic comorbidity between PTSD and depression is high among Cambodian refugees in the U.S. and has been associated with physical health problems (Berthold et al., 2014). Although cultural barriers to receiving healthcare, such as mistrust of Western medicine and preference for alternative methods, have declined over time, structural barriers to receiving care, such as language, transportation, and high costs, have remained high (Berthold et al., 2014; Wong et al., 2006). In CCF, 62% of the sample rated their overall health as poor or fair and 38% as good, very good, or excellent. Fifty-four percent reported that their health was worse than a year ago; 46% reported that it was about the same or better.

Of course, the health and economic status of resettled Cambodian refugees was not an issue that affected only themselves; many arrived with children or had children soon after arrival. Among families in the CCF, 88% of Cambodian children were born in the U.S. after their parents had arrived (i.e., the “2nd generation”) and the average age of children not born in the U.S. was 5 upon arrival (i.e., the “1.5 generation”), thus their formative years all occurred in their new country. Many children have adopted U.S. cultural norms more readily than their parents, and have gained English language skills much more quickly (Wetzel, 2008). This has often led to a language barrier between children and their immigrant parents. Among many Cambodian-American children,

English is the only language they speak; they have never learned Khmer. Some community centers in Seattle have now started offering lessons to these youth (Wetzel, 2008).

Children in the CCF were all selected to participate from a public school district list. The schools they attended were diverse places in which the children were exposed to a number of different cultures. As described previously, however, at home and in their neighborhoods they were often surrounded by Cambodians and Cambodian culture. Potential preference for non-Cambodian culture or lifestyle among children can cause discord within the family. Further, many Cambodian children adopt roles and responsibilities typically reserved for their parents due to cultural and language barriers, such as translating at doctor's appointments and paying bills (Wetzel, 2008).

Differences in acculturation and adapting to life in the U.S. between immigrant parents and their children can cause significant familial conflict and have adverse consequences on the children: in the 1990's many Cambodian children became involved in gangs and many parents were concerned about substance and alcohol use (Wetzel, 2008). The impact that this within-family conflict may have on youth is discussed in Chapter 3.

2.4.2 Vietnamese immigrants in America

Many of the first-wave Vietnamese refugees were brought to resettlement centers; they were then interviewed, matched with sponsors, and resettled in areas throughout the country (Rumbaut, 1996). The number of Vietnamese refugees and immigrants grew steadily after 1975 through the three waves described previously, with an estimated 988,000 Vietnamese in the U.S. by the year 2000 (one year before the baseline CCF visit)

and the population is currently estimated at 1.3 million (Rkasanuam & Batalova, 2014). Similar to Cambodian refugees who arrived around the same time period, there was variability among Vietnamese immigrants in education and language ability. In general, the first wave of immigrants had higher socioeconomic status, more education, and better English language skills compared to the second wave (LaBorde, 2014). In the CCF, only 36% of Vietnamese women had graduated high school, a small proportion but still significantly higher than the 24% of Cambodian women in the CCF. Data from the U.S. Census Bureau in 2000 found that only 27% of Vietnamese believed they spoke English “very well” (Dixon, 2006). In the CCF data, 31% of Vietnamese women thought their written English was as good or better than their Vietnamese and 38% thought their ability to read English was as good or better than their ability to read Vietnamese; these proportions were both higher than the Cambodian women in CCF (28% and 30%, respectively). Compared to the total foreign born population in the U.S., Vietnamese immigrants were less likely to have proficiency in English and less likely to be college educated (Rkasanuam & Batalova, 2014).

A secondary migration also occurred among many Vietnamese refugees, similar to the Cambodians (Wieder, 1996). Although Los Angeles, San Jose, and San Diego were the most common destinations among Vietnamese immigrants during this secondary migration (Rumbaut, 1996), a large number ended up in Washington State as well (LaBorde, 2014), an estimated 4% of the overall Vietnamese-American population (Rkasanuam & Batalova, 2014). Over 40,000 Vietnamese currently reside in the Seattle area, comprising approximately 1.2% of the overall metro population (Rkasanuam & Batalova, 2014). A large proportion of Vietnamese in CCF also lived in lower-income

neighborhoods in south Seattle, similar to the Cambodian women in the sample. The Vietnamese (and also Cambodians) arrived in these neighborhoods at a time in U.S. history of economic recession and large increases in immigration, not only from Southeast Asia, but Cuba and Haiti as well. Elements of racism and xenophobia were significant challenges to immigrant families (Rumbaut, 1996).

Adjustment to life in the U.S. and Seattle specifically was helped perhaps, in part, by the large community of Vietnamese who settled in neighborhoods throughout the Seattle area. Eighty-two percent of Vietnamese in Washington State reside in Seattle. As with the Cambodians who settled here, there were several neighborhood supports including Vietnamese community centers providing various services throughout the city (LaBorde, 2014). Sixty-five percent of Vietnamese in CCF reported having at least a few of their closest friends living in their neighborhood and 21% had relatives in the same neighborhood. Household sizes were fairly large, with 5 people per household, on average. This suggests that there were opportunities for many of the Vietnamese women who settled in Seattle to practice their traditional culture and speak primarily Vietnamese within their own neighborhoods.

Economically, adjustment to life in the U.S. was difficult for many Vietnamese immigrant families, although this is improving and the employment rate has been better than among those who arrived from Cambodia (Rkasanuam & Batalova, 2014). In CCF, 76% of Vietnamese women were employed, a significantly higher percentage than the Cambodian women in CCF, although there was no difference in income or husband/partner employment (approximately 80% of husbands/partners were employed in both groups). A significantly smaller proportion of Vietnamese families compared to

Cambodian families in CCF received welfare (18% and 29%, respectively) and disability pensions (11% and 20%, respectively), however, there were no statistically significant differences between the groups in the number receiving free/reduced lunch programs (68% and 62%, respectively), unemployment benefits (7% and 3%, respectively) or food stamps (32% and 29%, respectively). Overall, 72% of Vietnamese families received some form of public assistance, an identical number to the Cambodian families.

Difficulties remained regarding gender roles and the types of employment that were available. For example, men were often forced to accept jobs that were of a lower status (and income level) than they had in Vietnam meaning that they typically had to take more than one position and/or other members of the household, such as his partner or wife, would have to find employment, something that was not typically done in Vietnam (LaBorde, 2014). Again, there were differences across waves of immigrants; first wave Vietnamese tended to progress to higher paying jobs more readily than those who arrived in the second wave (Wieder, 1996). Recently and among the latter waves of Vietnamese immigrants, employment has risen: in 2012, 69% of Vietnamese immigrants were employed, a rate slightly higher than the overall immigrant population (Rkasanuam & Batalova, 2014).

Upon arrival in the U.S. and going forward, many Vietnamese refugees and immigrants had significant physical and mental health problems, caused or exacerbated by the war, time in refugee camps, or the migration itself (especially for those who fled in boats) (LaBorde, 2014). Although rates of disease and mental health problems were generally lower than those of Cambodians, there was still high prevalence of TB, Hepatitis B, conjunctivitis, and widespread malnutrition, among others (LaBorde, 2014).

In CCF, 44% of Vietnamese reported their health as good, very good, or excellent compared to 38% of Cambodians, although 50% reported their health was worse than one year before.

After arrival in the U.S., health problems often went untreated due to lack of ability to pay for care and poor living conditions (LaBorde, 2014). Although health coverage is improving—22% of Vietnamese immigrants were uninsured in 2012 compared to 33% of the total foreign-born population (Rkasanuam & Batalova, 2014)—significant obstacles to care remain including cultural and linguistic barriers (Asian Health Center, 2014). Many Vietnamese may believe that aspects of Western medicine are too “hot,” throwing off the delicate balance of “yin/yang,” among other significant differences between traditional and Western medicine. They might, however, also be reluctant to share their preference or belief in traditional medicine with Western doctors because they feel it might result in a loss of respect (Asian Health Center, 2014). The number of traumas experienced and subsequent mental health problems may be fewer on average among Vietnamese compared to Cambodians (Rumbaut, 1996), however, those who experienced significant traumas have been found to have increased risk for chronic psychiatric morbidities (Steel, Silove, Phan, & Bauman, 2002).

Children of Vietnamese immigrants have often been used as interpreters at doctors’ appointments and in other contexts (LaBorde, 2014). This is viewed as a disruption of typical Vietnamese family dynamics (LaBorde, 2014). Children acting out, perhaps as a result of intergenerational cultural dissonance, also leads to stress among the parents. In focus groups, Vietnamese parents in the U.S. identified “appropriate ways to discipline their children” as the aspect of parenting behavior most influenced by living in

the U.S. compared to Vietnam (Harachi, 1997). In other words, U.S. cultural norms and laws have influenced, and in some cases changed, the ways in which Vietnamese mothers raise their children (Harachi, 1997). Although only 34% of the Vietnamese children in CCF were born in the U.S. compared to 87% of Cambodian children, the average age of those immigrating with their parents was four, indicating that as with the Cambodian sample, Vietnamese children spent their foundational years in the U.S., attending American schools and interacting with native-born Americans.

2.5 Culture

The above political, migration, and resettlement histories for Vietnamese and Cambodian refugees occurred within the context of two incredibly vibrant and unique cultures. This next section will discuss several elements of those cultures including: ethnicity, religion, the role of women in society, family structure and norms, and cultural attitudes about alcohol.

2.5.1 Ethnicity

Cambodia

The vast majority of Cambodians, approximately 90%, are ethnically Khmer, making the country among the most homogenous in Southeast Asia (Palmieri, 2010). They speak the Khmer language, the second most widely spoken Austroasiatic language after Vietnamese, which has influences from a number of other racial and ethnic group languages including Thai, Lao, Vietnamese, and Chinese (Jacob, 1993). Khmers also make up a significant ethnic minority in Vietnam (Clarke, 2001).

Five percent of the population are ethnically Vietnamese, 1% ethnically Chinese, and the remaining 4% are other ethnic groups including the Cham, who are primarily

Muslim, and the Khmer Loeu, which incorporates all of the indigenous groups of Cambodia including the hill tribe known as the Hmong (Bankston III, 2014; Clarke, 2001). Although the Cham are perceived as being highly integrated into Khmer society, even referring to themselves as “Khmer-Islam”, many of the other ethnic minorities remain culturally distinct from the majority Khmers (Palmieri, 2010). Ninety-seven percent of ethnic minorities in Cambodia, in fact, do not read Khmer. These ethnic minorities were heavily persecuted during the reign of the Khmer Rouge, with one declaration stating: “the various nationalities no longer exist in Kampuchea” (Clarke, 2001). In particular, a large number of Cham were killed, perhaps as many as half of ethnic Chinese were murdered, and many of the Khmer Loeu were forced into roles as laborers (Clarke, 2001). Ethnic Vietnamese were often forced to flee the country as well, only to find entry to Vietnam denied at the border because Vietnamese officials now considered them to be Cambodian (Clarke, 2001).

Despite the fact that ethnic minorities were persecuted during the rule of the Khmer Rouge and many fled the country, the Cambodian participants in the CCF are ethnically Khmer. The cultures of the various ethnic groups are quite distinct and so the remainder of this chapter will focus on Khmer culture when discussing Cambodia.

Vietnam

The largest minority group in Vietnam is the Kinh, also known as “Viet,” making up approximately 86% of the overall population (CIA, 2014b). The Kinh reside primarily in the major cities of Vietnam and along the Red River, central coastal, and Mekong deltas (LaBorde, 2014). People of Kinh ethnicity are also highly prevalent in southern China and the significant influence and presence of China in Vietnamese history is

noticeable in Vietnamese Kinh culture (Bankston III, C. & Hidalgo, D.A., 2007).

Vietnamese is the official language of the country, spoken widely by those of Kinh ethnicity (LaBorde, 2014). English is also now widely spoken in the country and among many younger Vietnamese immigrants to the U.S. (LaBorde, 2014)

Ethnic minority groups of Vietnam, which number at least 53, live primarily in hills and mountainous rural areas (Clarke, 2001; LaBorde, 2014). The largest of these tribes include the Tay, Thai, Muong, Khmer, Hoa, and Hmong, although none of these individual groups make up more than 1-2% of the total population (CIA, 2014b; Clarke, 2001). There is also a sizable ethnic Chinese population (Clarke, 2001).

Ethnic minorities within Vietnam have often been mistreated and distrusted by the government, in part due to their suspected aid and support for the U.S. and South Vietnamese during the war (Clarke, 2001). The Vietnamese government does not, in fact, recognize any “indigenous people,” but rather only ethnic minority groups who are distinct from the Kinh. Throughout the 1980’s, the government attempted to integrate these minority groups by promoting the Vietnamese language as the one true language of the country and introducing a cash economy into rural areas (Clarke, 2001). The government is wary about the reality that ethnic minority groups stretch across borders. For example, Cham live in Vietnam as well as Cambodia, and the Hmong have a small population in Cambodia, southern China, Vietnam, Laos, and Thailand (Clarke, 2001). The fear is that this international representation potentially reduces national spirit and by proxy, support for the government (Clark, 2001).

Vietnamese refugees who migrated to the U.S. constitute a very diverse group. In addition to the majority of Kinh who fled during and after the civil war a large number of

ethnic minority groups emigrated as well (LaBorde, 2014). Although difficult to estimate because the U.S. census does not delineate specific Vietnamese ethnicities, in addition to the ethnic groups mentioned previously, refugees who migrated to the U.S. were thought to include Cham, Hmong, and Montagnard (Degar), which comprised over 30 individual hill tribes (LaBorde, 2014). The remainder of the chapter will focus on cultural aspects specific to the Kinh ethnic group because that group makes up the majority of the CCF sample.

2.5.2 Religion

Cambodia

Buddhism, and specifically Theravada Buddhism, has been declared the official religion of Cambodia and is practiced by over 95% of Cambodians (CIA, 2014a; Wetzel, 2008). Small proportions also practice Islam (2%), Christianity (0.5%), and other religions (1%) such as animism (CIA, 2014a). In CCF, 89% of Cambodian women reported practicing Buddhism, 7% Christianity, 3% Islam, and 1% other.

Religion is an important aspect of everyday life, guiding the ways in which many Cambodians choose to live and also is the center of many social activities (Wetzel, 2008). In CCF, 28% reported that religion was “somewhat important” in their lives and a huge majority, 70% reported that it was “very” or “extremely” important; only 2% reported that religion was not important. The larger proportion of Christians among the CCF sample (7%) relative to data from Cambodia (0.5%) may be due to individuals converting from Buddhism to Christianity during their time in refugee camps or upon arrival in the U.S., which was not uncommon among Cambodian refugees (Bankston III, 2014).

Theravada Buddhism, also known as Hinayana and “the teaching of the elders,” is considered to be a more orthodox, conservative school of Buddhism compared to other schools, notably Mahayana (Bankston III, 2014; Buddha Dharma Education Association, 2008). Becoming a monk and achieving Nirvana through individual effort are emphasized in Theravada doctrine (Bankston III, 2014). There are five key precepts of Buddhism that are followed closely by those in the Theravada school: 1) avoid taking the lives of others (including animals); 2) avoid taking things that are not given; 3) avoid sensual misconduct (not strictly sexual misconduct but including gluttony); 4) avoiding false speech; and 5) avoiding intoxication by substances that may cause a breach in precepts 1-4 (Buddha Dharma Education Association, 2014).

Theravada teaches that suffering is the result of an excess of desire for worldly, impermanent pleasures (a desire that is inherent in humans) and that this desire can be contained by adhering to the aforementioned precepts in addition to meditation (Bankston III, 2014; Wetzel, 2008). Those who successfully overcome these desires may be able to achieve enlightenment and Nirvana (Bankston III, 2014). Many Cambodians have a relatively strict interpretation of Buddhist doctrine and believe that performing good deeds, making donations to temples, and inviting monks to their homes for ceremonial events are important for upholding a universal order (Wetzel, 2008). One key distinction between Theravada and Mahayana Buddhism is that Theravada Buddhism is more individualistic than collective-minded (Kim, 2002). Individuals are taught to attain their own enlightenment before acting to help others achieve enlightenment (Kim, 2002). The individual traits of personal development and comporting oneself in a morally appropriate way are stressed (Kim, 2002). In addition to Cambodia, Theravada Buddhism

also predominates in Sri Lanka, Laos, and Burma (Buddha Dharma Education Association, 2008).

The Khmer Rouge attempted to remove all religion generally, and Buddhism specifically, from Cambodia during their reign in the late 1970's. This entailed the destruction of over 3,000 "wats", or temple monasteries, and the murder or forced exodus of 65,000 monks (Wetzel, 2008). All practice of the religion was forbidden throughout the country and it was not until the invasion of the Vietnamese and subsequent fall of the Khmer Rouge that religion was once again permitted in the country (Wetzel, 2008).

Since immigrating to the U.S., Cambodians have retained their high degree of religiosity (as evidenced in the numbers from CCF reporting the importance of religion in their lives). The number of Cambodian Buddhist temples has grown dramatically over the past few decades with several created in the Seattle area (Bankston III, 2014; Wetzel, 2008). Cambodians report attending services and meetings at temples regularly (Wetzel, 2008). Buddhism thus remains a very significant part of Cambodians lives in the U.S.

Vietnam

Buddhism is also the most commonly practiced religion in Vietnam, by an estimated 90% of the population before the civil war (LaBorde, 2014). Catholicism, Confucianism, and Taoism are also practiced to varying degrees (LaBorde, 2014). The precise numbers are difficult to estimate due to restrictions on religious freedom that have persisted following the end of the war (Asian Studies Center, Michigan State University, 2014). For example, according to the latest census data from within Vietnam (1999), only 9% of the population practiced Buddhism, 7% Catholicism, and 81% did not identify with any religion (CIA, 2014b). After the end of the war in 1975, the largest

proportion of political prisoners held by the government has been Buddhist activists (Clarke, 2001). Although the constitution technically protects freedom of religion (“The citizen shall enjoy freedom of belief and of religion; he can follow any religion or follow none. All religions are equal before the law.”), several international organizations and, recently, the U.S. State Department have questioned how free religion actually is in practice (McAllister, 2014). The importance of religion to Vietnamese is reflected by the women in CCF: 87% of Vietnamese participants reported that religion was somewhat, very, or extremely important in their lives compared to 13% who reported that it was not very or not at all important.

In the Seattle area, it is estimated that most of the Vietnamese immigrants are Buddhist (LaBorde, 2014), and that is mostly reflected in the CCF data: a plurality, 47%, identified as Buddhist. Catholicism, first introduced by European missionaries in the 17th century (Asian Studies Center, Michigan State University, 2014), was common primarily among South Vietnamese and a large number of first-wave immigrants to the U.S. are practicing Catholics (LaBorde, 2014). Forty-one percent of the Vietnamese women in CCF identified as Catholic. The remaining three percent of “other” religions identified by CCF participants included Cao Dai and Hoa Hao. Notably, only 7% of Vietnamese in CCF have no religious affiliation (compared to 81% of Vietnamese in Vietnam per the official government census data).

Among the Vietnamese Buddhists, the teachings of the Mahayana school are preferred over the Theravada (as primarily taught in Cambodia) (Kim, 2002). It is thought that the visual imagery, rituals, and ceremonies associated with Mahayana teachings were easily relatable to traditional and indigenous Vietnamese beliefs (Shinn,

2011). Similar to Theravada, Mahayana (also known as “The Great Vehicle”) follows the four noble truths (the existence of suffering, desire as the cause of suffering, the possibility of ending suffering, and the path to the end of suffering through Buddhist teachings) and five precepts, however, it is not considered to be as conservative or strict as Theravada (Buddha Dharma Education Association, 2008).

Compared to Theravada, where reaching enlightenment is the goal, in Mahayana, enlightened individuals delay nirvana in order to help others do the same (Bankston III, 2014). In other words, Mahayana is less individualistic than Theravada and more focused on the collective; it is considered a more “social” school of Buddhism (Kim, 2002). Buddhism as practiced by many Vietnamese is also influenced partially by both Confucianism and animism (Asian Studies Center, Michigan State University, 2014), further distinguishing it from other Buddhist schools.

Similar to the Cambodians, religion remains a very important part of life for Vietnamese immigrants (LaBorde, 2014). Vietnamese churches and temples have been built throughout the Seattle area. Religion may perhaps play an even more central role for Vietnamese after migrating, given the comparative religious freedom they are afforded in the U.S. relative to Vietnam.

2.5.3 Role of women in society, family structure, and the raising of children

Cambodia

Women are highly respected in traditional Khmer society both within the home and larger community, and the mother is often thought of as the leader of the household (Wetzel, 2008). She will typically handle financial matters within the home, will lead in caring for children and in teaching them about cultural and social norms and morals while

the men find jobs outside the home (Wetzel, 2008). Traditionally, however, women also have much less choice than men regarding their role or occupation, and especially less choice in marriage or choosing a spouse, which is typically pre-arranged (Wetzel, 2008). Additionally, society is much less forgiving of women who commit adultery than men, and in general who do not perform their perceived societal roles adequately (Wetzel, 2008). Many women do not receive the same amount of formal education as men, and only men are able to become monks, a sought after status in the highly religious Buddhist culture (Bankston III, 2014).

Among Cambodian-Americans, the role of women remains traditional in many ways, but certain changes from traditional norms are noticeable. Many Cambodian-American women now lead single-parent households, including 42% of the women in CCF. In cases where there are two-parent households, many women also have to find a job in order to support the family (Wetzel, 2008); 62% of Cambodian women in CCF were employed. Birth control and family planning are becoming more common among younger Cambodian-American women, practices that are relatively rare in Cambodia (Wetzel, 2008). Many have also embraced Western medicine over time: 98% of Cambodian women in CCF reported that their previous visit to a medical practitioner was with a Western doctor or nurse.

There are still many traditional cultural beliefs among Cambodian women who immigrated to the U.S., however. Forty-one percent of Cambodian women in CCF agreed that a husband has the right to discipline his wife; 48% agreed that a husband is entitled to have sex with his wife whenever he wants; and 42% disagreed with the statement that a husband is never justified in hitting his wife.

Among Cambodians from rural areas, it is not uncommon for large extended families to live together (Wetzel, 2008). Many CCF participants were from these rural areas but found it difficult to reside in the same home in Seattle (unless they owned it) due to regulations in much of the public housing where they resettled (Wetzel, 2008). As noted previously, however, many Cambodian families that resettled in Seattle have many extended family members living in the same neighborhood.

In traditional Khmer society, the mother is generally expected to be the one primarily raising the children. Among those who have migrated to the U.S. and who have had to take on an occupation outside the home, grandparents, extended family members, or in the absence of those, other neighboring Cambodian families will help or take the lead in raising children (Wetzel, 2008). Expectations among children are high: 77% of caregivers in CCF expected their children to graduate college or receive a graduate or professional degree. Children are brought up to be respectful of and deferential to their elders and deviation from this is frowned upon and punished (Tajima & Harachi, 2010; Wetzel, 2008). Physical discipline practices by parents are common among Cambodians, including those who migrated to the U.S. (Tajima & Harachi, 2010).

The substantial amount of trauma experienced by Cambodian refugees may also play a role in parenting practices in the U.S. A study found that role-reversing and overprotective parenting were common among those who experienced substantial amounts of Khmer Rouge-related trauma (Field, Om, Kim, & Vorn, 2011). Furthermore, strict parenting has caused conflict within families as children of these Cambodian immigrants witness less-restrictive parenting practices amongst their non-Cambodian peers (Wetzel, 2008). Cambodian adolescents in the U.S. have performed poorly

academically relative to other Asian Americans (Goldberg, 1999), and gang activity among Cambodian youth was highly prevalent throughout the 1990's (Wetzel, 2008).

As Cambodians get older, it is expected that their children will take care of them and in traditional culture, will move back into the home to do so (Wetzel, 2008). This aspect of Cambodian family structure has also changed somewhat among those who migrated to the U.S. Although still a crucial expectation that older children care for their elderly parents, many no longer move back into their homes but instead visit regularly. It is also not uncommon for elderly Cambodians to now reside in senior or assisted living centers (Wetzel, 2008).

Vietnam

Similar to Cambodia, in traditional Vietnamese culture there are very distinct gender norms. In general, men take jobs outside the home and women are responsible for domestic work including bringing up the children (LaBorde, 2014). Unlike Cambodian society, however, Vietnamese culture is distinctly patriarchal, in which the male/father will make almost all major decisions for the family. He is seen as the primary leader of the family, as opposed to Cambodian families in which this role is often perceived as belonging to the mother (LaBorde, 2014; Wetzel, 2008). Divorce is viewed as a shameful act for women, but not for men (LaBorde, 2014) and discord or problems in the marriage, sometimes including domestic violence, are often attributed as the fault of the woman (Shiu-Thornton, Senturia, & Sullivan, 2005).

Traditionally, marriages in Vietnam were arranged by family, although the number of prearranged marriages is declining rapidly both in Vietnam and among Vietnamese immigrants in the U.S. (LaBorde, 2014; Shinn, 2011). Although marriages

are not formally arranged as frequently, parents are still very much involved and vocal in their preferences for whom their children date and ultimately marry (LaBorde, 2014).

Interviews with Vietnamese in the Seattle community found that there is still a general preference among parents for their children to marry and date other Vietnamese, but this preference is not as strong as it was in previous generations (LaBorde, 2014).

A number of gender norms in Vietnamese culture have changed among those who migrated to the U.S. Many women joined their husbands in the workforce in order to support their families (LaBorde, 2014). A substantial proportion of women in the CCF, 22%, were the head of single-parent households and 76% were employed. Many women are seeking healthcare with Western providers, a trend similar to that of Cambodians. In the CCF, 98% of Vietnamese women reported that their most recent visit to a medical provider was with a Western doctor or nurse, an identical number to the Cambodian women in the sample.

Traditional cultural beliefs about gender norms remain among some in the population: in CCF, 45% believed that a husband had the right to discipline his wife, a number similar to that among Cambodians; however, a substantially smaller proportion relative to Cambodians reported that a husband was entitled to have sex with his wife whenever he wanted (21% vs. 48%) and similarly 28% disagreed with the statement that a husband is never justified in hitting his wife (vs. 42% among Cambodians who disagreed).

The family unit is central to Vietnamese culture (LaBorde, 2014). Families tend to be large with many extended family members living in the same household, even among those who migrated to the U.S. Households may include the immediate family (the

nuclear family unit, the father's parents and the families of the father's sons) as well as extended family, which includes all other family members (LaBorde, 2014).

Influenced heavily by Mahayana teachings (Kim, 2002), individuals within a family are expected to work for the common good of the family first and foremost (LaBorde, 2014). Behavior contrary to this principle is thought to be shameful and is often made public in the community to dissuade repeat offenses (LaBorde, 2014). The collectivist teachings of Mahayana also lead to parents often being more involved in their children's lives, including their education, and in instilling the importance of community in their children (Kim, 2002). Expectations for children in the family are very high: 91% of parents in CCF expected their children to at least graduate college or have an advanced degree. Physical discipline is common in Vietnamese culture with an estimated 56% reporting ever physically punishing their children (Tajima & Harachi, 2010). Despite similar parenting practices between Vietnamese and Cambodians in the U.S., Vietnamese youth have generally fared better than Cambodian youth academically and behaviorally including lower high school dropout rates, less truancy, and less involvement in gang-related activity (Goldberg, 1999; Kim, 2002; Portes & Rumbaut, 2001).

Raising children is a family affair and grandparents, aunts, and uncles are often involved. Children are taught to not only respect their elders but that family members who help to raise them should be given the same authority as their actual biological parents (LaBorde, 2014). Among Vietnamese-American families, a perceived lack of respect is a source of considerable tension. As with Cambodian families, the younger generation is expected to care for the eldest members of their family as they get older (LaBorde, 2014; Wetzel, 2008). The practice of moving elderly to nursing or senior

homes is more prevalent among immigrants in the U.S. than in Vietnam, but is still extremely rare, a distinction from Cambodian-American families where this practice in the U.S. is now somewhat more common (LaBorde, 2014; Wetzel, 2008).

2.5.4 Drinking culture

Cambodia

There are few data on alcohol use in Cambodia, but studies conducted in Asia have found a common urban/rural divide such that those from rural areas were more likely to binge drink compared to those from urban areas and that this drinking typically takes place in the context of ceremonies, holidays, or special events (World Health Organization, 2006). In one of the only studies of alcohol use within Cambodia, Banta et al. (2013) found that the vast majority of women (93%) and a majority of men (65%) abstained from any alcohol use in the previous week. Rates of drinking were generally much lower than those in the U.S. (Substance Abuse and Mental Health Services Administration, 2013). Cambodians who were Khmer and Buddhist were more likely to drink than ethnic minority groups and non-Buddhists and the most common drinkers overall were middle-aged men (Banta et al., 2013).

The drink of choice for many Cambodians is a locally brewed rice wine which is sometimes quite strong (Wetzel, 2008). According to the World Health Organization, in Cambodia spirits such as this homemade rice wine are most often consumed (61%) followed by beer (38%), and wine (1%) (World Health Organization, 2011). Women generally drink much less than men, although it is common for them to drink a traditional homemade rice wine during pregnancy and after giving birth (Lee, Battle, Antin, & Lipton, 2008; Wetzel, 2008). Among Cambodians who migrated to the U.S., attitudes

towards drinking among women appear to be changing. A study among Cambodian women in the U.S. found that women believed that drinking showed they were “modernized” and they believed stigma associated with female drinking was declining (Lee et al., 2008). Among Cambodians affected by the war, such as the refugees in the CCF, some studies have found a link between alcohol use problems and trauma symptoms (Dubois et al., 2004). Qualitative interviews have suggested that Cambodian-Americans believe alcohol use is increasing among communities in Seattle (Wetzel, 2008).

The fifth precept of Theravada Buddhism, the most common religion among Cambodians, states that a person should resist the desire to become intoxicated from various substances (including alcohol). Although Theravada has a more strict reading of this precept than Mahayana, it is not meant to imply the complete abstention from alcohol, but rather that one should drink in moderation so as not to break one of the other four precepts after drinking (Buddha Dharma Education Association, 2014). Therefore, one might expect the impact of religion on alcohol use in this case to result in moderate levels of drinking.

Attitudes towards child drinking are much stricter. In CCF, 73% of Cambodian women reported having rules against their children using alcohol; 94% reported doing all they could to discourage or forbid alcohol use among their children before graduating high school; and 88% of Cambodian children reported that their parents had strict rules about using alcohol. Nevertheless, alcohol use among Cambodian youth in the U.S. appears to be increasing, with a recent study finding that drinking and binge drinking were both highly prevalent (Lee et al., 2008).

Vietnam

In Vietnam, informal social drinking, known as *nhau*, is common and traditionally believed to be an important part of social life (Parker, 2010). Data from the World Health Organization and Vietnamese hospitals have indicated that rates of alcohol use and alcohol use problems are increasing (Thiem, 2004; World Health Organization, 2004). This suggests that alcohol is becoming more widespread than the traditional use for *nhau*. A more recent study found high rates of alcohol-related problems among rural males (25.5%) including a binge-drinking prevalence of 5.7%, but very low rates for women: 0.7% for alcohol-related problems and <1% for binge-drinking, although rates were higher among women who were divorced, separated, or widowed and women who were more highly educated (Giang, Allebeck, Spak, Van Minh, & Dzung, 2008).

In general, alcohol use is done primarily by men in traditional Vietnamese culture, and public intoxication by females is thought to be particularly shameful (LaBorde, 2014; Parker, 2010). Data from WHO indicate that overall, heavy episodic drinking is very low for both males (2.6%) and females (0.5%) and far lower than in the U.S. (Substance Abuse and Mental Health Services Administration, 2013; World Health Organization, 2014). Beer is by far the most commonly consumed alcoholic beverage in Vietnam (97%), followed by wine (2%) and spirits (1%) (World Health Organization, 2014).

As a less strict school of Buddhism, Mahayana teachings do not prohibit the use of alcohol but rather promote use in moderation similar to Theravada teachings in this regard (Buddha Dharma Education Association, 2014). Although many denominations of Christianity (e.g., Baptists and Protestants) believe the consumption of alcohol should be limited or abstained from completely, among Catholics alcohol use in moderation is

considered permissible (Engs, 2000). Therefore, the influence of religion on drinking among Vietnamese, much like Cambodians, would seemingly result in light-to-moderate drinking patterns.

Vietnamese parents generally do not permit their children to drink and have strict rules prohibiting the use of alcohol. Seventy-eight percent of women in CCF reported having rules about their children using alcohol; 92% of children reported that their family had strict rules about alcohol use; and 91% of caregivers also reported that they would discourage as best they could or forbid alcohol use among their children before graduating from high school.

2.6 Summary

This chapter described the political and migration history of Cambodian and Vietnamese refugees and immigrants on their path to the U.S. This history is important in understanding the relationships between acculturation and alcohol use to be explored in subsequent chapters. The experiences of the Cambodian and Vietnamese caregivers before migration, during the migration itself, and while adjusting to life in the U.S. all may have influenced the factors to be studied in this dissertation, including acculturation, depression, and alcohol use. Similarly, religious practices and family structure are critical elements of a full understanding of how these groups adjusted to life in the U.S. and current drinking behaviors.

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Chapter 3. Literature Review and Conceptual Framework

3.1 Alcohol use among Asian immigrant families

According to data from the 2008 National Survey of Drug Use and Health (NSDUH), Asian American adolescents have a lower prevalence of alcohol use problems than Whites, African Americans, Native Americans or Alaskan Natives, and Hispanics (Wu, Woody, Yang, Pan, & Blazer, 2011). However, as with most investigations concerning both Asian adults and adolescents, the NSDUH study did not measure specific Asian nationalities but rather treated them as one singular group that also included Native Hawaiians and Pacific Islanders. There is some evidence that suggests rates of alcohol use problems are increasing among specific Asian American subgroups, and, in particular, among young adults (Grant et al., 2004; Iwamoto, Takamatsu, & Castellanos, 2012). Furthermore, there may be significant variability in rates of alcohol related problems between Asian American nationalities (Iwamoto et al., 2012; Iwamoto, Corbin, & Fromme, 2010; Le, Goebert, & Wallen, 2009; Thai, Connell, & Tebes, 2010; Nishimura, Goebert, Ramisetty-Mikler, & Caetano, 2005). This section of Chapter 3 will discuss the literature on alcohol use among adults and adolescents from Asian immigrant families.

3.1.1 Adult alcohol use

In general, rates of alcohol use among Asian American adults tend to be lower than many other racial groups and below the national average (Substance Abuse and Mental Health Services Administration, 2014). Estimates from the 2013 NSDUH data revealed that among Asians 12 years of age and older, 34.5% reported current alcohol use, the lowest estimate compared to other racial groups including White (57.7%), Black

(43.6%), Hispanic (43.0%), Native Hawaiians or Pacific Islanders (38.4%), and Alaskan Natives or American Indians (37.3%). Similarly, rates of binge drinking were lowest among Asians (12.4%) compared to Black (20.1%), Alaskan Native or American Indian (23.5%), White (24.0%), Hispanic (24.1%), and Native Hawaiian or Pacific Islander (24.7%) racial groups (Substance Abuse and Mental Health Services Administration, 2014).

Rates of alcohol use problems may be increasing among Asian nationalities, however. Grant and colleagues (2004) found that, although still lower than most other racial groups, rates of alcohol abuse and dependence were increasing among Asians of all age groups and among both males and females. Using data from the 1991-1992 National Longitudinal Alcohol Epidemiologic Survey (NLAES) and the 2001-2002 National Epidemiological Survey on Alcohol and Related Conditions (NESARC), the authors described trends in alcohol use disorders by racial group. The prevalence of past 12-month alcohol abuse among Asian adults doubled between these two time periods, from 1.1% in 1991 to 2.1% in 2001. The increase was particularly pronounced among Asian American women between the ages of 18 and 29, for whom the prevalence of alcohol abuse increased from 0.7% to 3.89% over the ten year period, a statistically significant increase (Grant et al., 2004). The prevalence of past 12-month alcohol dependence also increased, from 2.3% to 2.4%. The largest increase was among 18-29 year old males, a group that had an increase in prevalence of 150%, from 4.1% to 10.2%. Still, the overall rates of alcohol abuse (2.1%) and dependence (2.4%) among Asian Americans in 2001 were lower than respective rates for White (4.6% and 3.8%, for abuse and dependence,

respectively) Black (3.3% and 3.6%), Native American (5.8% and 6.4%), and Hispanic (4.0% for both) racial and ethnic groups (Grant et al., 2004).

The aforementioned studies dealt with Asians as singular group. Wang, Kviz, et al. (2012) has argued that grouping disparate Asian nationalities together in this way can mask important distinctions between them, including alcohol use behavior. However, few studies distinguish between Asian subgroups, including most studies describing national prevalence estimates (Park, Anastas, Shibusawa, & Nguyen, 2014). Using data from the 2002-2008 NSDUH, Lee et al. (2013) found that among five Asian subgroups in the U.S., Korean Americans had the highest percentage of alcohol use in the past 30 days (51.8%), followed by Japanese (49.7%), Chinese (42.0%), Filipino (37.8%), and Asian Indians (34.0%). The average number of drinking days per month and number of drinks per drinking day also varied across the groups (Lee et al., 2013). Other studies have similarly found statistically significant different rates of alcohol use across Asian subgroups (Iwamoto et al., 2010; Iwamoto et al., 2012; Le et al., 2009; Lum, Corliss, Mays, Cochran, & Lui, 2009; Nishimura et al., 2005; Park et al., 2014; Price, Risk, Wong, & Klinge, 2002; Thai et al., 2010; Wong et al., 2007). These significant differences across groups underscore the need for studies that disaggregate specific Asian nationalities.

Current studies that do disaggregate, however, such as Lee et al. (2013), are limited in that many tend not to include smaller Asian subgroups. This is an important limitation given that groups from Southeast Asia, such as Cambodians and Vietnamese, may have a higher risk for alcohol use due to the differential rates at which they have been exposed to alcohol use risk factors (Wang, Kviz et al., 2012). We therefore have no

recent prevalence estimates for our two populations of interest in the dissertation, Vietnamese and Cambodian immigrant adults.

Several correlates of alcohol use may also vary by nationality. Southeast Asian immigrants, in particular, tend to have lower socioeconomic status as compared to other Asian nationalities (Lim et al., 2011; Rumbaut, 2000). Discrimination has been found to be a risk factor for problematic alcohol use among Vietnamese-Americans but not significantly associated with drinking among other groups including Filipino and Chinese (Park et al., 2014). Country of origin, reason for migration, and trauma histories may also vary quite substantially across Asian immigrant groups, and these all may be related to both mental health problems as well as alcohol and other drug use (Wang, Kviz et al., 2012).

Genetic risk factors for alcohol use problems also differ across Asian nationalities. There are essentially three genes responsible for coding isoenzymes that metabolize alcohol: *ADH1B* and *ADH1C*, which metabolize alcohol into acetaldehyde, and *ALDH2*, which metabolizes acetaldehyde into acetate (Eng, Luczak, & Wall, 2007). Variants of these genes cause alcohol metabolizing to slow and these variants are more prevalent in Asian populations than other racial groups. The slowing of alcohol metabolizing often results in a buildup of acetaldehyde which can cause adverse physical reactions to alcohol including flushing, palpitations, nausea, and headaches (Eriksson, 2001). The adverse reactions may partially explain the lower prevalence of alcohol use disorders among those from Asian descent (Wall, Shea, Luczak, Cook, & Carr, 2005).

A review found that although more common among Asians as a whole than other racial groups, the prevalence of the three genetic variants differed greatly across specific

Asian subgroups (Eng et al., 2007). The *ALDH2* variant, for example, was found to be prevalent much more often (as high as 37%) among Korean-Americans than among Filipino and Thai groups for which it was present in less than 10% (Eng et al., 2007). Notably, studies investigating this variation across groups have also not included Vietnamese or Cambodian populations.

Alcohol misuse among Asian populations is associated with a number of negative correlates, similar to other racial groups. These have included co-occurring mental health problems such as depression, anxiety, PTSD, and suicidal ideation as well as other types of substance abuse and violent behaviors (Chang, Shen, & Takeuchi, 2009; Cheng et al., 2012). Rates of these co-occurring problems may be higher among Asian Americans with alcohol use problems than other racial groups who misuse alcohol (Cheng et al., 2012; Ja & Aoki, 1993; Park, Shibusawa, Yoon, & Son, 2010).

3.1.2 Child and adolescent alcohol use

Initiation of alcohol use in early in adolescence increases the risk for alcohol problems in adulthood (Grant & Dawson, 1997; Hingson & Zha, 2009), by as much as 70% (Guttmannova et al., 2011). This risk may increase in a linear fashion with each earlier year of drinking onset (Grant & Dawson, 1997; Hingson & Zha, 2009).

Drinking during adolescence is less common among Asian youth compared to other racial groups. Data from the 2013 NSDUH revealed that 15.2% of Asian youth aged 12-20 drank alcohol in the past month compared to 17.8% for Black, 20.6% for Hispanic, and 25.8% for White racial groups (Substance Abuse and Mental Health Services Administration, 2014). Asian youth also had the lowest prevalence of binge drinking, 7.6%, compared to White (16.8%), American Indian or Alaska Native (13.9%),

Hispanic (13.5%), Native Hawaiian or other Pacific Islander (11.1%), or Black (8.4%) racial groups (Substance Abuse and Mental Health Services Administration, 2014).

Similar to trends among Asian American adults, rates of alcohol use among Asian youth are also increasing (Harachi, Catalano, Kim, & Choi, 2001; James, Kim, & Moore, 1997). Asian Americans who drink heavily consume more alcohol per day than Caucasians who are heavy drinkers (Makimoto, 1998). The rate of Asian American adolescents in alcohol treatment programs over a five year period from 1994 to 1999 grew over twice as fast as the rate for adolescents overall (Substance Abuse and Mental Health Services Administration- U.S. Department of Health and Human Services, 2002).

Furthermore, similar to studies with Asian American adults, Asian youth in the U.S. are often treated as a singular group. Alcohol use patterns and risk factors for alcohol use may both vary across Asian nationalities among adolescents, however. For example, school-based outcomes, socioeconomic status, and health outcomes are often worse among populations from Southeast Asia, especially among Cambodians, compared to other Asian nationalities (Goldberg, 1999; Koch-Weser, Liang, & Grigg-Saito, 2006; Lim et al., 2011; Rumbaut, 2000; Suinn, 2010). Wong et al. (2004) reported wide variation of alcohol use among Asian high school students: 65% of Pacific Islanders reported alcohol use compared to 56.9% of Filipino, 46.8% of Japanese, and 37.4% of Chinese youth.

Both Wang, Kviz, et al. (2012) and Hamby (2015) have argued for studies of health risk factors and outcomes, including alcohol use, to be conducted among disaggregated Asian groups. These distinctions are critical given that alcohol use among Asian American youth is associated with a number of other co-occurring mental health

problems, delinquency and school drop-out, motor vehicle injury, and violent behaviors (Cheng et al., 2012; Hill, White, Chung, Hawkins, & Catalano, 2000; Swadi, 1999).

3.2 *Acculturation*

Wilson-Portuondo (2003) describes four distinct phases of cultural adaptation among immigrant populations. The first stage, *euphoria*, refers to the sense of excitement that might be felt upon being in a new culture and, especially in the case of Vietnamese and Cambodian immigrants, relief from persecution and violence that may have been a regular part of their lives before emigration. *Culture shock*, the second phase of adaptation, includes a sudden awareness of stark differences in cultural beliefs and practices that may cause confusion and stress. The third phase, referred to as *anomie*, is a period denoted by confusion as to whether to identify with the new culture or with traditional culture.

The fourth phase, and focus of this dissertation, is *acculturation*, which we define as "the multidimensional process of the adoption of U.S. cultural norms, values, and lifestyles" (Alegria, 2009; Lara, Gamboa, Kahramanian, Morales, & Bautista, 2005; Wilson-Portuondo, 2003). Acculturation is distinguished from *anomie* in that a person has actually taken action (consciously or subconsciously) to begin adoption of new cultural norms, values, and lifestyles, and/or to actively retain features of their traditional culture. A key component of the definition of acculturation for this dissertation is that it is *multidimensional*. In other words, acculturation is not treated as a unidimensional continuum in which someone is more or less "acculturated."

In defining acculturation as a multidimensional construct, we are using the framework developed by Berry (1997). This model implies that there are two

independent continuums of acculturation: 1) the degree to which a person continues to embrace and practice aspects of his or her own traditional culture (“cultural maintenance”); and 2) the degree to which a person adopts or identifies with aspects of a new culture (“contact and participation”). The use of both dimensions results in the ability to identify four acculturation “strategies”: assimilation, traditionalism, biculturalism, and marginalization, depending on where a person falls on both continuums (Berry, 1997).

Assimilation (low cultural maintenance/high contact and participation) is defined as the replacement of traditional cultural beliefs and practice with a new culture. When studies discuss an individual becoming more “acculturated,” they are typically referring to that person becoming more assimilated. Also referred to as “cultural shift” (Mendoza & Martinez, 1981), persons who assimilate to a new culture may not just change practices and customs from their traditional culture to the those of a new culture, but also their traditional mores, values, and attitudes as well (Berry, 2003; Cano, 2011).

Traditionalism (high cultural maintenance/low contact and participation), on the other hand, is defined as the retention of traditional cultural beliefs and generally a rejection of new cultural norms and practices (Berry, 1997). Lalonde & Cameron (1993) noted that traditionalism is a possibility only when other members of the same cultural background are similarly interested in maintaining it. This perhaps is why a secondary migration of immigrants, as discussed in Chapter 2, is so often observed. This “collectivist” aspect of traditionalism stands in contrast to the “individualistic” nature of assimilation (Berry, 1997; Lalonde & Cameron, 1993).

Biculturalism (high cultural maintenance/high contact and participation), or “integration” as described by Berry (1997) refers to a strategy in which individuals have adopted several aspects of the new culture while retaining elements of their traditional culture as well. Adoption of this strategy similarly necessitates that other members of the community are interested in retaining traditional cultural norms. As with the assimilation strategy, it requires a host culture that is open and inclusive to immigrant communities. Berry (1997) refers to this dual requirement as *mutual accommodation*.

The fourth and final acculturation strategy is *marginalization* (low cultural maintenance/ low contact and participation). Berry (1997) describes this as more of a *forced* choice than the other strategies. Some individuals who feel marginalized do not feel a strong identification with either a new or traditional culture while others may have been forced to assimilate against their wishes (Berry, 2003).

Acculturation and the strategies described above have garnered interest from public health researchers and practitioners amidst evidence that acculturation is associated with a number of behavioral health outcomes including smoking, alcohol use, depression, and suicide (Cheng et al., 2010; Crane, Ngai, Larson, & Hafen, 2005; Dao et al., 2007; Goldston et al., 2008; Hahm et al., 2006; Kennedy, Parhar, Samra, & Gorzalka, 2005; Kim et al., 2001; Parker, Chan, Tully, & Eisenbruch, 2005; Suinn, 2010; Wong, Tran, & Lai, 2009). Berry (1997, 2003) has theorized that those with a bicultural strategy would adapt more easily and have fewer of these negative outcomes while those who identified as marginalized would adapt more poorly and have an increased risk for adverse outcomes. Those with an assimilated or traditional strategy were theorized to have outcomes ranging in between the bicultural and marginalized (Cano, 2011). Few

studies, however, have formally measured health outcomes among the four specific acculturation strategies.

Acculturation strategies may differ across time and context (Berry, 1997), and particularly across ethnic groups (Choi, He, & Harachi, 2008; Phinney, Ong, & Madden, 2000; Rumbaut, 1996). For example, Chung (2001) found that among Asian Americans between 17 and 31 years old, those from Southeast Asia were the most likely to report a low degree of assimilation compared to Chinese, Filipino, and Japanese groups. Several authors have therefore argued for a focus of acculturation studies on specific Asian American nationalities, such as Cambodian and Vietnamese (Choi et al., 2008; Chung, 2001; Koch-Weser et al., 2006).

3.2.1 Measurement of acculturation

Early studies most commonly defined acculturation as a unidimensional construct. The unidimensional model posits that acculturation occurs in one direction with immigrants beginning to adopt aspects of the host culture over time while simultaneously losing identification with their traditional culture (Cano, 2011; Gordon, 1964; Padilla, 1980). This definition of acculturation tracks very closely to the assimilation strategy in the multidimensional acculturation construct described above and is sometimes even referred to as the “assimilation model” (Cano, 2011). Accordingly, a person falls on a continuum in which he or she is more or less “acculturated” to U.S. culture without the possibility that someone feels a strong identification with more than one (bicultural) or neither (marginalized) the traditional or new culture. The model holds that people inevitably become more acculturated over time and that this is not reversible (Gordon, 1964).

A number of indicators used to measure acculturation reflect the unidimensional, one-direction acculturation model. Within this unidimensional approach there are two methods of measuring acculturation: proxy indicators and acculturation scales (Gupta, Leong, Valentine, & Canada, 2013). Common examples of proxy indicators are English language proficiency, nativity, and number of years lived in the U.S. Proxy indicators of acculturation have been criticized for having low reliability and content validity (Gee, Walsemann, & Takeuchi, 2010; Gupta et al., 2013) and for lacking an underlying theoretical basis (Salant & Lauderdale, 2003).

Scales directly measuring acculturation were created to address these limitations (Salant & Lauderdale, 2003). The most common unidimensional scale developed for use with Asian American populations is the Suinn-Lew Asian Self-Identity Acculturation Scale (Suinn, Ahuna, & Khoo, 1992). Following the unidimensional model, the Suinn-Lew scale asks respondents about several cultural items (e.g., language, food, association with community members, and entertainment) and their preference for “Asian” or “non-Asian” for each item using a 5-point Likert scale. The resulting score is calculated by taking an average across the items and is used to compare how “acculturated” participants are in relation to other respondents, with higher scores indicating a stronger degree of identification with U.S. culture. Measurement of acculturation via the unidimensional model, through either proxy or scale measurement, still predominates in the literature (Gupta et al., 2013; Zane & Mak, 2003).

There are fewer methods for measuring multidimensional acculturation. Multidimensional methods most often include the use of scales rather than proxy indicators. The multidimensional model allows for individuals to identify with one, both,

or neither a traditional and new culture. Therefore, a singular overall summary score of acculturation is not appropriate. To address this limitation, scales for multidimensional acculturation often include two sub-scales: one for identification with traditional culture and one for identification with U.S. culture (Gupta et al., 2013), such as the Vancouver Index of Acculturation that was developed for use with Chinese Americans (Ryder, Alden, & Paulhus, 2000). Scales originally developed using a unidimensional perspective, including the Suinn-Lew scale, have recently been modified to allow for a multidimensional approach resulting in two sub-scale scores (Gupta et al., 2013; Magafia et al., 1996; Tajima & Harachi, 2010). Authors have debated how best to interpret two scores. Gupta et al. (2013) argued that the scores are independent of each other and should not be integrated. Lim et al. (2011), however, used a combination of the scores to describe individuals' acculturation strategies based on Berry's theory (traditional, assimilated, bicultural, and marginalized).

There is no current agreement in the literature on the conceptualization or measurement of acculturation (Gupta et al., 2013; Salant & Lauderdale, 2003). The limited ability of the unidimensional model to measure biculturalism or marginalization led to the reconceptualization of acculturation and the multidimensional model described above by Berry (1997). Although an improvement in many ways, the multidimensional model is also not without limitation. Some have argued that the model does not account sufficiently for instances in which individuals are "forced" to identify with a new culture or a host culture (Cano, 2011). Rudmin & Ahmadzadeh (2001) contend that Berry's model is really more bi-dimensional than multidimensional; that is, it does not allow for the possibility that someone may identify with a third culture that is not the host or

traditional culture. Finally, some have argued that Berry's perspective is a "one size fits all" approach that does not take into account contextual, demographic, or cultural variation across immigrant groups (Chirkov, 2009; Schwartz, Unger, Zamboanga, & Szapocznik, 2010). Despite these limitations, Berry's multidimensional perspective represents the most comprehensive construct of acculturation that can be measured using existing tools (Cano, 2011). Therefore, this dissertation will follow Berry (1997) in conceptualizing acculturation and will measure it using scales that allow for this perspective.

3.2.2 Healthy migrant effect

A great degree of research that investigates the association of acculturation with mental and physical health outcomes is based on the theory of the healthy migrant effect, also referred to in the literature as the "immigrant paradox" (Almeida, Johnson, Matsumoto, & Godette, 2012; Salas-Wright & Vaughn, 2014; Schwartz et al., 2010). Several epidemiological studies have suggested that upon arrival in the U.S., immigrant populations tend to have better overall health as compared to native-born Americans (Almeida et al., 2012; Li & Wen, 2013; Salas-Wright & Vaughn, 2014). As summarized by Schwartz et al. (2010), studies have found that immigrant populations may have lower risk for psychiatric (Alegria et al., 2007) and substance and alcohol use disorders (Allen et al., 2008), and more likely to have better diets (Unger et al., 2004) and be more physically active (Corral & Landrine, 2008). One potential explanation for this trend is a selection effect. Those who migrate are "positively selected" because they have both the physical and financial ability to move to a new country, have better physical and mental health than those who do not or cannot migrate (Palloni & Arias, 2004), and are less

likely to take part in health risk behaviors (Rubalcava, Teruel, Thomas, & Goldman, 2008).

The selection theory would seemingly suggest that the healthy migrant effect does not apply to refugee populations: unlike other immigrants who migrate voluntarily, refugee resettlement often constitutes a population that has been forced from its home country due to dangerous or violent circumstances (Bloemraad, 2006; Salas-Wright & Vaughn, 2014). Consequently, refugees may not have the same protective factors for poor health, psychological sequelae, or alcohol and substance abuse that voluntary migrant populations have.

A new study, however, found evidence arguing against the exclusion of refugees from the selection bias theory. In what they described as a “refugee paradox”, Salas-Wright & Vaughn (2014), using data from the National Epidemiologic Survey on Alcohol and Related Conditions, found that refugees in the U.S. actually had a lower risk for all substance use disorders than native-born Americans as well as a lower risk (although reduced in magnitude) of alcohol, cocaine, hallucinogens, and heroin use disorders compared to non-refugee immigrants. Although the authors noted several limitations of the study and that their results should be interpreted with caution, the findings suggest that the healthy migrant effect may indeed apply to refugees as well as voluntary migrants (Salas-Wright & Vaughn, 2014).

The literature has indicated that the protective effects of the immigrant paradox diminish over time and as a person becomes more “acculturated” (Fennelly, 2007), leading many studies to conclude that acculturation is associated with adverse health outcomes for immigrant communities (Schwartz et al., 2010). The predominance of

acculturation studies using unidimensional measures, however, has resulted in the inability to determine whether the change in health indicators among immigrant populations is attributable to the acquisition of U.S. cultural norms, the loss of traditional culture, or a combination of the two. Schwartz et al. (2010) has therefore argued for studies of acculturation and health outcomes to include multidimensional measures of acculturation in order to gain a better understanding of the healthy migrant effect and how it may dissipate over time.

3.2.3 Acculturative stress

Before discussing the literature on the association between acculturation and the health outcome of interest for this dissertation, alcohol use, it is important to make a distinction between acculturation and acculturative stress. Acculturation, as described above, refers to the process and degree to which a person adopts norms, values, and customs of a new culture and the degree to which he or she retains traditional cultural norms. Acculturation, of course, occurs as part of the immigration process, an already stressful experience for families (Gutierrez, Sameroff, & Karrer, 1988; Hahm et al., 2004). Stress during this process may be caused by a loss of social and tangible supports, as well as difficulty adjusting to different cultural norms (Landale, Oropesa, Llanes, & Gorman, 1999). Acculturative stress therefore refers to the generalized anxiety and stress associated with the acculturation process (Berry, 1998), or the particular acculturation strategy of an individual (i.e., traditional, marginal, assimilated, bicultural) (Berry, 2006). Similarly, there is a distinction between “bicultural” and “bicultural stress” which are sometimes used interchangeably in the literature. Bicultural refers to one of the four acculturation strategies described by Berry (1997), in which an individual identifies with

both a new and traditional culture. Bicultural stress, on the other hand, refers to the anxiety and difficulty caused by a feeling of being “caught between two cultures” (Benet-Martínez & Haritatos, 2005; Oshri et al., 2014; Rudmin, 2003).

The distinction is important not only because the terms themselves are describing different processes, but also because they are differentially associated with health outcomes. For example, using data from the National Latino and Asian American Study, Savage & Mezuk, (2014) found that acculturation was a significant predictor of alcohol and substance use disorders among Asian Americans but that acculturative stress was not associated with either alcohol or substance use. Furthermore, Hovey & King (1996) found that acculturation and acculturative stress did not correlate highly with one another. Although all immigrants will undergo a process of acculturation to some extent, only some will experience stress association with that process (Caplan, 2007; Hovey & King, 1996). This dissertation will focus on the construct of acculturation, and not acculturative stress, in predicting alcohol use.

3.2.4 Acculturation and alcohol use

Alcohol use and misuse and the social acceptability and desirability of drinking are substantially higher in the U.S. than in many countries from which immigrants arrive (Karriker-Jaffe & Zemore, 2009), including Cambodia and Vietnam (see Chapter 2 for details on drinking cultures in these countries). According to acculturation theory, assimilation or integration strategies lead to the adoption of U.S. cultural norms and practices (Berry, 1997). These strategies might therefore entail an increased risk for alcohol use or misuse as compared to traditional cultural identification strategies.

The majority of studies analyzing the relationship between acculturation and alcohol use have been conducted among Hispanic populations. Studies among Latina women in the U.S. have consistently found that a greater degree of identification with U.S. culture is associated with both greater odds of drinking alcohol and the quantity of alcohol consumed among drinkers (Caetano & Mora, 1988; Marks, Garcia, & Solis, 1990; Zemore, 2005). A comprehensive review also found that a greater degree of U.S. cultural identification was associated with problematic drinking and alcohol abuse and dependence among women (Zemore, 2007). Among males, studies found that acculturation was also associated with increased risk for drinking and potentially greater quantity and alcohol use problems, but also that among regular drinkers, a high amount of U.S. cultural identification was associated with lower levels of alcohol use (Zemore, 2007).

Although fewer in number, studies among Asian Americans have also suggested a statistically significant relationship between acculturation and alcohol use (Suinn, 2010). Park et al. (2014) found that increased proficiency in English (used as a proxy for acculturation) was associated with increased drinking among Vietnamese, Chinese, and Filipino adult immigrants in the U.S. Wong et al. (2007) found that U.S. cultural integration (as measured by nativity proxy) was also associated with increased alcohol use among Southeast Asian adults in the U.S. (Vietnamese, Cambodians, and Laotians). Savage & Mezuk (2014) found that acculturation (as measured by language use indicators and citizenship status) was associated with alcohol and substance use disorders among Asian American adults.

Among Asian adolescents in the U.S., studies have found that a greater identification with U.S. culture was associated with binge drinking (Hahm et al., 2004), quantity of drinks during drinking episodes (Cook, Hofstetter, Kang, Hovell, & Irvin, 2009), and any alcohol use in the past 30 days (Hendershot, MacPherson, Myers, Carr, & Wall, 2005). Greater identification with traditional culture was associated with less alcohol use (Lim et al., 2011). Notably, Park et al. (2014) also found that similar to Asian subgroup differences in alcohol use patterns and acculturation, the *relationship* between acculturation and alcohol use may also differ by Asian nationality.

3.3 Intergenerational cultural dissonance and family conflict

Although several studies have suggested a significant relationship between acculturation and alcohol use among Asian adolescents from immigrant families, this approach has been criticized as treating adolescent acculturation as too “individualistic” (Kim, Chen, Li, Huang, & Moon, 2009; Nguyen, Messé, & Stollak, 1999). As noted by Kim et al. (2009), migration typically occurs as a family unit, child development is embedded within the family context, and the child is an integral part of resettlement for the family (Valenzuela, 1999). Several scholars have therefore argued that acculturation of the adult caregivers in the family should be taken into account in child acculturation studies (Choi et al., 2008; Kim et al., 2009; Portes, 1997; Wang, Kviz, et al., 2012).

Intergenerational cultural dissonance (ICD), also sometimes known as the *acculturation gap*, refers to the difference in acculturation strategies between caregivers and their children (Portes & Rumbaut 1996). The prevalence of ICD among immigrant families is so high that it has been described as “normative” (Choi et al., 2008; Lee, Su, & Yoshida, 2005; Ying, Coombs, & Lee, 1999). Most commonly ICD occurs when

adolescent children from immigrant families begin to adopt Western cultural values, norms, and practices to a greater extent and/or at a more rapid pace than their parents or caregivers (Choi et al., 2008; Portes & Rumbaut, 1996). The differential acculturation strategies adopted by the caregiver and adolescent often result in a cultural “clash” between the two generations (Wang, Kviz et al., 2012). In the case of ICD among Asian immigrant families, this clash is generally focused on a discrepancy in collectivist (traditional) values vs. individualistic (Western) values (Zhou & Bankston, 1998). When the dissonance between caregiver and adolescent is substantial, increased amounts of miscommunication and misunderstanding can cause tension and conflict within the family (Choi et al., 2008). Feelings of alienation among both adolescent and caregiver may result leading to less parent-child bonding and parental involvement (Choi et al., 2008; Chung, 2001). The misunderstanding between generations can be further intensified if there is not a commonly spoken language between caregiver and child (Lee & Cynn, 1990) resulting in cases of role-reversals: situations where the adolescent must care for and help navigate aspects of the new culture for their parents (e.g., healthcare services) due to language barriers (Portes & Rumbaut, 2001).

ICD can be viewed as an effect modifier of the typical intergenerational clash that occurs in many families with children of adolescent age (Wang, Kviz et al., 2012). Given the existing generational divide, tension between caregivers and their children is common during the adolescent years (Phinney et al., 2000). Steinberg (1991) theorized that a small amount of conflict during this period should be considered normal and an integral part of youth becoming more independent. Findings by Formoso et al. (2000) found that in most instances, conflict in small amounts does not lead to adverse child outcomes or

adjustment problems. The presence of a cultural clash with ICD, however, has been found to intensify the intergenerational dissonance leading to increased family conflict beyond the typical adolescent-caregiver tension (Wang, Kviz et al., 2012). In other words, ICD produces a home environment in which family conflict is increased.

Choi et al. (2008) found that family conflict was a mediator of the relationship between ICD and child problem behaviors. Overt intra-family conflict, personified by fighting and frequent arguments, can lead to substantial and long-lasting internalizing and externalizing symptoms in the child (Choi et al., 2008; Formoso et al., 2000; Ingoldsby et al., 2006). Ultimately, conflict that has been precipitated by ICD has been associated with several subsequent negative child outcomes among Asian adolescents from immigrant families including antisocial behaviors, aggression, behavioral and school-based problems, delinquency, depression, and anxiety (Choi et al., 2008; Chung, 2001; Hwang, 2006; Kibria, 1993; Kim et al., 2009; Kim, Chen, Wang, Shen, & Orozco-Lapray, 2013; Lee et al., 2005; Wang, Kim, Anderson, Chen, & Yan, 2012).

Characteristics specific to Asian cultures and parenting styles may serve to increase the likelihood of ICD among Asian families (Wang, Kviz, et al., 2012). Kim et al. (1999) described several intrinsic Asian cultural values: collectivism, conformity to familial norms, respecting elders, education and career issues, emotional self-control, and humility. As described above, collectivism stands in stark contrast to the emphasis placed on the individual in Western culture and is central to many intergenerational clashes between caregivers and adolescents from immigrant families (Zhou & Bankston, 1998). Tsai-Chae and Nagata (2008) found that adolescent-caregiver discrepancies in several of the other values, notably conforming to family norms, respecting elders (adolescents not

showing enough respect or openly disagreeing with elders), and education and career issues (adolescents not achieving parents' expectations or diverging opinions on career choice) were all associated with increased levels of family conflict.

In a review of Asian adolescent acculturation, Wang, Kviz, et al. (2012) also discuss how differential parenting styles between Asian families and non-Asian families in the U.S. can lead to ICD. Caregivers and adolescents from Asian immigrant families may have a “dual frame of reference,” in which the adolescents compare their caregivers to those of their non-Asian peers and the caregivers compare their children to those from their native country (Baolian Qin, 2006). Asian parents are more likely to have an authoritarian parenting style than caregivers of many of the peers whom adolescents from these families associate with at school or in the neighborhood (Chao, 1994; Chuang & Su, 2009). Authoritarian parenting styles are characterized by placing a high value on obedience to parenting authority, punitive punishments in cases of disobedience, and emphasis on “hard work and...upholding the order and tradition” (Baumrind, 1968; Wang, Kviz, et al., 2012). The clash may occur when Asian adolescents observe the caregivers of their non-Asian peers, who are more likely to have an authoritative parenting style, which typically allows for more child independence, autonomy, and increased parent-child communication (Baumrind, 1968; Darling & Steinberg, 1993; Wang, Kviz, et al., 2012).

Peer group conformity is perceived as especially important by adolescents and Kim et al. (2013) found that ICD is most highly prevalent in late childhood and early adolescence. In addition to variation across ages, studies have suggested that ICD differs across other characteristics as well. Differences have been noted across nationality, with

Vietnamese and Cambodian families reporting a greater degree of ICD compared to other national groups (Phinney et al., 2000; Rumbaut, 1996). A difference by sex has also been reported: female adolescents have reported more ICD with their caregivers than male adolescents (Chung, 2001; Portes & Rumbaut, 2001; Rumbaut, 1996). Children who are second generation (born in the U.S to immigrant parents) or of the “1.5” generation (born outside the U.S. but immigrated with their parents at a young age) are more likely to experience an intergenerational cultural clash with their caregivers than those who immigrated to the U.S. with their caregivers at an older age (Chung, 2001; Portes & Rumbaut, 2001). Acculturation strategies of both adolescent and caregiver are also important in predicting ICD, with adolescents who have a greater degree of assimilation experiencing ICD at a higher rate than adolescents with a greater degree of traditional cultural identification (Portes & Rumbaut, 1996).

3.3.1 Measurement of intergenerational cultural dissonance

Although ICD has been discussed and theorized as a concept for some time (Portes & Rumbaut, 1996; Szapocznik, Scopetta, Kurtines, & Aranalde, 1978), it has only recently been investigated empirically; most previous research used individual measures of adolescent acculturation (Unger, Ritt-Olson, Wagner, Soto, & Baezconde-Garbanati, 2009). Consequently, there is no established gold standard for ICD measurement and the type of measure used to assess ICD has varied widely across studies. There are three general approaches that have been used and are described below.

The first approach involves measuring acculturation among the caregiver and the adolescent and using those scores to calculate ICD. There are several variations of this approach. One method of doing this is by simply taking the raw difference in continuous

acculturation scores between caregiver and adolescent (Elder, Broyles, Brennan, Zúñiga de Nuncio, & Nader, 2005). A similar method involves comparing the categorized acculturation strategy according to Berry (1997) (i.e., traditional, marginalized, assimilated, bicultural) between the adolescent and caregiver with concordant pairs deemed as not experiencing ICD and discordant pairs as experiencing ICD (Lim, Yeh, Liang, Lau, & McCabe, 2008). Yet another variation of this approach involves using the raw acculturation scores of parent and child as well as an interaction term of the two scores multiplied together. All three scores are then included in the analysis model (Kim & Park, 2011). An advantage of these approaches is that they capture acculturation from *both* the child and the caregiver. The disadvantage, however, is that they result in a raw score, the meaning of which may be unclear. According to Unger et al. (2009), ICD may only be important if “the child is aware of it, understands its implications, and experiences it as stressful, not if the child is oblivious to it or considers it unimportant.” These methods do not allow for the measurement of whether ICD is recognized or perceived as a problem by the adolescent.

The second approach to measuring ICD is through direct measurement and is an attempt at addressing the critique raised by authors such as Unger et al. (2009). Several scales have been developed that attempt to measure the amount of dissonance within families caused by ICD. Examples of these scales include the Asian American Family Conflicts Scale (Lee, Choe, Kim, & Ngo, 2000), and the Intergenerational Conflict Inventory (Chung, 2001). These measures are advantageous in that they attempt to measure ICD directly by asking adolescents about their perceptions of the dissonance (Unger et al. 2009). The Asian American Family Conflicts scale, for example, asks

adolescents to describe how often they disagree with their parents over issues such as autonomy, academic achievement, and their social lives (Lee et al. 2000). Unger et al. (2009) used a direct measure of ICD, the Perceived Parental Cultural Expectations scale, in addition to self-reported adolescent acculturation. These scales allow the child to report how the dissonance has actually affected him or herself, unlike the difference method described above. On the other hand, the scales are all designed for adolescent respondents; the caregiver's perception of the acculturation gap is not taken into account.

The third approach, advocated by Costigan (2010) and Kim et al. (2013), calls for replacing the difference score method with multilevel modeling to account for the levels of the adolescent-caregiver cluster. Multilevel models include both adolescent and caregiver acculturation scores to estimate an ICD score for each dyad (Kim et al., 2013). According to Kim et al (2013), the two major advantages to this approach over the raw score are: 1) the multilevel model uses an Empirical Bayesian estimate of ICD which is more precise and stable as compared to an ordinary least squares approach used in the raw difference method; and 2) the ICD estimate itself is thought to be more accurate because the multilevel model can identify and account for measurement error that is not done in standard regression. A major limitation of the raw difference method remains, however: the inability to determine the degree to which the adolescent is conscious of or impacted by the acculturation discrepancy.

3.3.2 Intergenerational cultural dissonance and adolescent alcohol use

Although the literature has clearly suggested a link between family conflict and substance and alcohol use (Hawkins, Catalano, & Miller, 1992; Hill, Hawkins, Catalano, Abbott, & Guo, 2005) and increasingly that ICD is associated with adverse child

outcomes, there are few studies that have directly measured the effect of ICD on substance and alcohol use. The majority of these studies have focused on Hispanic populations. There are currently no published reports that assess this relationship among Asian American families.

Felix-Ortiz et al. (1998) found that ICD was significantly associated with more drug use among Latina adolescents in Los Angeles. Elder et al. (2005) found that Mexican-American adolescents who had a stronger identification with American culture than their parents were at an increased risk for alcohol use. Martinez (2006) testing a mediational model, found that ICD was associated with increased family tension and decreased parental involvement leading to an increased risk for substance use among Latino youth. Most recently, Unger et al. (2009) found that increases in ICD between Hispanic high school students and their caregivers from 9th to 10th grade were associated with 10th grade substance use. One study found that ICD was not associated with substance use among a Mexican-American adolescent sample, however, the authors acknowledged that the study was limited by a cross-sectional design, an English-language proxy indicator of acculturation, and a measure of family conflict that was limited to frequency rather than type (Pasch et al., 2006).

3.4 Depression among Asian American youth

Several studies have indicated that Asian American youth may have an increased risk for depressive symptomatology compared to adolescents from other racial groups (Bankston III & Zhou, 2002; Greenberger & Chen, 1996; Lorenzo, Frost, & Reinherz, 2000). Data from the Youth Risk Behavior Survey of the Centers for Disease Control and Prevention found that 29% of Asian high school students reported having feelings of

hopelessness and sadness almost every day for the past two weeks. Symptoms were severe enough to have caused difficulty in performing usual activities (Centers for Disease Control and Prevention, 2014). Sixteen percent of Asian high school students reported making a plan about how they would attempt suicide in the past year, the second highest percentage of all groups surveyed (highest was Native American or Alaska Native at 23%). Asian girls in particular have an increased risk for suicidal ideation: 23% seriously considered attempting suicide in the past year compared to 19% of Black and 21% of White high school-aged girls (highest percentages were among Hispanic girls at 26%). Other studies have similarly found that Asian girls had an increased risk for depression (Africa & Carrasco, 2011; Kim & Chun, 1993).

Although these surveys are helpful in presenting national estimates among Asian youth overall, they are limited in that they do not disaggregate by specific Asian subgroup (Gee et al., 2010). Consequently we have no reliable representative estimates on depression prevalence among specific Asian nationalities. This is particularly problematic among youth from Southeast Asian families, including Vietnamese and Cambodian, because some studies have suggested that this population may have an increased risk for depressive symptomatology due to familial trauma history (Field, Om, Kim, & Vorn, 2011; U.S. Dept. Health & Human Services, 2013). Gee et al. (2010) have therefore argued that studies of depression among Asian Americans should always attempt to study specific subgroups when possible. Authors have also expressed concern that symptoms of depression among Asian American youth might manifest somewhat differently than those from other racial groups resulting in under- or misdiagnosis

(Huang, 1997). It follows, then, that they use and receive services less frequently than adolescents from other racial groups (Chang & Sue, 2003).

3.4.1 Depression and acculturation

A recent meta-analysis identified 38 studies investigating the association of acculturation and depression among Asian Americans (Gupta et al., 2013). Among those studies, 10 included adolescent or youth populations. Of those 10 studies, five investigated the impact of traditional cultural identification on depression, three of which found that traditional identification was protective (Juang & Cookston, 2009; Nguyen & Peterson, 1993; Patel, 2008), and two of which found that it was a risk factor for depressive symptomatology (Benner & Kim, 2009; Nguyen et al., 1999). The remaining studies investigated the impact of U.S. cultural identification on depression. Six of these found assimilation to be a protective factor (Crane et al., 2005; Go, 1999; Juang & Cookston, 2009; Nguyen et al., 1999; Skinner, 2000; Yasuda & Duan, 2003) and one found assimilation to be a risk factor (Dinh, 2000).

In the meta-analysis (including the adult studies), there were similarly discrepant results, however, the authors did find small effects suggesting that association with *either* U.S. culture or traditional Asian culture was associated with lower levels of depression (Gupta et al. 2013). This suggests that the culture with which adolescents identify might be less important than the fact that they feel an identification with at least one of them. With regard to acculturation strategies, marginalization may therefore increase the risk for depressive symptomatology, as originally theorized by Berry (1997).

3.4.2 Depression and intergenerational cultural dissonance

The relationship between depression and ICD has been much more consistent. Several studies have found that a higher level of ICD within Asian immigrant families is strongly associated with increased risk for depression (Cheng, Lin, & Cha, 2015; Kim et al., 2009; Wong, 2000; Ying & Han, 2007) including suicidal ideation (Lau, Jernewall, Zane, & Myers, 2002). Ying & Han (2007) found a significant longitudinal effect of ICD on depressive symptomatology among Southeast Asian youth in the U.S. The more consistent findings between ICD and depression relative to acculturation and depression may be because ICD represents a more complete and accurate depiction of cultural processes among youth by taking into account the familial context (Kim et al. 2009).

As discussed above, ICD has been strongly associated with increased amounts of within family conflict (Choi et al. 2008). ICD is hypothesized to cause depressive symptoms in youth through several different processes. Crane et al. (2005) argued that depression occurs when adolescents begin to internalize their feelings associated with the parental conflict (Crane et al. 2005). Cheng et al. (2015) theorized that because the conflict is contrary to many Asian family values such as familial harmony and piety, the adolescent begins to feel shame, guilt, and other symptoms associated with depression. Kim et al (2009) hypothesized that ICD causes conflict that results in a communication breakdown between adolescent and caregiver. The adolescent therefore loses a critical source of emotional support leading to feelings of hopelessness and helplessness (Kim et al. 2009). Ying & Han (2007) noted that adolescents feel confused by the discrepant environments with their peers at school and in the neighborhood compared to their lives

at home. They also begin to feel trapped by their home environments in which the conflict occurs leading to depressive symptoms (Ying & Han, 2007).

3.4.3 Depression and alcohol use

Alcohol use problems and depression are commonly comorbid among adolescents in the United States (Galaif, Sussman, Newcomb, & Locke, 2007) and are actually among the most commonly co-occurring mental health problems in youth (Rohde, Lewinsohn, & Seeley, 1991). Although a large number of studies have linked alcohol use and depression (e.g., Aseltine, Gore, & Colten, 1998; Hansell & White, 1991; Hawkins, Catalano, & Miller, 1992), the directional nature of the relationship is still unclear. Some studies have found that depression precedes alcohol use (Deykin, Levy, & Wells, 1987) while others have found the reverse (Rohde et al., 1991). This open question has led researchers to call for additional longitudinal research to determine directionality of the relationship (Galaif et al., 2007).

Depression has been linked to alcohol use among Asian Americans (Cheng, Lee, & Iwamoto, 2012; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Using a nationally representative sample of Asian American adults, Cheng et al. (2012) found that the risk for substance use disorders and depression was higher among those who had heavy alcohol use compared to those who drank at lower levels. Two additional studies found that depression was a predictor of alcohol use among Asian American girls (Fang, Barnes-Ceeney, & Schinke, 2011; Otsuki, 2003), potentially as a coping mechanism for depressed mood (Fang et al., 2011).

3.5 Trauma and alcohol use

Chapter 2 of this dissertation discussed the political and migration history of Cambodian and Vietnamese refugees and immigrants in the United States. Although trauma is not the focus of this investigation, it must be considered given the context within which Vietnamese and Cambodian immigrants migrated to the U.S. in the 1970's and 1980's. As described in Chapter 2, Southeast Asian immigrants experienced a wide range and substantial amounts of potentially traumatizing events before immigration, such as war-like conditions, torture, forced separation from loved ones, lack of food and water, and protracted lengths of time spent in refugee camps (Koch-Weser et al., 2006; Ying & Han, 2007).

The literature has indicated that trauma is associated with increased risk for alcohol use, often viewed as a negative coping mechanism for the psychological symptoms and traumatic grief associated with the events (Fox, Rossetti, Burns, & Popovich, 2005; Mollica et al., 1993; Povell, 2005). Refugee populations, in particular, have been found to have an increased risk for alcohol and substance use following trauma (Ouimette & Brown 2003). Refugee camps themselves are considered “socially hazardous, high-risk” environments (Salas-Wright & Vaughn, 2014), and extended durations living in the camps increase the likelihood of exposure to risks for substances and alcohol use problems (Ezard, 2012; Luitel, Jordans, Murphy, Roberts, & McCambridge, 2013). Nearly all of the immigrant families from Southeast Asia who arrived in the 1980's were refugees or the children of refugees (Ying & Han, 2007; Zhou & Bankston 1998).

Despite these studies, which suggest an increased risk of alcohol and substance use among trauma-affected refugee populations, the literature is not consistent in this area. Marshall et al. (2005), for example, studied Cambodian refugees who had resettled in the U.S. Data were collected over 20 years after resettlement. Results indicated that although prevalence of trauma (100% of the sample), depression (51%) and PTSD (62%) was quite high, occurrence of alcohol use disorder was very low (4%) (Marshall et al. 2005). D'Amico et al. (2007) found that a very low percentage of Cambodian refugees in the U.S. (2%) reported heavy drinking in the past 30 days. Similarly, Salas-Wright and Vaughn (2014) found that refugees in the U.S. had a lower risk for alcohol and substance use problems compared to both native-born Americans and immigrants who were not refugees.

3.5.1 Intergenerational transmission of trauma

Parental trauma may have an effect on children and adolescents, even trauma that occurred decades before the children were born. Much of the literature on intergenerational transmission of trauma comes from samples of Holocaust survivors, although studies have yielded inconsistent results (Van Ijzendoorn, Bakermans-Kranenburg, & Sagi-Schwartz, 2003). Several studies have found that offspring of Holocaust survivors had an increased risk for developing PTSD themselves in adulthood (Solomon, Kotler, & Mikulincer, 1988), greater risk for fearfulness and anxiety in adulthood (Zilberfein, 1996), and lower levels of cortisol, a risk factor for hypersensitivity to stress (Yehuda, Schmeidler, Wainberg, Binder-Brynes, & Duvdevani, 1998), as compared to individuals with parents who were not Holocaust survivors.

Other studies, however, have found that children of Holocaust survivors did not have mental health problems at differential rates than offspring of those who did not experience the Holocaust (Leon, Butcher, Kleinman, Goldberg, & Almagor, 1981; Sigal & Weinfeld, 1989). A meta-analysis among nonclinical samples of children of Holocaust survivors found no significant effect of parental trauma on the psychological well-being of the children (Van Ijzendoorn et al., 2003). The authors posited that the null findings could be due to several protective factors among this population. As described by Field et al. (2011): “[they] experienced prewar years of relative peace and stable family relationships promoting basic trust and positive role models as a foundation for their own later parenting. After the war, they had access to social support structures to assist them in working through their traumatic Holocaust memories.”

These types of protective factors may not necessarily apply to Southeast Asian families, particularly those from Cambodia (Field et al., 2011). Conflict and poverty existed in Cambodia even before the Khmer Rouge and so there was no relative time of peace and stability pre-war. Following the regime’s fall, many Cambodians were confronted with additional traumas through Khmer Rouge insurgencies and poor conditions in Thai refugee camps (Field et al., 2011). A similar argument could be made for Vietnamese refugees, who experienced protracted conflicts and lengthy and traumatic migration experiences. Both groups have faced discrimination and a lack of social support following migration (Chae, Lee, Lincoln, & Ihara, 2012).

In a study of Cambodian high school students whose parents had survived the Khmer Rouge atrocities, Field et al. (2011) found that parental trauma symptoms were indeed significantly associated with depression and anxiety in the high school-aged

adolescents. The relationship was mediated by parenting style (specifically, role-reversing and overprotective parenting style), suggesting that intergenerational transmission of trauma among this population may occur through parenting practices. Tajima and Harachi (2010) found that acculturation was associated with parenting style among Vietnamese and Cambodian caregivers and they hypothesized that differential acculturation between the groups was due, in part, to differences in previously experienced traumas. Mental health and substance use problems among Cambodian refugee parents that are related to previous traumas have also been associated with subsequent child maltreatment and neglect (Chang, Rhee, & Berthold, 2008), a known risk factor for alcohol use (Hawkins et al., 1992). In summary, these studies suggest that among Southeast Asian immigrant families, parental trauma may impact psychological well-being and substance use risk among adolescents through parental practices.

3.6 Conceptual Framework

Based on the literature discussed in this chapter, Figure 3.1 below presents the conceptual framework for the three aims of this dissertation to be explored in the subsequent chapters.

Aim 1 will investigate the longitudinal relationship of acculturation and alcohol use among Vietnamese and Cambodian immigrant women; Aim 2 will investigate the longitudinal relationship of ICD and alcohol use among the adolescent children of those caregivers; and Aim 3 will investigate the potentially mediating role of depression in the adolescent ICD-alcohol use relationship.

Aim 1, represented in red, indicates the hypothesized relationship between caregiver acculturation and alcohol use. Acculturation theory posits that a greater degree

of identification with American society leads to foreign-born individuals adopting a variety of cultural norms and practices of those born in the U.S. (Chen & Zhong, 2013; Sutherland, 1924). Applied to alcohol use, this would entail a likely increase in alcohol consumption among immigrants with a greater degree of adoption of U.S. norms and practices compared to those with a lesser degree of adoption of these norms and practices given the higher rates of alcohol use in the U.S. than Cambodia and Vietnam.

Figure 3.1 also displays the hypothesized relationship of variables included in Aim 2, denoted in blue, and how Aim 1 and Aim 2 fit together. Acculturation theory of children argues that they are likely to be exposed to U.S. culture more rapidly and in more depth than their caregivers (Chen & Zhong, 2013). This leads to a discrepancy in level of acculturation between caregiver and child. As described in this chapter, this discrepancy is known as ICD and is associated with a host of negative child outcomes (Choi et al., 2008; Chung, 2001; Hwang, 2006; Kibria, 1993; Lee et al., 2005; Lim et al., 2011; Kim, Chen, Li, Huang, & Moon, 2009; Kim, Chen, Wang, Shen, & Orozco-Lapray, 2013; Marsiglia et al., 2009; Unger, Ritt-Olson, Wagner, Soto, & Baezconde-Garbanati, 2009).

Acculturation theory of children from immigrant families, similar to that of adults, also holds that a greater degree of integration into American society leads to foreign-born children adopting American cultures and practices (Chen & Zhong, 2013; Hagan, Levi, & Dinovitzer, 2008). Thus, with regard to alcohol use, they may be more likely to consume alcohol as their degree of integration increases (Hahm et al., 2004). Adolescent acculturation is also clearly related to the degree of ICD between the

adolescent and caregiver. In the framework for Aim 2, adolescent acculturation is included to control for its potentially confounding effects.

Adolescent alcohol use is also expected to be associated with caregiver alcohol use and, as described in the hypothesis for Aim 1, caregiver alcohol use is expected to be associated with caregiver acculturation. Previous research among Asian American populations has indicated that adolescents who have caregivers with alcohol use problems are at a higher risk for alcohol use problems themselves (Hendershot et al., 2005). Therefore, caregiver alcohol use will also be assessed for possible inclusion in the analysis model for Aim 2.

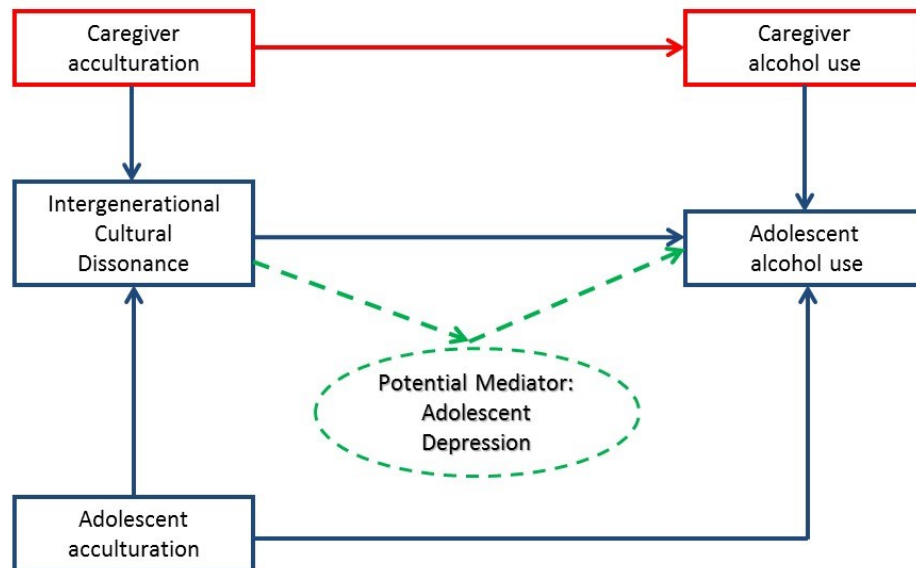
Aim 3, represented in green, depicts the hypothesized mediating role of adolescent depression in the relationship between ICD and alcohol use. Few studies have investigated the role of mental health on acculturation-alcohol use relationships. A great deal of research, however, has indicated that alcohol use problems are strongly associated with mental health problems, including depression (Cheng, Lee, & Iwamoto, 2012; Kessler et al., 1995), that Asian Americans with alcohol use problems were more likely to have depression compared to other racial and ethnic groups (Cheng et al., 2012; Ja & Aoki, 1993; Park, Shibusawa, Yoon, & Son, 2010), and that ICD is consistently associated with depression among Asian youth (Cheng et al., 2015; Kim et al., 2009; Wong, 2000; Ying & Han, 2007).

With the exception of adolescent acculturation, additional potential moderators and confounders are not presented in the Figure 3.1 graphical framework. For example, variables such as refugee status might have significant impact on levels of alcohol use and acculturation and may need to be taken into account. Final statistical models will

include confounders based on *a priori* theory and literature review as well as results from preliminary bivariate models. These details will be provided in Chapter 4 and in the individual analyses in Chapters 5-7.

Figure 3.1 Conceptual Framework for Aims 1, 2, and 3

Red: Aim 1
Blue: Aim 2
Green: Aim 3



3.7 Summary

In conclusion, the literature suggests that alcohol use and alcohol use disorder prevalence are generally low among Asian American adults and adolescents, but that the rates may be increasing, particularly among young adults, and that there are significant differences in drinking behavior and correlates between Asian nationalities. Prevalence data among Vietnamese and Cambodian immigrants are sparse and studies that do disaggregate Asian subgroups rarely include Southeast Asians.

Most of the research on acculturation, ICD, and alcohol use has been conducted with Hispanic populations. Studies suggest that greater identification with U.S. culture and greater amounts of parent-child ICD are associated with increased risk for alcohol use and drinking problems. Studies were often limited, however, by unidimensional measures of acculturation. ICD has been found to lead to depressive symptomatology among Asian American youth and there is a clear link between depression and alcohol use among adolescents, but the direction of the relationship remains unclear. Finally, Vietnamese and Cambodian immigrants experienced a wide range of potentially traumatic events. Studies have indicated that trauma symptoms may impact psychological well-being and associated behavior such as alcohol use among children through parenting practices.

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Chapter 4. Methods

4.1 The Cross-Cultural Families Project

The Cross-Cultural Families Project (CCF) was a 5-year longitudinal study of Vietnamese (predominantly Kinh ethnicity) and Cambodian (predominantly Khmer ethnicity) immigrant families in Washington State (PI: Tracy Harachi). Investigators aimed to follow a cohort of adolescents from these families and their caregivers to explore the risk and protective factors associated with several behavioral outcomes among youth (Choi, He, & Harachi, 2008). The study was active between 2001 and 2005 during which time a cohort of 327 families was followed. These data will be used as the basis for the analyses described in this chapter and the results presented in Chapters 5-7.

4.1.1 Participants and Procedure

In 1998, the primary investigators of CCF obtained school district lists for elementary schools in the Seattle metro area. These lists served as the sampling frame. A stratified random sampling method was used to randomly select an approximately equal number of Cambodian and Vietnamese families from the lists who had children in 2nd, 3rd, or 4th grade. This recruitment resulted in 262 families enrolled who agreed to participate in a pilot project and later be re-contacted for a larger study (Tajima & Harachi, 2010). Among the 262 families in the pilot study, 237 (90.5% of the original sample) agreed to participate in the CCF project starting in 2001. Using similar methodology as the original recruitment, an additional 113 Vietnamese and Cambodian families were randomly selected from school district lists of whom 90 (79.6% of the new families selected) agreed to participate. The final sample size was 327 families.

Informed consent was obtained from all participating family members including one caregiver and one child in the family. At the 2001 baseline visit all of the children and adolescents in the study were in 5th, 6th, or 7th grade. Caregivers agreed to give consent for their children to participate through age 18 (Tajima and Harachi, 2010). All 327 families were included in the analyses described in this dissertation; there were no additional inclusion or exclusion criteria.

Data were collected on all 327 families beginning in 2001 with annual interviews through 2005 resulting in five waves of data. Although data were also collected annually from teachers of the adolescents (Choi et al., 2008), this dissertation focused exclusively on data from the adolescents and their caregivers. Interviews were conducted separately with the adolescents and caregivers and were facilitated in-person by trained interviewers. Adolescent interviews were conducted in private locations within the school they attended and caregiver interviews were conducted privately within the home (Tajima and Harachi, 2010). Study participants were able to complete the interview in their preferred language (or combination of languages in case clarification was needed).

4.1.2 Ethical approval

The original CCF study including all data collection was approved by the University of Washington Institutional Review Board. The studies described in this dissertation were all secondary analyses of de-identified data obtained from the completed CCF project and were designated with exempt status by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board.

4.1.3 Measures

All measures included in the CCF interviews were translated from English into Vietnamese and Khmer languages. Measures were also back-translated to ensure translation accuracy and that discrepancies between the two versions were reconciled (Choi et al., 2008). The study instrument was pretested among non-participant Vietnamese and Cambodian families in the community to check phrasing and comprehension of the items (Harachi, Choi, Abbott, Catalano, & Bliesner, 2006). The measures also underwent validity testing procedures including assessing conceptual, functional, item, and scalar equivalence (Harachi et al., 2006).

The full CCF study instrument included dozens of scales and over 500 items. This dissertation used measures from that instrument (described below) of alcohol use, depression, acculturation, and ICD, as well as additional covariates to be included as potential moderators and confounders. There were three variable types included in the dissertation: 1) primary outcomes; 2) primary predictors of interest including moderating and mediating variables; and 3) covariates used to control for potential confounding. The primary measures are summarized in Table 4.1 below and all measures are described in detail in the text. A full list of all items included in the study scales (adolescent and caregiver acculturation, ICD, adolescent depression, caregiver exposure to trauma and violence) is included as Appendix A.

Outcome variables

Caregiver alcohol use was based on National Institute of Alcohol Abuse and Alcoholism (NIAAA) Task Force guidelines on Recommended Alcohol Questions (NIAAA, 2003) using a modified version of the Alcohol Use Disorders Identification

Test-Consumption (AUDIT-C) (Bradley et al., 2003). The AUDIT-C includes three questions pertaining to frequency of use, quantity consumed during use, and binge drinking:

- *Frequency*: In the past month, how often did you drink alcohol?
 - 0) never; 2) about once a week; 3) several times a week; 4) at least once per day
- *Quantity*: On those occasions when you would drink, how much did you typically drink?
 - 0) one to two drinks; 1) three to four drinks; 2) five to six drinks; 3) seven to eleven drinks; 4) twelve or more drinks
- *Binge drinking*: How often did you have 5-6 drinks in one occasion?
 - : 0) never; 2) once or twice a month; 3) once or twice a week; 4) at least three times per week or daily

Based on scoring criteria for the AUDIT-C, responses to the three items were summed to create a total alcohol use score with a possible range of 0-12. The total AUDIT-C score was treated as a continuous outcome in analysis models. According to previous research with the AUDIT-C, a score of 3 or higher among women is considered to indicate a high risk for hazardous alcohol use (Bradley et al., 2003).

Adolescent alcohol use was measured by one question: "in the past 30 days, on how many occasions have you had beer, wine, or liquor?" Response options included: 1) never; 2) 1-2 times; 3) 3-5 times; 4) 6-9 times and 5) 10 or more times. A reference period of the past 30 days is preferred among youth as compared to a past 6- or 12-month timeframe given that alcohol use may be more irregular among underage drinkers than

among adults (NIAAA, 2003). Given the preponderance of the 30 day reference period in the literature, its use in this study readily allows for comparisons to other investigations (NIAAA, 2003).

The data for the adolescent alcohol use indicator in CCF were heavily right skewed due to a large majority of participants reporting no use in the past 30 days. For the purposes of the analyses in this dissertation, alcohol use was therefore dichotomized into 0 (no alcohol use in past 30 days) and 1 (any alcohol use in the past 30 days).

Predictor variables

Caregiver acculturation was measured by the Suinn-Lew Asian Self-Identity Acculturation Scale (Suinn, Ahuna, & Khoo, 1992). This scale includes eight items that were developed for and tested with Asian Americans. Each of the eight items cover a specific cultural domain including: language (reading and writing), food (at home and at restaurants), music, movies, whom a person associates with in the community, and *preference* for whom a person wants to associate with in the community (Suinn et al., 1992). Response options are on a Likert scale indicating the participant's preference of the item as being 1 (almost exclusively Vietnamese/Cambodian), 2 (mostly Vietnamese/Cambodian), 3 (approximately equal amounts of Vietnamese/Cambodian and non-Vietnamese/Cambodian), 4 (mostly non-Vietnamese/ Cambodian, and 5 (almost exclusively non-Vietnamese/Cambodian).

As originally designed, the Suinn-Lew scale was meant to create a single overall score of acculturation with higher scores indicating greater "acculturation" with U.S. culture (Suinn et al., 1992). As outlined in Chapter 3, this has been criticized as a unidimensional view of acculturation and does not account for the possibility that U.S.

cultural identification and traditional cultural identification are two independent constructs or that a person may identify with both cultures (bicultural) or neither culture (marginalized) (Phinney & Flores, 2002; Tajima and Harachi, 2010).

We modified the Suinn-Lew scale to measure acculturation from a multidimensional perspective using methods described by Magafia et al. (1996) and Tajima and Harachi (2010). Three scales of acculturation including traditionalism, assimilation, and biculturalism were created from the original eight Suinn-Lew items. The traditional scale was created by dichotomizing each of the eight items into 1 (if the item response was 1 or 2 for “almost exclusively” or “mostly” Vietnamese/Cambodian preference) or 0 (if the item response was 3, 4, or 5). The eight dichotomized items were summed to create a traditional cultural identification scale score with higher scores indicating greater degree of traditional cultural identification.

The bicultural and assimilation scales were created with the same methodology. For the bicultural scale, each item was first dichotomized as 1 (if original response was 3 for equal preference between Vietnamese/Cambodian and non-Vietnamese/Cambodian) and 0 (if original response was 1, 2, 4, or 5). For the assimilated scale, each item was dichotomized as 1 (if original response was 4 or 5 for “mostly” or “almost exclusively” non-Vietnamese/Cambodian preference) and 0 (if original response was 1, 2, or 3). The eight dichotomized items for each scale were summed. Higher scores on each scale indicated a greater degree of biculturalism or assimilation with U.S. culture, respectively.

This modification to the Suinn-Lew measure resulted in each participant having three scale scores. To enhance interpretability of these scores, we categorized each into "high," "medium," and "low" by analyzing the distribution of the scores and determining

appropriate cut-off points based on visual inspection rather than arbitrary cut-off points (such as tertiles). These three-level variables were included in the regression models with the "low" category as the reference group for each (see Statistical analysis section below). A three-level categorical variable has been shown to be superior to a binary indicator that has been dichotomized (e.g., a median or mean split) (Gelman & Park, 2009). The loss of statistical power in the three-level categorization is approximately 10-20% compared to a continuous predictor but we believed it was an acceptable trade-off given the enhancement in interpretability conferred by categorization.

Although this modification of the Suinn-Lew measure is an improvement over the original unidimensional scale, it only includes measures of three of the four strategies described by Berry (1997). The response options to the original Suinn-Lew scale are forced choice in the sense that a participant does not have the ability to indicate that he/she has a preference for *neither* Asian or non-Asian culture. Therefore, even after modification we were not able to create a scale for marginalization. This is a limitation of the current study.

Adolescent acculturation was measured through two scales: an identification with U.S. culture scale (16 items; $\alpha=.75$) and an identification with traditional culture scale (22 items; $\alpha=.84$). Items for these scales were drawn from: the General Ethnicity Questionnaire (15 items; Tsai, Ying, & Lee, 2000), the Multigroup Ethnic Identity Measure (15 items; Phinney, 1992), the Youth Adaptation and Growth Questionnaire (4 items; Portes & Rumbaut, 2001), and the Acculturation Scale for Vietnamese Adolescents (4 items; Nguyen & Eye, 2002).

For both scales, participants were asked how much they agreed (Likert-type scale ranging from 1 “strongly disagree” to 4 “strongly agree”) with cultural items. The traditional cultural scale included items such as “I relate to my boyfriend or girlfriend in a way that is Vietnamese/Cambodian.” The U.S. cultural scale included items such as “the people I date are American.” An average score with possible range 1-4 was calculated for both scales with higher scores indicating a greater degree of identification with that particular culture (traditional or U.S., respectively).

Using two scales to measure acculturation provides the ability to view acculturation as a multidimensional construct. We followed a similar methodology as Lim et al. (2011) in using the two independent scale scores to assign participants to one of Berry’s four acculturation strategies. Those who had an average of 3 or above on both scales, suggesting they agreed or strongly agreed on average with the cultural items of both scales, were categorized as *bicultural*. Those with a 3 or above on the traditional scale and below a 3 on the U.S. scale were categorized as *traditional*. Those with an average score below a 3 on the traditional scale and a 3 or above on the U.S. scale were categorized as *assimilated*. Finally, those with average scores below 3 on both scales were considered *marginalized*. In regression models, the 4-level categorized acculturation variable was treated as nominal with the traditional category used as the reference group.

Intergenerational cultural dissonance (ICD) was measured with the Asian American Family Conflicts Scale (Lee, Choe, Kim, & Ngo, 2000). The 10 items in the scale were administered to the adolescents in the sample ($\alpha=.86$) and were prefaced by the question "How likely is this type of situation to occur in your family?" Response options for each item were on a Likert-type scale of frequency: 1) never; 2) seldom; 3)

sometimes; 4) often; and 5) almost always. The items addressed how often the adolescents had disagreements with their caregivers over cultural-related items, such as academic achievement and dating. An average ICD score with a possible range of 1-5 was calculated with higher scores indicative of more ICD within the family. The average score was treated as continuous in regression models.

Additionally, an indicator representing change in ICD over a one-year period was created. The change variable was a binary indicator coded as 1 if ICD increased over the one year and 0 if ICD stayed the same or decreased over the one year period.

Mediating variable

Depressive symptomatology among adolescents was evaluated through The Short Feelings and Mood Questionnaire (SFMQ) (Angold et al., 1995). Adolescents were asked how often in the past two weeks they had experienced each of 13 items ($\alpha=.91$), such as “I didn’t enjoy anything at all.” Response options were modified for this study such that they would be more relevant for the children from Vietnamese and Cambodian families: 1) NO!; 2) no; 3) yes; and 4) YES!. An average depression score was calculated with a possible range of 1-4 with higher scores associated with greater depression severity. The average depression score was treated as continuous in regression models.

Additionally, a binary depression change indicator was created by coding the variable as 1 if average depression score increased over a one-year period or 0 if the depression score decreased or stayed the same over that one-year period.

Moderating variables

Nationality was a binary variable measured as either Vietnamese (coded as 0 in the regression analyses) or Cambodian (coded as 1 in the regression analyses).

Nativity was a binary variable measured as either born in the U.S. (coded as 1 in the regression analyses) or born outside the U.S. (coded as 0). *Nativity* was measured only among adolescents; all caregivers were first generation immigrants.

Additional Covariates

Demographic characteristics measured among both caregivers and adolescents included sex, age, and length of time in the U.S. (in years).

Caregiver demographic characteristics also included: citizenship status (registered alien/citizen/other), refugee status upon arrival in U.S. (coded as 1 if registered alien and 0 if legal refugee), level of educational attainment (categorized as: grade school/8th grade or less/some high school/high school graduate/some college or higher), current employment status (coded as 1 if employed and 0 if not employed), income (continuous), marital status (single/ married/widowed/separated/divorced), religion (Buddhism/Christianity/other/no affiliation), importance of religion (extremely/very/somewhat/not very/not at all), preferred language (Khmer/Vietnamese/English/other), and time spent in transition or refugee camps before arrival in the U.S. (1 if yes and 0 if no).

Caregiver exposure to traumatic events was measured using a modified version of the Harvard Trauma Questionnaire (HTQ; Mollica et al., 1992) that included 15 potentially traumatic events thought to be most relevant to Vietnamese and Cambodian populations (e.g., combat situation, forced to flee). Participants responded on a Likert-type scale how often they experienced each event ranging from 1 (not at all) to 4 (extremely). We dichotomized each item into 1 (if participant had experienced event at all indicated by original response of 2, 3, or 4) or 0 (participant did not experience event

indicated by original response of 1). The 15 dichotomized items were summed to create a total number of trauma types experienced score. This variable was treated as continuous in regression analyses.

Caregiver exposure to community violence was measured using the Assessment of Child's Exposure to Community Violence (Aisenberg & Mennen, 2000). This scale included 15 items regarding witnessing or experiencing types of community violence. Participants responded with “yes” (coded as 1) or “no” (coded as 0) for each item. A total exposure to community violence score was calculated by summing the 15 items. The community violence score was treated as continuous in the regression models.

Table 4.1 Summary of primary measures

Construct	Instrument and source	Number of items	Analysis method
<i>Primary outcomes</i>			
Caregiver alcohol use	AUDIT-C (Bradley et al., 2003)	3	AUDIT-C score generated from responses to 3 items. Treated as continuous in analysis models.
Adolescent alcohol use	In the past 30 days, on how many occasions have you had beer, wine or liquor? (NIAAA, 2003)	1	Coded as 1 if yes and 0 if no. Treated as binary.
<i>Primary predictors, mediators, and moderators</i>			
Caregiver acculturation	Suinn-Lew Asian Self-Identity Acculturation Scale (Suinn, Ahuna, & Khoo, 1992)	8	3 scales (bicultural, assimilated, traditional) created from original 8 items and average score calculated for each of the 3 scales. Each participant categorized as "high," "medium," or "low" on each scale. Treated as nominal in analysis models with the "low" category as the reference.
Adolescent acculturation	-Youth Adaptation and Growth Questionnaire (Portes & Rumbaut, 2001) -General Ethnicity Questionnaire (Tsai et al., 2000) -Multigroup Ethnic Identity Measure (Phinney, 1992) -Acculturation Scale for Vietnamese Adolescents (Nguyen & Eye, 2002)	38	2 scales created from 38 items (16 for identification with U.S. culture and 22 for traditional culture). Average score calculated for each scale. Based on both scores, individual categorized as: 1) bicultural 2) assimilated 3) traditional 4) marginalized Treated as nominal in analysis model with traditional category as the reference.
Inter-generational Cultural Dissonance	Asian American Family Conflict Scale (Lee, Choe, Kim, & Ngo, 2000)	10	Average score generated from responses to 10 items. Treated as continuous in analysis models.
Adolescent depression	Short Feelings and Mood Questionnaire (Angold et al., 1995)	13	Average score generated from responses to 13 items. Treated as continuous in analysis models.
Nativity (adolescent)	Were you born in the U.S.?	1	Coded as 1 if yes and 0 if no. Treated as binary in analysis models.
Nationality	-	-	Coded as 1 if Cambodian and 0 if Vietnamese. Treated as binary in analysis models

4.2 Statistical analysis

All of the analyses described below were conducted with Stata, Version 13 (StataCorp, 2013). Significance tests were two-tailed and $p < .05$ was considered statistically significant unless otherwise noted.

4.2.1 Missing data

Study drop-out in CCF was very low. Among the 327 families who participated in the baseline assessment, 320 (97.9%) participated in year 2; 314 (96%) in year 3; and 315 (96.3%) in years 4 and 5. Among the caregivers, item-level missing data were also minimal with less than 5% missing for any item.

The analysis for Aim 1 is among the caregivers and uses data from all five CCF waves. Therefore, all participants were included in the analysis and we used single mean imputation for the small amounts of missing data at follow-up time points.

Aims 2 and 3 focus on the adolescent data from waves 4 and 5. Although item-level missing data were also small among the adolescents, using only the latter two waves of data in the study excludes participants who had dropped out by wave 4 and increases the risk of an emigrative selection bias. We therefore decided to use a more rigorous approach for missing data among the adolescents and conducted multiple imputation procedures. Multiple imputation with chained equations was used to impute 10 datasets (Azur, Stuart, Frangakis, & Leaf, 2011; Royston, P & White, I, 2011; van Buuren, Boshuizen, & Knook, 1999). The adolescent regression analyses were then conducted with all 327 participants.

4.2.2 *Aim 1 analysis*

Exploratory data analysis was conducted to examine cross-sectional distributions of variables and check for outlying observations. This included statistical and visual exploration of the data, including calculation of means and frequencies as well as inspection of box plots and histograms for distribution of continuous variables. Bivariate associations between the primary outcome, caregiver alcohol use score, and each covariate were estimated separately. Initial checks for multicollinearity were conducted by testing for bivariate correlations between covariates to be included in the regression models. Descriptive statistics (means, standard deviations, counts, and percentages) were estimated and demographic characteristics were compared between the Vietnamese and Cambodian groups using independent means *t* tests for continuous variables and chi-squared tests for categorical variables.

Linear mixed effects regression modeling was used to assess the impact of acculturation on alcohol use over time while adjusting for the random effects of repeated measures on the same participants. Fixed effects in the model included the three categorized caregiver acculturation variables, time, nationality, and additional covariates (described above) to control for potentially confounding effects.

In order to account for the repeated measures, an appropriate variance structure must be specified and included in the model. Following the methodology of Liang and Zeger (1986), we specified an independent within-person variance structure. We then estimated the mixed effects model using weighted least squares and a robust standard error estimator.

In an exploratory analysis, we then inserted interaction terms into the model: biculturalism X time, biculturalism X nationality, traditionalism X time, traditionalism X nationality, assimilation X time, assimilation X nationality, and nationality X time. The interaction terms were inserted to explore whether the effect of acculturation on alcohol use varied over time or by nationality. Both models (with and without the interaction terms) were estimated among the full sample of caregivers in addition to only those caregivers who reported any alcohol use.

4.2.3 Aim 2 analysis

The primary predictor of interest for Aim 2, ICD, was measured only at waves 4 and 5 and so only those time points were used in the Aim 2 analysis. Exploratory data analysis was conducted on these variables using similar methodology as outlined for Aim 1. Characteristics between Vietnamese and Cambodian adolescents were again compared using independent samples *t* tests and chi-squared tests. Additionally, we assessed changes in ICD and acculturation between the two waves by using paired *t* tests and Pearson's correlation coefficient and chi-squared tests to measure the differences in alcohol use by several characteristics.

The primary analysis method for Aim 2 was multiple logistic regression. Alcohol use, the primary outcome, was measured at wave 5 and ICD, the primary predictor of interest, as well as all other covariates included in the model were measured at wave 4. The goal of the model was to estimate the effect of ICD on alcohol use while controlling for potentially confounding covariates.

Following the estimation of this model we proceeded with an exploratory moderation analysis in which we separately tested the addition of four interaction terms

to the model: (ICD X sex, ICD X nationality, ICD X acculturation, and ICD X nativity). We used a Bonferonni correction for these tests, setting the significance level at $p < .0125$ to account for the multiple comparisons.

The regression models for Aim 2 and Aim 3 (see below) were estimated with multiply imputed data and therefore estimates for regression parameters and standard errors were calculated in Stata by combining coefficients across the 10 imputed datasets (Rubin, 1987).

4.2.4 Aim 3 analysis

Aim 3 also used the adolescent data from waves 4 and 5. We used t tests and one-way Analysis of Variance (ANOVA) tests to describe severity of depression across participant characteristics.

The primary method for Aim 3 was a mediational analysis using multiple logistic regression. We followed a four step method recommended by Baron and Kenny (1986). The first step called for assessing the association between ICD and alcohol use, which was completed in Aim 2. Second, we investigated if depression was associated with ICD using an ANOVA test and a categorized ICD variable (categorized as “high,” “medium,” and “low”). Third, we investigated if depression was associated with alcohol use by estimating a multiple logistic regression model that included wave 4 depression, the binary depression change variable, and all covariates (except ICD) that were included in the Aim 2 model. Finally, we estimated a multiple logistic regression model that included ICD, depression, depression change, and all covariates as in the Aim 2 model. The goal of the final model was to determine if the effect of ICD on alcohol use was attenuated

following the insertion of the depression variables which would indicate the presence of mediation.

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Chapter 5. Longitudinal effects of acculturation on alcohol use among Vietnamese and Cambodian immigrant women in the United States

5.1 Abstract

Background: Recent studies indicate that alcohol use may be increasing among Asian American populations, however, it is presently unknown how patterns of drinking vary across specific Asian subgroups. Acculturation may be an important contributor to alcohol use behavior among immigrant populations, but this relationship is also unclear among specific Asian nationalities and has not been investigated longitudinally.

Methods: Data were obtained from the Cross Cultural Families Project (CCF), a 5-year longitudinal investigation of Vietnamese and Cambodian immigrant families living in Washington State. Alcohol use was measured with a modified version of the Alcohol Use Disorders Identification Test-Consumption (AUDIT-C). Acculturation was measured with the Suinn-Lew Asian Self-Identity Acculturation Scale. We estimated hierarchical linear mixed effects regression models with 302 women who participated in the CCF to: 1) determine if there were differences in alcohol use between Vietnamese and Cambodian women and over time; 2) analyze differences in three dimensions of acculturation (traditionalism, biculturalism, assimilation) between the groups and over time; 3) investigate the association between acculturation and alcohol use in the overall sample and among only those who reported alcohol use; and 4) in an exploratory analysis, assess if the acculturation-alcohol use relationship varied by nationality and over time.

Results: Alcohol use was very low at baseline for both groups although Cambodian women had higher AUDIT-C scores on average compared to Vietnamese women ($t=5.41, p<.0001$). Cambodian women also reported more alcohol use compared to

Vietnamese women at each of the subsequent four time points ($p < .01$ for each), although levels of drinking remained low throughout the course of the study in the overall sample. Among a sub-sample of those who reported any alcohol use ($n=81$), 40% had an AUDIT-C score that met or exceeded the recommended cut-off for hazardous drinking.

Cambodian women were more likely to report a greater degree of assimilation with U.S. culture than Vietnamese women ($p < .01$), however, there was no difference between the groups in biculturalism or traditional cultural identification, and acculturation did not vary over time. In the overall sample, none of the three acculturation dimensions were significantly associated with alcohol use. Among the sub-sample of only those who reported any alcohol use during the study, a greater degree of traditional cultural identification ($p = .03$) and biculturalism ($p = .01$) were both associated with lower levels of alcohol use but assimilation had no significant effect ($p = .11$). None of the three acculturation-alcohol use relationships were modified by nationality or time.

Conclusions: Alcohol use was very low in the overall sample, but levels of hazardous or harmful drinking may be high among those who do drink. Alcohol use and acculturation both differed significantly by nationality, but the association between the two did not.

Among this sample, acculturation does not appear to be an important factor in drinking or abstaining from alcohol, however, it does appear to be associated with drinking patterns among those who do consume alcohol. This relationship appears to be stable over time.

Clinicians should be cognizant that there are differences in alcohol use patterns between Asian nationalities and that certain aspects of cultural identification are important contributors to drinking behavior among alcohol consumers.

5.2 Introduction

Although Asians are the fastest growing racial population in the United States (Centers for Disease Control and Prevention, 2013; U.S. Census Bureau, 2010), there has historically been scant research attention on alcohol use and abuse among this population. This lack of focus may be due to the fact that rates of alcohol use among Asians are lower than for other racial groups (Substance Abuse and Mental Health Services Administration, 2013), as well as to perceptions that alcohol use disorders are not a problem in this population (Cheng et al., 2012; Fang, Barnes-Ceeney, & Schinke, 2011; Iwamoto et al., 2010). Emerging evidence suggests that rates of alcohol use disorders are increasing, however, among specific Asian subgroups in the U.S. (Grant et al., 2004; Iwamoto, Takamatsu, & Castellanos, 2012; Lee et al., 2009). Research also shows that alcohol use among Asians is associated with violence, comorbid substance use, and mental health problems (Chang, Shen, & Takeuchi, 2009; Cheng et al., 2012). Asian Americans who misuse alcohol may have higher rates of some negative correlates of alcohol misuse, including some of the aforementioned mental health problems, than other racial groups (Cheng et al., 2012; Ja & Aoki, 1993; Park, Shibusawa, Yoon, & Son, 2010). Therefore, it is important to address alcohol use among this population.

In a review of studies on alcohol use among Asian Americans, Wang et al. (2012) presented strong arguments for why future research should distinguish between specific Asian nationalities rather than grouping them together as is most commonly done in the literature. First, predictors of drinking behavior vary by Asian nationality. For example, Southeast Asian immigrants are more likely to have low socioeconomic status than many other immigrant Asian groups (Lim et al., 2011; Rumbaut, 2000) and a recent study

found that perceived discrimination was associated with increased drinking among Vietnamese immigrants in the U.S., but not among Chinese or Filipino immigrants (Park, Anastas, Shibusawa, & Nguyen, 2014). Second, nationality and reason for migration to the U.S. (i.e. forced migration due to conflict vs. voluntary migration) likely play a critical role in risk for mental health problems and substance and alcohol use (Fox et al., 2005; Mollica et al., 1993; Povell, 2005). Those who have been forcibly displaced from their homes or countries, for example, may be at a particularly increased risk (Ezard, 2012; Luitel, Jordans, Murphy, Roberts, & McCambridge, 2013). Southeast Asian immigrants, including those from Vietnam and Cambodia, constitute populations that have substantial histories of potentially traumatic events including war-related traumas, separation from families and loved ones during flight, and extended stays in refugee and transition camps (Koch-Weser, Liang, & Grigg-Saito, 2006; Ying & Han, 2007).

Ignoring the subgroup distinctions also discounts variation in cultural drinking norms and practices (Iwamoto et al., 2012; Kim, Yang, Atkinson, Wolfe, & Hong, 2001), and differences in how groups adjust to life in the U.S (Choi, He, & Harachi, 2008). Thus, there may be significant variability in rates of alcohol related problems among Asians of different nationalities (Iwamoto et al., 2012; Iwamoto, Corbin, & Fromme, 2010; Le, Goebert, & Wallen, 2009; Thai, Connell, & Tebes, 2010; Nishimura, Goebert, Ramisetty-Mikler, & Caetano, 2005), and it is important to take nationality into account.

All immigrants, regardless of the pre-migration experience, undergo a process of adjustment upon immigrating to a new country such as the U.S, known as acculturation. Acculturation has been defined as "the multidimensional process of the adoption of U.S.

cultural norms, values, and lifestyles" (Alegria, 2009; Lara, Gamboa, Kahramanian, Morales, & Bautista, 2005; (Wilson-Portuondo, 2003). According to Berry (1997) and as described in detail in Chapter 3, there are four potential acculturation strategies employed by immigrants: 1) *assimilation*, which refers to the complete replacement of traditional cultural practices with those from a new culture 2) *biculturalism*, referring to the adoption of beliefs and practices of *both* a traditional and new culture, *traditionalism*, referring to the retention of the majority of traditional cultural customs and a lack of adoption of new cultural norms and practices, and *marginalization*, referring to a lack of identification with either a traditional or a new culture (Berry, 1997; Lim et al., 2011).

Acculturation is of interest to U.S. public health researchers and practitioners due to rapid growth in immigrant populations and increasing evidence that it is linked to a range of physical and mental health outcomes (Dao, Lee, & Chang, 2007; Hyeouk Chris Hahm, Lahiff, & Barreto, 2006; Kim, Yang, Atkinson, Wolfe, & Hong, 2001; Suinn, 2010). Acculturation may also differ across ethnic groups (Choi et al., 2008; Phinney, Ong, & Madden, 2000; Rumbaut, 1996). For this reason, similar to the calls by researchers to begin disaggregating specific Asian nationalities with regard to alcohol use, some have argued for a focus of acculturation studies on specific Asian nationalities, such as Cambodian and Vietnamese (Choi et al., 2008; Chung, 2001; Koch-Weser et al., 2006).

Upon arrival in the U.S., immigrant populations have lower levels of substance and alcohol use as compared to native-born Americans (Almeida, Johnson, Matsumoto, & Godette, 2012; Li & Wen, 2013). This is evidence in support of a "healthy migrant effect," a trend observed in several epidemiological studies that indicates immigrants

often have better overall health upon arrival in a host country as compared to the native population (Salas-Wright & Vaughn, 2014). Researchers have attributed this phenomenon in part to a selection bias: those who migrate are likelier to be healthier, have more education, and are less likely to have harmful consequences associated with alcohol and substance use than those who do not migrate (Palloni & Arias, 2004). Studies have indicated, however, that this protective effect appears to dissipate over time (Fennelly, 2007).

One potential explanation for the waning of the healthy migrant effect over time is acculturation (Fennelly, 2007). Acculturation theory posits that a greater degree of integration into American society leads to foreign-born individuals adopting a variety of cultural norms and practices of those born in the U.S. (Chen & Zhong, 2013; Sutherland, 1924). Alcohol use and abuse are substantially higher in the U.S. than in many countries from which immigrants arrive, including Cambodia and Vietnam. It follows then, that applied to alcohol use, acculturation theory would predict a likely increase in alcohol consumption among immigrants who have a greater degree of integration with U.S. culture relative to those with a lesser degree.

Several studies have shown that acculturation is associated with an increased risk for alcohol use among Asian American adults (Park et al., 2014; Savage & Mezuk, 2014; Suinn, 2010; Wong et al., 2007). These studies were limited, however, by unidimensional proxy measures of acculturation. The unidimensional assumption implies that immigrants become more “acculturated” over time and that adoption of U.S. culture necessitates the simultaneous loss of traditional cultural identification. It makes it theoretically impossible, therefore, for the bicultural or marginalized strategies to be adopted (Berry,

1997). These types of unidimensional measures, as outlined in Chapter 3, also make it impossible to discern whether the increased alcohol use risk conferred by acculturation is due to the adoption of U.S. cultural norms, the loss of traditional cultural norms, or some combination of both (Schwartz, Unger, Zamboanga, & Szapocznik, 2010). Although most studies conclude that it is the former, the unidimensional nature of the acculturation measures do not permit this distinction and therefore the conclusions may not be accurate.

The body of literature regarding acculturation and alcohol use among Asian immigrants is increasing, however, previous studies have been limited by focusing on Asians in aggregate (i.e. not specifying Asian sub-groups), by using only single-item unidimensional proxy measures of acculturation such as English language proficiency and length of time since immigration, and by employing cross-sectional study designs that preclude analysis of whether acculturation or alcohol use varies with time (Park et al., 2014; Wang, Kviz, & Miller, 2012). Given the current gaps in knowledge, the present study uses longitudinal data from Vietnamese and Cambodian immigrant adults to test: 1) if alcohol use rates differ between the two nationalities and over time; 2) how the degree of acculturation differs between the two nationalities and over time; 3) if acculturation is associated with alcohol use among the overall sample and among only those who drink alcohol; and 4) in an exploratory analysis, whether the association between acculturation and alcohol use varies by nationality and time. The exploratory analysis is based on a recent study by Park et al. (2014) which found that just as there are differences in alcohol use and acculturation between Asian nationalities, the relationship between acculturation and alcohol use may vary across Asian nationalities as well.

5.3 Methods

5.3.1 Participants and Procedure

Data for this study are from the Cross Cultural Families Project (CCF), a 5-year longitudinal study of 327 Cambodian and Vietnamese adolescents (5th-7th grade at baseline) and their caregivers conducted between 2001 and 2005 in Washington State. CCF utilized participants from a pilot study (caregivers and children in 2nd-4th grade) conducted in 1998 who agreed to be re-contacted for the larger study. Participants in the pilot study were selected using a stratified random sampling method from a school district list. Of 262 families who agreed to be re-contacted, 237 (90.5%) consented to be enrolled in CCF. One-hundred and thirteen additional Cambodian and Vietnamese families with children in 5th-7th grade were then also randomly selected from a school district list of whom 90 consented, bringing the final sample to 327 families, including 164 Cambodian and 163 Vietnamese (Tajima & Harachi, 2010). The present study focuses solely on the caregivers from the CCF project, all of whom were female (n=324; three adolescents did not have caregivers participate in the study) with whom interviews were conducted annually.

For a small proportion of the sample (n=22), the woman participating in the study varied at one or more of the five time points. For example, a mother may have appeared at the initial baseline interview but a grandmother or older sister may have presented at subsequent study visits. The current study is interested in the alcohol trajectories of individual adults, therefore we decided to drop these 22 observations.

We conducted a sensitivity analysis in which we included the 22 observations using the following methodology: the caregiver that appeared the most number of times

during the five year study was considered to be the primary participant. If there was a tie (e.g., a mother and a grandmother both participated two times each), the participant who came to an earlier study visit was considered the primary participant. All data for observations from non-primary participants were set to missing and then imputed using multiple imputation procedures. There was no significant difference in the results of this sensitivity analysis compared to the analysis in which we dropped the 22 observations, therefore we present the results without those 22 observations (n=302). Retention of participants was 95% at wave 2, 92% at wave 3, and 93% at both wave 4 and wave 5.

The original data collection for CCF was approved by the University of Washington Human Subjects Committee. The current study was designated with exempt status by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board.

5.3.2 Measures

All items were translated into Khmer and Vietnamese and back-translated (Choi et al., 2008). Respondents could complete the interviews in the language of their choice (English, Khmer, Vietnamese, or a combination of languages if clarification was needed).

Outcome

Alcohol use was measured by a modified version of the Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) (Bradley et al., 2003). The AUDIT-C includes three items based on National Institute of Alcohol Abuse and Alcoholism (NIAAA) Task Force guidelines on Recommended Alcohol Questions corresponding to frequency and quantity of use as well as binge drinking. The addition of a binge drinking item in the calculation of an alcohol use score based on quantity and frequency questions

provides a more accurate estimate of hazardous drinking patterns among adult populations (Stahre, Naimi, Brewer, & Holt, 2006).

The first item measured *frequency* of drinking and asked participants how often they drank alcohol in the past month: 0) never; 2) about once a week; 3) several times a week; 4) at least once per day.

The second item measured *quantity* and asked participants how much they typically drank on those occasions when they consumed alcohol: 0) one to two drinks; 1) three to four drinks; 2) five to six drinks; 3) seven to eleven drinks; 4) twelve or more drinks.

The third item measured *binge drinking* and asked participants how often they had at least five or six drinks in a single occasion: 0) never; 2) once or twice a month; 3) once or twice a week; 4) at least three times per week or daily.

The scores from the three items were summed to calculate a total alcohol use score with a possible range of 0-12. A cut-off score of three or above has been shown to identify women with active alcohol abuse or dependence with good sensitivity (.80) and specificity (.87) (Bradley et al., 2003). Higher scores on these three items have also been associated with increased risk for adverse health and safety outcomes (Substance Abuse and Mental Health Services Administration- U.S. Department of Health and Human Services, 2013).

Predictor

Acculturation was measured through eight items from the Suinn-Lew Asian Self-Identity Acculturation Scale (Suinn, Ahuna, & Khoo, 1992), developed and validated specifically for Asian populations. The eight items cover a range of preferences in several

domains of acculturation, such as language, food, association with community members, and entertainment (Table 5.1). Response options for each of the eight items used Likert-type scales and ranged from 1 (preference for almost exclusively Vietnamese/ Cambodian food/entertainment/language/ associating with other Vietnamese/ Cambodians) to 5 (preference for almost exclusively non-Vietnamese/ Cambodian food/music/language/associating with non-Vietnamese/ Cambodians). A response of 3 was associated with approximately equal amounts of preference for Vietnamese/ Cambodian and non-Vietnamese/Cambodian.

Table 5.1 Items in the Suinn-Lew Asian Self-Identity Acculturation Scale

Whom do you now associate with in the community?
If you could pick, whom would you choose to associate with in the community?
What is your food preference at home?
What is your food preference at restaurants?
What is your music preference?
What is your movie preference?
Do you write in Vietnamese/Khmer/English?
Do you read in Vietnamese/Khmer/English?
Item Response Options: 1) Almost exclusively Vietnamese/Cambodian; 2) Mostly Vietnamese/Cambodian; 3) About equal amounts Vietnamese/Cambodian and non-Vietnamese/Cambodian; 4) Mostly non-Vietnamese/Cambodian; 5) Almost exclusively non-Vietnamese/Cambodian

The original scale was intended to be summed to create an overall acculturation score with higher scores associated with a greater degree of acculturation than lower scores (Suinn et al., 1992). As discussed in the Introduction, this has been criticized as being unidimensional; that is, it places individuals on a continuum with those highly identifying with U.S. culture on one end of a spectrum and those with low identification with U.S. culture on the other. It does not account, then, for individuals who may be bicultural-- who identify with U.S. customs and norms but have retained a degree of their traditional culture as well (Phinney & Flores, 2002; Tajima & Harachi, 2010).

We therefore modified the Suinn-Lew scale in a manner recommended by Mendoza (Magafia et al., 1996) and with the same methodology as previously employed in a study of acculturation and parenting beliefs and practices (Tajima & Harachi, 2010). The eight original items from the Suinn-Lew scale were used to create three continuous variables of acculturation: "traditionalism," "biculturalism," and "assimilation" (Tajima & Harachi, 2010). First, the traditional cultural identification scale was created by dichotomizing each of the eight items. Items were coded as 1 if the participant indicated a 1 ("almost exclusively Vietnamese/ Cambodian preference") or 2 ("mostly Vietnamese/Cambodian preference") and coded as 0 if they responded otherwise. The eight dichotomized items were then summed to create a scale with higher scores indicating a greater identification with traditional culture.

The bicultural scale was constructed in an identical manner by dichotomizing all eight items. Items were coded as 1 if the participant responded to the original question with option 3 ("about equally Vietnamese/Cambodian and non-Vietnamese/Cambodian preference") and coded as 0 otherwise. A summed scale was created with higher scores indicating a greater degree of biculturalism.

Finally, a third scale for assimilation was created by again dichotomizing the eight items. Each item was coded as 1 if the participant responded to the original item with options 4 ("mostly non-Vietnamese/Cambodian preference") or 5 ("almost exclusively non-Vietnamese/Cambodian preference") and coded as 0 otherwise. The items were summed to form a scale with higher scores indicating a greater identification with U.S. culture (Tajima & Harachi, 2010).

Each participant therefore had a score for each of the three scales. To enhance interpretability, scores on each of the three new acculturation scales were categorized as "high," "medium," and "low" by analyzing the distribution of the scores and determining appropriate cut-off points based on visual inspection of the data. These three-level variables were used in analysis models with the "low" category as the reference group for each. Categorizing the data into three groups has been shown to perform adequately statistically, retaining between 80%-90% efficiency compared to a linear regression with a continuous predictor, and has been shown to perform much better than a standard binary split (Gelman & Park, 2009).

Covariates

Demographic characteristics included sex, age at baseline, nationality (Cambodian or Vietnamese), level of educational attainment (categorized as: grade school/8th grade or less/some high school/high school graduate/some college or higher), current employment status (coded as 1 if employed and 0 if not employed), income (continuous), marital status (single/married/ widowed/separated/divorced), religion (Buddhism/Christianity/other/no affiliation), importance of religion (extremely/very/somewhat/not very/not at all), preferred language (Khmer/Vietnamese/English/other), time spent in transition or refugee camps before arrival in the U.S. (1 if yes and 0 if no), number of years living in the U.S., citizenship status (registered alien/citizen/other), and refugee status upon arrival in U.S. (coded as 1 if registered alien and 0 if legal refugee).

Exposure to traumatic events was assessed using the Harvard Trauma Questionnaire (HTQ; Mollica et al., 1992). This was a modified version of the HTQ that

included 15 items thought to be most relevant to Vietnamese and Cambodian populations. Participants were asked to what degree they had experienced or witnessed a potentially traumatic event. Examples included "being forced to flee," "combat situation" and "forced separation from family members." Responses were on a Likert-type scale: 1) not at all; 2) sometimes; 3) fairly often; 4) very often. For the present study, each of the 15 items was dichotomized into 1 if the participant had ever experienced or witnessed the event (responding 2, 3, or 4 to the original item) or 0, if the participant had never experienced or witnessed the event at all (responding 1 to the original item). A total trauma type exposure score was calculated for each participant by summing the 15 dichotomized items.

Exposure to community violence was measured using the Assessment of Child's Exposure to Community Violence (Aisenberg & Mennen, 2000). Participants were asked to respond whether they had witnessed or experienced 15 types of violent events in their community. Responses were yes (coded as 1) or no (coded as 0). Examples of these items included: "have you ever been robbed," "have you ever been choked or strangled," and "have you ever been beaten up by someone with a weapon." Responses for all 15 items were summed to create a community violence exposure score.

Exposure to traumatic events and community violence are important to measure in this population as previous research has indicated that they may be associated with both increased alcohol use and risk for mental health problems (Adams, Boscarino, & Galea, 2006; Spasojević, Heffer, & Snyder, 2000).

5.3.3 Statistical Analysis

We used means and standard deviations (for continuous variables) and counts and percentages (for categorical variables) to describe baseline participant characteristics. Independent samples *t* tests and chi-squared tests were used to evaluate differences in characteristics between Vietnamese and Cambodian participants at baseline, as well as differences in AUDIT-C scores and acculturation at all five waves. Estimated *p* values were two-tailed with a predetermined significance level of 0.05.

Mean imputation was used to account for the small percentage of item-level missing data (<5% for any item) and study dropout. Regression analyses were therefore conducted using data from all 302 study participants. We estimated a linear mixed effects regression model with the AUDIT-C score as the continuous outcome. Fixed effects included the three categorized acculturation dimensions, nationality, and additional covariates that were included to control for potential confounding effects. The decision on inclusion of covariates was based on statistical association with the outcome ($p < .05$) and/or a substantial theoretical association with acculturation and alcohol use. A variable for time was also included as a fixed effect and treated continuously. The only random effect included in the model was participant. We assumed an independent within-person correlation structure for alcohol use and estimated the model using a weighted least squares approach with a robust standard error estimator. This methodology has been shown to produce accurate standard errors and *p* values in analysis of longitudinal data (Liang & Zeger, 1986). The purpose of the model was to determine the strength and statistical significance of the direct effects of each of the three categorized acculturation variables on alcohol use while controlling for potentially confounding covariates.

In an exploratory analysis, we then estimated an identical mixed effects model that added seven two-way interaction terms: biculturalism X time, biculturalism X nationality, traditionalism X time, traditionalism X nationality, assimilation X time, assimilation X nationality, and nationality X time. The interaction terms were added to explore differences in the acculturation-alcohol use relationships by nationality and over time. We conducted this procedure for both the overall sample as well as among a subsample of only those who had reported using alcohol at some point during the course of the study.

5.4 Results

The study sample consisted of 147 Cambodian and 155 Vietnamese adult women. The average age of participants at baseline was 42, with no significant difference by nationality ($p=.08$). There were, however, considerable differences in other baseline characteristics between the groups. Cambodian women had lived in the U.S. for an average of four more years than Vietnamese women (16.28 years and 13.56 years, respectively; $p<.0001$), but were much less likely to have U.S. citizenship ($p<.0001$). Cambodians also reported a greater number of experienced trauma types on average compared to Vietnamese (6.33 and 2.01, respectively; $p<.0001$). Demographic characteristics, including marital status, level of educational attainment, current employment status, religion, religiosity, language, and time spent in transition camps all differed significantly between the nationalities. The baseline participant characteristics are summarized in Table 5.2.

Table 5.2 Baseline characteristics of study sample (n=302)

	Total Sample (n=302) ^a	Cambodian (n=147) ^a	Vietnamese (n=155) ^a	Independent samples <i>t</i> test/ χ^2	<i>p</i>
	mean (SD)				
Age	41.77 (7.03)	41.03 (7.24)	42.47 (6.77)	1.77	.08
Number of years in the U.S.	13.56 (5.22)	16.28 (3.80)	11.05 (5.10)	-9.94	<.0001
Number of trauma types experienced	4.11 (4.25)	6.33 (4.39)	2.01 (2.82)	-9.85	<.0001
Exposure to community violence	0.63 (1.45)	0.71 (1.66)	0.55 (1.22)	-0.95	.34
Income score	2.20 (1.40)	2.24 (1.47)	2.15 (1.32)	-0.57	.57
	n (%)				
Education					
Grade school ^b	60 (23.9)	34 (31.5)	26 (18.2)	13.39	.01
8 th grade or less	52 (20.7)	19 (17.6)	33 (23.1)		
Some high school	62 (24.7)	29 (26.9)	33 (23.1)		
High school graduate	45 (17.9)	20 (18.5)	25 (17.5)		
Some college or higher ^b	32 (12.8)	6 (5.6)	26 (18.2)		
Currently employed					
Yes	202 (69.4)	86 (61.9)	116 (76.3)	7.14	<.01
No	89 (30.6)	53 (38.1)	36 (23.7)		
Marital status					
Single/never married ^b	42 (14.2)	27 (18.9)	15 (9.8)	21.22	<.0001
Married ^b	186 (62.8)	74 (51.8)	112 (73.2)		
Widowed ^b	23 (7.8)	19 (13.3)	4 (2.6)		
Separated	16 (5.4)	7 (4.9)	9 (5.9)		
Divorced	29 (9.8)	16 (11.2)	13 (8.5)		
Religion					
Buddhism ^b	198 (67.4)	126 (88.7)	72 (47.4)	64.5	<.0001
Christianity ^b	73 (24.8)	10 (7.0)	63 (41.5)		
Other	12 (4.1)	6 (4.2)	6 (4.0)		
No affiliation	11 (3.7)	0 (0.0)	11 (7.2)		
Importance of religion in life					
Extremely important ^b	82 (28.0)	45 (31.5)	37 (24.7)	13.70	<.01
Very important ^b	102 (34.8)	55 (38.5)	47 (31.3)		
Somewhat important	87 (29.7)	40 (28.0)	47 (31.3)		
Somewhat important	18 (6.1)	2 (1.4)	16 (10.7)		
Not at all important ^b	4 (1.4)	1 (0.7)	3 (2.0)		
Preferred language					
Vietnamese	148 (50.7)	0 (0.0)	148 (98.7)	287.20	<.0001
Khmer	139 (47.6)	139 (97.9)	0 (0.0)		
English	5 (1.7)	3 (2.1)	2 (1.3)		
Time spent in transition camp					
Yes	206 (73.3)	132 (97.1)	74 (51.0)	75.97	<.0001
No	75 (26.7)	4 (2.9)	71 (49.0)		
Refugee status upon arrival in U.S.					
Legal refugee	261 (92.88)	125 (94.0)	136 (91.9)	0.46	.50
Registered alien	20 (7.1)	8 (6.0)	12 (8.1)		

Citizenship status					
Registered alien ^b	118 (41.8)	74 (55.2)	44 (29.7)	22.05	<.0001
Citizen ^b	162 (57.5)	58 (43.3)	104 (70.3)		
Other	2 (0.7)	2 (1.5)	0 (0.0)		

^aTable includes all available data. Imputation not conducted for data presented in this table.

^bPost-hoc pairwise chi-squared test indicated that differences between Cambodian and Vietnamese were statistically significant ($p < .01$)

Average AUDIT-C scores at baseline for the overall sample were 0.87 (SD=0.12) and 0.12 (SD=0.58), respectively for Cambodian and Vietnamese women. The difference was statistically significant ($t = -5.41, p < .0001$). Cambodians reported higher average AUDIT-C scores at all subsequent waves ($p < .01$ for each time point) and alcohol use did not vary substantially over time. A large majority of the sample (73.2%) reported no alcohol use in the past month at any of the five waves.

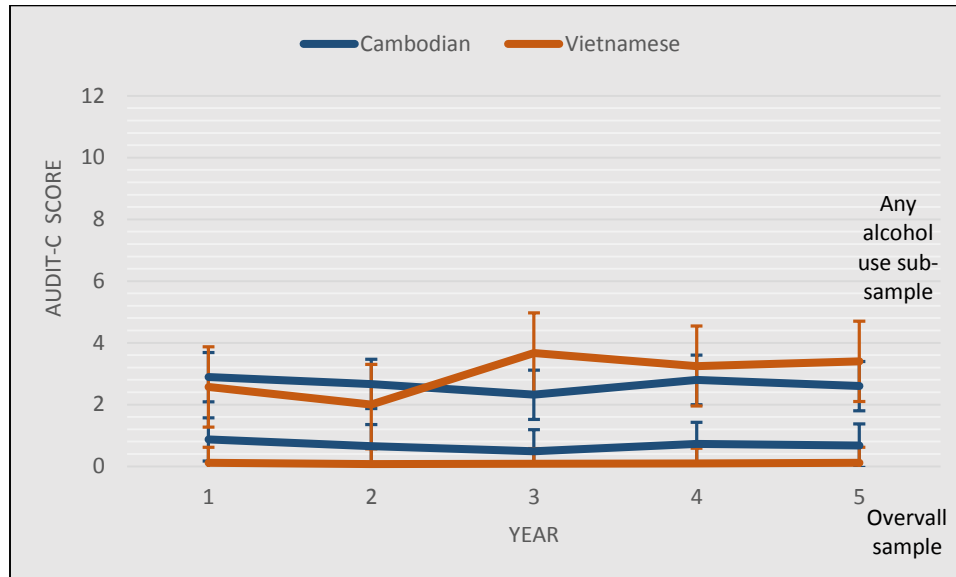
Among those who did report at least some alcohol use ($n = 81, 26.8\%$ of overall sample), the average AUDIT-C scores at baseline were 2.84 (SD=1.37) and 2.57 (SD=0.98), respectively for Cambodian and Vietnamese women. The difference was not statistically significant ($t = -0.50, p = .62$). At wave 2, Cambodian women who had used alcohol also had a higher average AUDIT-C score compared to Vietnamese women who had used alcohol, however, Vietnamese had higher scores at waves 3-5. None of the differences by nationality were statistically significant among the sub-sample. Among the sub-sample, 39.5% ($n = 39$) had an AUDIT-C score for at least one of the five waves that met or exceeded the recommended cut-off value of 3 for potentially hazardous drinking behavior. The scores for the full sample and among the sub-sample of only those who reported any use are graphically displayed in Figure 5.1. Characteristics stratified by alcohol use are presented in Appendix B.

There were no significant differences between Cambodian and Vietnamese women in biculturalism or traditionalism at any of the five waves. Degree of assimilation

differed significantly, however, between the two groups at all five waves, with Cambodian women more likely to report a high degree of assimilation compared to Vietnamese women. None of the three acculturation variables differed over time.

To test the direct effects of each acculturation variable on alcohol use, we estimated our linear mixed effects regression model with the full sample ($n=302$) (Table 5.3). In addition to the three categorized acculturation variables and a variable for time, we included the following covariates in the final model to control for potentially confounding effects: baseline age, nationality, traumatic event history, income, religion, and religiosity. Nationality was significantly associated with alcohol use, indicating more alcohol use among Cambodian compared to Vietnamese women ($\beta=0.41$, $se=0.12$; $p<.01$). Time was not significant ($\beta=-0.02$, $se=0.02$; $p=.30$), suggesting that alcohol use was relatively consistent over the course of the study. None of the three acculturation dimensions were statistically significantly associated with alcohol use and so we did not proceed with investigating interactive effects of acculturation, nationality, and time.

Figure 5.1 Alcohol use over time by nationality in overall sample (n=302) and among those who used alcohol (n=81)



We estimated the same linear mixed effects model among only those who reported alcohol use during the course of the study (Table 5.3). Among this sub-sample (n=81), there was a significant association between biculturalism and alcohol use, with those reporting a high degree of biculturalism having a lower average AUDIT-C score than those reporting a low degree of biculturalism ($\beta = -1.33, se = 0.53, p = .01$). Similarly, those reporting a high degree of traditional cultural identification had lower average AUDIT-C scores than those reporting a low degree of traditional cultural identification ($\beta = -0.94, se = 0.44, p = .03$). Assimilation was not associated with alcohol use among the sub-sample.

In a second step with this sub-sample, we added interaction terms to the model: one for each of the acculturation variables multiplied by time, one for each of the acculturation variables multiplied by nationality, and an interaction of nationality and time. None of these interaction terms were statistically significant.

Table 5.3 Linear mixed effects model results for alcohol use score

	Overall sample (n=302) ^a			Any alcohol use (n=81) ^{a,b}		
	β	<i>se</i>	<i>p</i>	β	<i>se</i>	<i>p</i>
Base Model ^c	$X^2(19)=74.08, p<.0001$			$X^2(19)=71.41, p<.0001$		
Biculturalism (REF=Low)						
Medium	0.06	0.07	.44	-0.21	.22	.33
High	-0.12	0.10	.22	-1.33	.53	.01
Traditionalism (REF=Low)						
Medium	-0.13	0.14	.34	-0.71	.36	.05
High	-0.07	0.15	.64	-0.94	.44	.03
Assimilation (REF=Low)						
Medium	0.04	0.11	.71	0.33	0.36	.37
High	-0.01	0.13	.96	-0.51	0.32	.11
Time	-0.02	0.02	.30	0.02	0.06	.74
Nationality (REF=Vietnamese)	0.41	0.12	<.01	0.05	0.37	.89
Base Model + two-way interactions ^{c,d}	X^2 test for addition of interaction terms: $X^2(7)=21.42, p<.01$					
Biculturalism X time				0.08	0.20	.68
Biculturalism X nationality				-0.44	0.49	.37
Traditionalism X time				-0.03	0.23	.91
Traditionalism X nationality				0.10	0.58	.87
Assimilation X time				-0.02	0.13	.87
Assimilation X nationality				-0.43	0.40	.29
Nationality X time				-0.28	0.14	.05
^a Data from all participants used in regression models following mean imputation						
^b Any alcohol use sub-sample defined as an AUDIT-C score of 1 or higher reported at any of the five waves						
^c Models also adjusted for: baseline age, marital status, traumatic event history, income, religion, and religiosity						
^d Interaction terms not entered into the model for the overall sample due to non-statistical significance of the acculturation main effects						

5.5 Discussion

This study investigated acculturation and its association with alcohol use among Vietnamese and Cambodian women in Washington State. In general, levels of alcohol use were very low among this sample similar to previous surveys that found Asian American adults drink at lower amounts than the national average (Substance Abuse and Mental Health Services Administration, 2013). A recent study found a so-called “refugee paradox”-- that refugee populations living in the U.S. actually had lower alcohol use compared with immigrants who were non-refugees and those who were native-born (Salas-Wright & Vaughn, 2014). We observed a similar effect with Vietnamese and Cambodian women in our study.

Notably, among those who did report any alcohol use, average AUDIT-C scores for both groups did begin to approach (although did not reach) the recommended cut-off for hazardous drinking behavior (3 or higher) and almost 40% of alcohol consumers did achieve this threshold. In several other cultures with low prevalence of alcohol use, a pattern of “all or nothing” drinking has been observed in which a small number of people who consume alcohol do so in high volume (World Health Organization, 2011). Therefore, despite the fact that alcohol use may be low overall among this sample of Vietnamese and Cambodian women, clinicians should be mindful that alcohol use among those who do drink may begin to approach hazardous levels.

With regard to differences between the two nationalities, our adjusted mixed effects model and our independent samples *t* tests indicated that Cambodian women drank at levels higher than Vietnamese women and this finding persisted throughout all time points in the study. A recent study by Park and colleagues (2014) similarly found that among three Asian immigrant groups including Vietnamese, Filipino, and Chinese, the Vietnamese reported the lowest amounts of alcohol use. The difference in alcohol use by specific Asian nationality is also in line with several other previous studies (Iwamoto et al., 2010; Iwamoto et al., 2012; Le et al., 2009; Lum, Corliss, Mays, Cochran, & Lui, 2009; Nishimura et al., 2005; Park, Shibusawa, Yoon, & Son, 2010; Thai, Connell, & Tebes, 2010). Hamby (2015) recently argued against collapsing disparate ethnic groups into singular categories (e.g., into an “Asian” group). Our result similarly underscores the need for future research measuring prevalence of alcohol use among Asians to disaggregate specific subgroups. Additionally, clinicians should be cognizant of the

possibility that some Asian groups might have a higher risk for alcohol use problems than others.

We examined acculturation and its potential link to drinking. We found that Cambodian women reported higher levels of assimilation as compared to Vietnamese women. This finding is consistent with previous literature that found differences between nationalities with regard to acculturation (Phinney, Ong, & Madden, 2000; Rumbaut, 1996). Additional qualitative investigation into why there may be differences in acculturation across nationalities is warranted to help explain this finding.

We found no significant change in alcohol use or acculturation over time in either nationality. It is possible that the time period of our study was too short to observe a meaningful change. A more likely explanation, however, is that by baseline of our study, this was a population with an average age of 42 and which had been living in the U.S. for an average of 13 years. Consequently, acculturation and alcohol use patterns were likely more static than they might be among a younger sample that had immigrated more recently. From this perspective, it is therefore not so surprising that we did not observe a change over time in acculturation or alcohol use.

We did not find an association between acculturation and alcohol use in the overall sample as previous studies have (Liu & Iwamoto, 2007; Park et al., 2014; Wong et al., 2007; Yi & Daniel, 2001). This could be due to such a large proportion of our sample reporting no alcohol use whatsoever during the course of the study. We did, however, find significant associations between acculturation and drinking among those who reported any alcohol use (AUDIT-C score of 1 or higher at any of the five waves). This finding suggests that acculturation may impact the alcohol use pattern with regard to

frequency, quantity, or binge drinking behavior among those who drink. Future studies should replicate this finding by conducting analyses with samples including drinkers and non-drinkers together and drinkers alone. This may be especially important among populations such as Vietnamese and Cambodians where prevalence of alcohol use is low.

Previous studies have found that Asian immigrants who were more “acculturated” with U.S. culture were likely to drink more than those who were less acculturated (Liu & Iwamoto, 2007; Park et al., 2014; Wong et al., 2007; Yi & Daniel, 2001). Those studies implied that the adoption of U.S. culture was the aspect of acculturation that increased the risk for alcohol use. Most previous acculturation studies, however, employed single-item proxy measures of acculturation such as time since immigration and English language proficiency and unidimensional scales that assume a continuum in which individuals are more or less acculturated (Park et al., 2014; Wong et al., 2007). They also assume that an increase in U.S. cultural identification is concurrent with a loss of traditional cultural identification (Liu & Iwamoto, 2007; Yi & Daniel, 2001). Unidimensional measures do not allow for a distinction between the two (Schwartz et al., 2010).

Among the sub-sample of alcohol drinkers in our study, using a multidimensional acculturation measure we found that a high degree of traditional cultural identification and a high degree of biculturalism were associated with lower levels of alcohol use but that there was no association between assimilation and drinking. Our study is similar to previous ones that have found an association between acculturation and alcohol use, but we differ in the interpretation of that finding. Our results suggest that it is not the identification with U.S. culture that increases alcohol use levels, but rather the loss of traditional cultural identity. The finding that a high degree of biculturalism was also

associated with lower alcohol use levels similarly indicates that there is no inherent risk in an identification or integration with U.S. culture. The divergent findings across the acculturation dimensions provide additional support for treating acculturation as a multidimensional construct.

Finally, we conducted an exploratory analysis to assess whether the association between acculturation and alcohol use differed by nationality and over time. We found no statistically significant difference in the relationship by nationality, suggesting that the acculturation-alcohol use association works similarly among both Vietnamese and Cambodians.

5.5.1 Limitations

This study has several limitations to consider. As noted in previous publications with CCF data, although participants were selected randomly from school district records, this is a regional sample of Vietnamese and Cambodian families living in Washington State. The generalizability to populations elsewhere in the U.S may be limited (Choi et al., 2008). Data are self-report and subject to misinterpretation of survey items, interview bias, and underreporting of alcohol use. To mollify a potential interviewer bias, participants were able to complete questions on alcohol use privately without the interviewer present.

We were limited in our ability to measure a true “healthy migrant effect” or witness change over time in alcohol use or acculturation because our study sample had been living in the U.S. for an average of 13 years at baseline of our study. Future research should attempt to measure alcohol use and acculturation longitudinally with a more

natural baseline assessment-- beginning with arrival in the U.S. among immigrant groups, if possible.

This study was unique in its ability to measure three of the four acculturation strategies described by Berry (1997): biculturalism, assimilation, and traditionalism. We were unable to measure the marginalized category, however, which refers to individuals who do not feel an attachment to either a traditional or new culture (Berry, 1997). The items in the Suinn-Lew scale did not permit the ability to create a scale that measures the degree to which individuals feel alienated from *both* cultures. The items forced the respondent to choose a Vietnamese/ Cambodian preference, U.S. preference, or equal amounts of both, but no option for neither. Future research should include ways to measure this important dimension of acculturation, as its association with alcohol use is currently unknown.

Our study was one of the first to conduct an exploratory analysis of the interactions between nationality, acculturation, and time. We were limited, however, in our ability to evaluate the statistical significance of these relationships due to our sample size. Future studies should continue to investigate these relationships with larger samples.

Finally, we were limited in our ability to make any conclusions about the association between acculturation and alcohol abuse, only alcohol use, due to the low levels of drinking in our study sample. Future studies with populations that have greater prevalence of alcohol use are warranted.

5.5.2 Conclusions

Our study found that alcohol use patterns vary significantly between Cambodian and Vietnamese immigrant women in the U.S. Given the number of studies that have now

shown differences in alcohol use across Asian subgroups, clinicians should be cognizant that some Asian populations might be at a higher risk for alcohol use problems than others. Researchers investigating health outcomes among Asian Americans should continue to conduct analyses stratified by subgroup or test for differences statistically between groups in analysis models, given the mounting evidence that there are important differences across nationalities. Due to low overall prevalence of alcohol use among these populations, oversampling of Asian subgroups may be indicated in order to have the sample size required for moderation analyses.

We also found that although alcohol use and acculturation both significantly differed between Cambodian and Vietnamese women, the relationship between acculturation and alcohol use did not vary significantly between the groups. The findings suggest that the dimensions of traditionalism and biculturalism, but not assimilation, are important contributors to drinking behavior among these immigrant populations, and that they act in a similar way for both Cambodian and Vietnamese women. The findings should be considered preliminary given our sample size and they warrant replication in future studies that use multidimensional acculturation scales. However, it remains important for clinicians to bear in mind the importance of culture and cultural identification with regard to alcohol use for all Asian American populations.

The current body of literature indicates that acculturation is important in a number of health outcomes, including alcohol use, however, it is not entirely clear how the mechanisms in these relationships work. Future research should employ structural equation modeling techniques to help elucidate potential mediators of these relationships. Studies should also move away from single-item proxy measures of acculturation to

validated multidimensional scales, with measures of traditionalism, biculturalism, assimilation, and marginalization. Consistency of measurement will also more readily allow for comparison of findings across studies. Finally, given the complex nature of acculturation, future studies may benefit from a mixed-methods design, including qualitative components.

5.6 References

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Chapter 6. The impact of intergenerational cultural dissonance on alcohol use among Vietnamese and Cambodian adolescents from immigrant families in the United States

6.1 Abstract

Background: Rates of alcohol use may be increasing among Asian American adolescents. Among youth from Asian immigrant families, intergenerational cultural dissonance (ICD), a difference in acculturation between children and their caregivers, is associated with a number of adverse child outcomes. This study investigates the longitudinal association of ICD and alcohol use among youth from immigrant Vietnamese and Cambodian families in the U.S.

Methods: Two annual waves of data, wave 4 (baseline for this study) and wave 5 (follow-up) were obtained from the Cross Cultural Families project (CCF), a 5-year longitudinal study of 327 Vietnamese and Cambodian immigrant families in Washington State. The Asian American Family Conflicts Scale was used to measure ICD. Adolescent alcohol use was measured as any drinking in the past 30 days (dichotomized). A logistic regression model was estimated with the outcome, alcohol use, measured at the follow-up visit and all predictors, including ICD, measured at baseline to establish temporality of the relationships. Sex, nationality, nativity, and acculturation were tested as potential effect modifiers of the ICD-alcohol use association. A separate model estimated change in ICD from baseline to follow-up as the primary predictor of alcohol use.

Results: A small proportion of the adolescents (age range 13-18) reported alcohol use (9.2% at baseline and 15.9% at follow-up). The mean ICD score was 2.84 and there was no significant variation in scores between baseline and follow-up. ICD was associated

with increased odds of alcohol use one year later (OR: 1.57; 95% CI: 1.03; 2.41; $p=.04$). None of the interaction terms were statistically significant. Change in ICD from baseline to follow-up did not predict alcohol use (OR=1.23; 95% CI: 0.61 to 2.51; $p=.56$).

Conclusions: ICD is a significant predictor of alcohol use among Vietnamese and Cambodian adolescents. Interventions targeted toward reducing ICD through enhancing parent-child communication and teaching bicultural competence skills may help prevent alcohol and substance use problems among youth from immigrant families. Future studies should attempt to tease apart the complex ICD-child outcome pathways by measuring and testing for mediators and moderators.

6.2 Introduction

Alcohol is the most widely used substance among adolescents in the United States and is the cause of over 4,000 deaths annually in the country (Centers for Disease Control and Prevention, 2014). Initiation of drinking in adolescence is also associated with an increased risk for alcohol use problems in adulthood (Grant & Dawson, 1997; Hingson & Zha, 2009). Despite a great deal of public health attention to underage drinking in general, alcohol use among Asian adolescents have been under-studied (Lim, Stormshak, & Falkenstein, 2011; Wang, Kviz, & Miller, 2012). This represents a gap in the scientific literature for a number of reasons. First, Asians are the fastest growing racial population in the country, by an estimated 43% between 2000 and 2010, from 10.2 to 14.7 million (U.S. Census Bureau, 2010), and their health should be considered a priority. Second, although Asian youth have a lower prevalence of alcohol use than other groups (15.2% of Asian youth aged 12-20 reported past 30-day alcohol use compared to 17.8% for Blacks, 20.6% for Hispanics, and 25.8% for Whites; Substance Abuse and Mental Health

Services Administration, 2014), some evidence has suggested that rates of alcohol use disorders are increasing among specific Asian populations in the U.S., particularly among young adults (Grant et al., 2004; Iwamoto, Takamatsu, & Castellanos, 2012). Third, as with adolescents from other racial groups, Asian Americans experience a range of adverse correlates associated with drinking including co-occurring mental health problems such as depression, anxiety, post-traumatic stress disorder (PTSD), suicidal ideation, and comorbid substance use (Cheng, Lee, & Iwamoto, 2012) as well as violent behaviors, delinquency, motor vehicle injury, and school drop-out (Hill, White, Chung, Hawkins, & Catalano, 2000; Swadi, 1999). Therefore, studying the alcohol use patterns among Asian youth in the U.S. is critical for identifying prevention efforts.

In those studies that do address alcohol use among Asians, most characterize them as a singular group and some even combine them with Pacific Islanders. This is imprecise and problematic because health outcomes, risk factors for those outcomes, historical context, religion and drinking behaviors can all vary across Asian nationalities. For example, it is commonly thought that Asian American students have better school-based outcomes compared to the general population and, although this may be true in aggregate (Suinn, 2010), a more focused analysis on Asian American nationalities has revealed disparities among specific nationalities: Cambodian adolescents tend to have more difficulty academically than other groups, including the Vietnamese (Goldberg, 1999).

Southeast Asian immigrants (including Vietnamese and Cambodian) are also more likely to be impoverished compared to other Asian groups, resulting in adolescents from these families attending low resource public schools and experiencing many of the correlates associated with low socioeconomic status (Lim et al., 2011; Rumbaut, 2000).

Similarly, despite the fact that many health indicators among Asian American populations tend to be better on average than the general population, disparities often become apparent upon analysis of specific Asian American sub-groups (Koch-Weser, Liang, & Grigg-Saito, 2006). In particular, significant disparities in health indicators have been cited among Cambodian-American populations (Koch-Weser et al., 2006).

In a review of Asian American adolescent alcohol use, Wang et al., (2012) argued that it was appropriate to disaggregate specific Asian nationalities or test for differences between them when studying alcohol use and its risk factors among Asian Americans. This was echoed in a recent editorial by Hamby (2015). Pre-migration experiences, for example, such as potentially traumatic events, may differ significantly between groups, and these experiences have been associated with alcohol use and mental health problems among caregivers, both of which may in turn increase the risk for child maltreatment and neglect (Chang, Rhee, & Berthold, 2008). In summary, examining adolescent alcohol use among Asians with a focus on nationality would yield important and actionable information that is obscured without subgroup analyses.

Intergenerational cultural dissonance (ICD) is a potential risk factor for alcohol use among Asian adolescents with immigrant parents, and the level of ICD may vary by nationality (Choi, He, & Harachi, 2008; Yu-Wen & Chao, 1996). Also referred to in the literature as the *acculturation gap*, ICD occurs when there are differential acculturation experiences between immigrant caregivers and their children (Portes & Rumbaut, 1996). In this dissertation, we define acculturation as “the multidimensional process of the adoption of U.S. cultural norms, values, and lifestyles” (Alegria, 2009; Lara, Gamboa, Kahramanian, Morales, & Bautista, 2005; Wilson-Portuondo, 2003). According to Berry

(1997), there are four potential acculturation strategies adopted by immigrants: 1) *assimilation*, in which U.S. cultural norms are readily adopted at the expense of traditional culture; 2) *traditionalism*, in which most aspects of traditional culture are adhered to; 3) *biculturalism*, in which traditional culture is retained while simultaneously adopting U.S. cultural norms and practices; and 4) *marginalization*, in which neither culture is embraced and an individual feels alienated from both.

ICD typically occurs when children from immigrant families begin to adopt and embrace Western culture and values more readily than their caregivers. In other words, the acculturation strategies between the adolescent and caregiver differ in substantial ways. This acculturation difference results in a cultural “clash” between generations (Wang et al., 2012) that serves to exacerbate the typical generational divide and the usual conflict associated with it (Choi et al., 2008). Among Asian immigrant families, this clash is often related to the adolescent having more “individualistic” tendencies compared to the “collectivist” traditions valued by their caregivers (Zhou & Bankston, 1998). Higher levels of ICD lead to increased parent-child miscommunication, misunderstanding, and conflict and has been associated with subsequent negative child outcomes including externalizing symptoms, behavioral and school-based problems, depression, and delinquency (Choi et al., 2008; Chung, 2001; Hwang, 2006; Kibria, 1993; Lee et al., 2005; Kim, Chen, Li, Huang, & Moon, 2009; Kim, Chen, Wang, Shen, & Orozco-Lapray, 2013; Marsiglia et al., 2009; Unger, Ritt-Olson, Wagner, Soto, & Baezconde-Garbanati, 2009).

The level of ICD may vary across several characteristics. Kim and colleagues (2013) found that the negative effects of ICD may be most pronounced for youth during

the adolescent years, a time when peer group conformity is perceived as most important. Cultural conflict is particularly high among Vietnamese and Cambodian families compared with those from other racial backgrounds (Phinney, Ong, & Madden, 2000; Rumbaut, 1996). Girls have reported higher levels of ICD compared to boys (Chung, 2001; Portes & Rumbaut, 2001; Rumbaut, 1996). Literature has also suggested that ICD may be more evident among U.S.-born youth compared to those who migrated to the U.S. with their parents (Chung, 2001; Portes & Rumbaut, 2001). Acculturation strategies as described by Berry (1997) (assimilation, traditionalism, biculturalism, marginalization) may also impact ICD. Adolescents who have a greater degree of assimilation with U.S. culture may experience higher levels of ICD with their caregivers than adolescents with a bicultural or traditional acculturation strategy (Portes & Rumbaut, 1996).

Acculturation has been associated with substance and alcohol use among Asian American adolescents (Cook, Hofstetter, Kang, Hovell, & Irvin, 2009; Hahm, Lahiff, & Guterman, 2004; Hendershot, MacPherson, Myers, Carr, & Wall, 2005; Lim et al., 2011). Specifically, assimilation has been found to be a risk factor (Cook et al., 2009; Hahm et al., 2004; Hendershot et al., 2005), and traditionalism has been found to be protective for alcohol use (Lim et al., 2011). Due to a lack of multidimensional acculturation measures in alcohol use studies, the effect of Berry's other acculturation strategies (biculturalism and marginalization) remains unknown.

The impact of ICD on alcohol use among Asian youth is also unclear. Studies conducted among Hispanic populations have found a significant association between ICD and increased substance use (Felix-Ortiz, Fernandez, & Newcomb, 1998; Martinez, 2006; Unger et al., 2009). In a longitudinal study of Hispanic adolescents, Unger et al. (2009)

also found that ICD predicted increased substance use at a one-year follow-up and that a widening parent-child acculturation gap between the two time points was also associated with an increase in substance use. No previous studies have analyzed this relationship among Asian adolescents.

Many previous studies of acculturation and alcohol use among adolescents have been limited by analyses that do not disaggregate Asian nationalities, a lack of ICD measures, unidimensional measures of acculturation, a lack of moderation analyses, and cross-sectional designs. The lack of prospective studies is particularly challenging given the dynamic nature of adolescence, and the likelihood that acculturation, ICD, and alcohol consumption may all vary considerably over this period (Unger et al., 2009).

To help address some of these gaps in the literature, the present study aims to: 1) examine alcohol use prevalence among Vietnamese and Cambodian adolescents from immigrant families; 2) measure the level of ICD between caregivers and their adolescent children and whether ICD predicts alcohol use one year later; and 3) if an ICD-alcohol use association exists, explore whether it varies by sex, nationality, nativity of the adolescent, or adolescent acculturation strategy.

6.3 Methods

6.3.1 Participants and Procedure

The Cross-Cultural Families Project was a five year longitudinal study that included 327 Cambodian and Vietnamese adolescents living in Washington State between 2001 and 2005. Participants were recruited via a stratified random sampling method from school district lists that aimed to enroll approximately equal numbers of Vietnamese and Cambodian families. Study participants included an adolescent in the

family who was in 5th, 6th, or 7th grade upon enrollment and a caregiver of the child. There were five annual waves of data collection from both adolescent and caregiver (Tajima & Harachi, 2010). Interviews for the adolescents and caregivers were conducted separately. They were facilitated in-person by an interviewer, except for sensitive measures, which the adolescents were permitted to self-complete (e.g., mental health and substance/alcohol use). All measures included in the final CCF study instrument were translated into Khmer and Vietnamese. The measures were then back-translated to ensure accuracy of the translation (Choi, He, & Harachi, 2008).

Data regarding ICD were collected starting in wave 4, so the current investigation focuses exclusively on data from waves 4 and 5 of the original study, hereafter referred to in this study as baseline and follow-up, respectively. Data are primarily utilized from the adolescent interviews with the exception of caregiver acculturation (see Measures below). The original data collection for CCF was approved by the University of Washington Human Subjects Committee. The current study was designated with exempt status by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board.

6.3.2 Measures

Outcome

Adolescent alcohol use was measured in CCF by one question: "in the past 30 days, on how many occasions have you had beer, wine, or liquor?" Response options included: 1) never; 2) 1-2 times; 3) 3-5 times; 4) 6-9 times and 5) 10 or more times. For the current investigation the variable was dichotomized into any alcohol use in the past 30 days (yes/no) due to right skewed data. Although dichotomizing the variable does not

permit the ability to measure severity of alcohol use, it does allow for the ability to include potentially confounding covariates in the regression models and test for interactions while retaining adequate statistical power (Hahm et al., 2004).

Predictor

Intergenerational cultural dissonance (ICD) was measured with the Asian American Family Conflicts Scale (Lee, Choe, Kim, & Ngo, 2000). The 10 items were prefaced by the question "How likely is this type of situation to occur in your family?" and was followed by parent-child situations relevant to the acculturation gap (see Table 6.1). Response options included: 1) never; 2) seldom; 3) sometimes; 4) often; and 5) almost always. From these 10 items, an average ICD score was calculated for each participant with a possible range of 1-5. Higher scores reflected a greater level of parent-child ICD. Internal consistency of the ICD scale was very good at baseline ($\alpha=.86$) and follow-up ($\alpha=.87$).

Table 6.1 Items in Asian American Family Conflicts Scale used to measure ICD

How likely is this type of situation to occur in your family...
1) Your parents tell you what to do with your life but you want to make your own decisions
2) Your parents tell you that a social life is not important at this age, but you think it is
3) You have done well in school, but your parent's academic expectations exceed your performance
4) Your parents want you to sacrifice personal interests for the sake of the family but you feel this is unfair
5) Your parents always compare you to others but you want them to accept you for being yourself
6) Your parents argue that they show you love by housing, feeding, and educating, but you wish they would show more physical and verbal signs of affection
7) Your parents don't want to bring shame upon the family, but you feel your parents are too concerned with saving face
8) Your parents expect you to behave as a typical Asian male or female but you feel your parents are being too traditional
9) You want to state your opinion but your parents consider it disrespectful to talk back
10) Your parents demand that you always show respect for elders, but you believe in showing respect only if they deserve it

Item response options: 1) Never; 2) Seldom; 3) Sometimes; 4) Often; 5) Almost always

Covariates

Demographic characteristics included sex, age, nationality (Vietnamese/Cambodian), nativity (as measured by place of birth—in the U.S. or outside), and number of years spent in the U.S.

Adolescent acculturation was measured by assigning adolescents to one of the four acculturation strategies described by Berry (1997): assimilation, traditionalism, biculturalism, or marginalization.

This was accomplished through a series of scale development procedures in which we developed two continuous measures of adolescent acculturation by drawing on items from relevant scales including: the General Ethnicity Questionnaire (Tsai, Ying, & Lee, 2000), the Multigroup Ethnic Identity Measure (Phinney, 1992), the Youth Adaptation and Growth Questionnaire (Portes & Rumbaut, 2001), and the Acculturation Scale for Vietnamese Adolescents (Nguyen & Eye, 2002). A total of 18 items from these measures comprised a traditional cultural identification subscale and 16 items comprised a U.S. cultural identification subscale (see Table 6.2). Response options for all items were on a Likert-type scale that ranged from strongly disagree (1) to strongly agree (4). Internal consistency for the traditional scale was very good at wave 4 ($\alpha=.84$) and wave 5 ($\alpha=.83$) and adequate for the U.S. scale ($\alpha=.75$ at wave 4 and $\alpha=.74$ at wave 5)

Table 6.2 Acculturation scales for traditional cultural identification and U.S. cultural identification

Traditional cultural identification scale	U.S. cultural identification scale
1) I have spent time trying to find out more about my own ethnic group, such as its history, traditions, and customs	1) It is OK to question parents' authority, judgment, or decisions
2) I am active in organizations or social groups that include mostly members of my own ethnic group	2) Family matters should be handled democratically, where kids can have a say
3) I have a clear sense of my ethnic background and what it means to me	3) When a boy/girl reaches 16, it is alright for him/her to date
4) I am happy that I am a member of the group I belong to	4) Girls over 18 should be allowed to move away from home and go to college or take a job
5) I have a strong sense of belonging to my own ethnic group	5) I like meeting and getting to know people from ethnic groups other than my own
6) I have a lot of pride in my ethnic group and its accomplishments	6) I often spend time with people from ethnic groups other than my own
7) I feel a strong attachment towards my own ethnic group	7) I am involved in activities with people from other ethnic groups
8) I participate in cultural practices of my own ethnic group such as special food, music, or customs	8) I enjoy being around people from ethnic groups other than my own
9) I feel good about my cultural background	9) I don't try to become friends with people from other ethnic groups (reverse coded)
10) I was raised in a way that was Vietnamese/Cambodian	10) I was raised in a way that was American
11) Vietnamese/Cambodian culture has a positive impact on my life	11) American culture has a positive impact on my life
12) I am familiar with Vietnamese/Cambodian cultural practices and customs	12) I am familiar with American cultural practices and customs
13) I relate to my girlfriend/boyfriend in a way that is Vietnamese/Cambodian	13) I admire people that are American
14) I admire people that are Vietnamese/Cambodian	14) The people I date are American
15) The people I date are Vietnamese/Cambodian	15) I am embarrassed/ashamed of American culture (reverse coded)
16) I want to be accepted by Vietnamese/Cambodians	16) I want to be accepted by Americans
17) I am ashamed/embarrassed of Vietnamese culture (reverse coded)	
18) I really have not spent much time trying to learn about the culture and history of my ethnic group (reverse coded)	

Response options: 1) Strongly disagree; 2) Disagree; 3) Agree; 4) Strongly Agree

Average scores with a possible range of 1-4 were calculated for each of these two subscales of acculturation. Higher scores on each subscale were associated with greater degree of identification with that culture. The use of both subscales permits a

multidimensional perspective of acculturation and the ability to describe an adolescent's acculturation strategy based on the four acculturation strategy types described in the literature by Berry (1997). Following a similar methodology as Lim et al. (2011), participants with a score of 3 or higher on both subscales were categorized as *bicultural*, those with a score of 3 or higher on the traditional cultural identification sub-scale and lower than a 3 on the U.S. sub-scale were considered *traditional*, those with a score of 3 or higher on the U.S. sub-scale and lower than 3 on the traditional scale were considered *assimilated*, and finally those with scores lower than 3 on both sub-scales were considered *marginalized*.

Caregiver acculturation was measured through eight items from the Suinn-Lew Asian Self-Identity Acculturation Scale (Suinn, Ahuna, & Khoo, 1992) and modified using methods described in Chapters 4 and 5 (Magafia et al., 1996).

6.3.3 Statistical analysis

Means and proportions were calculated to describe demographic characteristics. Independent samples *t* tests and chi-squared tests were used to evaluate differences in characteristics between nationalities (Vietnamese and Cambodian). Paired *t* tests and Pearson's correlation were used to evaluate change in ICD and acculturation from baseline to follow-up. Significance tests were two-tailed and *p* values were considered statistically significant at 0.05.

A multiple logistic regression model was estimated to assess the longitudinal association between ICD and alcohol use. Covariates that had a statistically significant relationship with ICD and alcohol use and/or were thought to have a strong theoretical

association with both were included in the model. ICD and all covariates were measured at baseline and alcohol use was measured at follow-up to establish temporality.

Following estimation of the logistic regression model, we investigated four potential modifiers of the ICD-alcohol use relationship by separately inserting interaction terms into the model (ICD X sex, ICD X nationality, ICD X acculturation, and ICD X nativity). These interaction terms were evaluated at a significance level of .0125 to account for the multiple tests.

Finally, replicating an analysis by Unger et al. (2009) among Hispanic adolescents, we explored whether change in ICD from baseline to follow-up was associated with alcohol use. We created a variable coded as 0 if ICD remained the same or decreased over the course of one year and 1 if ICD increased over the year between baseline and follow-up. This variable was added into the original model.

Although loss to follow-up was minimal in the CCF study (<5%), in order to prevent a potential emigrative selection bias resulting from study drop-out and to account for item-level missing data, multiple imputation procedures were conducted before estimating the regression models. We multiply imputed 10 datasets using chained equations (Azur, Stuart, Frangakis, & Leaf, 2011; Royston, P & White, I, 2011; van Buuren, Boshuizen, & Knook, 1999). Regression models were estimated by combining coefficients and standard errors from the 10 datasets following Rubin's rules for missing data (Rubin, 1987). Analyses were conducted using Stata, Version 13 (StataCorp, 2013).

6.4 Results

6.4.1 Characteristics of study sample

The sample consisted of 164 Cambodian and 163 Vietnamese adolescents, 51% of whom were female and with an average age of 16 (Table 6.3). There were no differences between the two nationalities with regard to sex or age. More than a third of the sample (39.7%) had been born outside the U.S., a proportion attributable primarily to Vietnamese who were much more likely than Cambodian adolescents to have immigrated to the U.S. with their caregivers rather than being born in the U.S. ($p<.0001$). The average ICD score was 2.84 (SD: 0.81), with no significant difference between the nationalities ($p=.13$). Acculturation differed between the groups, however ($p<.01$). Post-hoc chi-squared tests suggested that Cambodian adolescents were more likely to have a bicultural acculturation strategy and Vietnamese adolescents were more likely to report traditionalism ($p<.01$).

Table 6.3 Baseline characteristics of study sample (n=327)

	Total Sample (n=327) ^a	Cambodian (n=164) ^a	Vietnamese (n=163) ^a	Independent samples <i>t</i> -Test/ χ^2	<i>p</i>
	mean (SD)				
Age ^b	16.20 (1.13)	16.20 (1.13)	16.20 (1.14)	-0.05	.96
Number of years in the U.S. ^b	14.63 (2.72)	15.79 (2.09)	13.46 (2.78)	-8.18	<.0001
Intergenerational cultural dissonance	2.84 (0.81)	2.91 (0.79)	2.77 (0.83)	-1.51	.13
	n (column %)				
Sex					
Male	159 (48.6)	81 (49.4)	78 (47.9)	0.08	.78
Female	168 (51.4)	83 (50.6)	85 (52.2)		
Place of birth					
U.S.	190 (60.3)	136 (87.7)	54 (33.8)	95.89	<.0001
Outside the U.S.	125 (39.7)	19 (12.3)	106 (66.3)		
Acculturation strategy					
Traditional ^c	47 (14.9)	15 (9.7)	32 (20.0)		
Bicultural ^c	96 (30.5)	60 (38.7)	36 (22.5)	13.79	<.01
Assimilated	71 (22.5)	30 (19.4)	41 (25.6)		
Marginalized	101 (32.1)	50 (32.3)	51 (31.9)		

^aTable includes all available data. Imputation not conducted for data presented in this table.

^bMeasured at Wave 5; all other variables measured at wave 4

^cPost-hoc pairwise chi-squared test indicated that differences between Cambodian and Vietnamese were statistically significant ($p<.01$)

6.4.2 Adolescent Alcohol Use

Patterns of adolescent alcohol use are presented in Table 6.4. Only 9.2% (n=29) of the sample reported any past 30-day alcohol use at baseline. The proportion increased significantly ($p<.0001$) one year later to 15.9% (n=50). There was no difference in alcohol use between males and females at baseline ($p=.70$), however, among those who used alcohol at follow-up, 60% were male compared to 40% who were female. There were no differences in drinking by nationality at baseline ($p=.07$) or follow-up ($p=.70$). There was also no difference in alcohol use between acculturation strategies at baseline ($p=.12$), however, there were differences across the groups at follow-up ($p<.01$). The majority of those who used alcohol at follow-up identified as marginalized (52%), followed by assimilated (22%), bicultural (14%), and traditional (12%).

Table 6.4 Adolescent alcohol use at baseline and one-year follow-up (n=315)^a

	Baseline			One-year follow-up		
	Alcohol use ^b (n=29)	No alcohol use ^b (n=286)	χ^2 <i>p</i>	Alcohol use ^b (n=50)	No alcohol use ^b (n=265)	χ^2 <i>p</i>
	N (column %)			N (column %)		
Sex						
Male	15 (51.7)	137 (47.9)	0.15	30 (60.0)	122 (46.0)	3.28
Female	14 (48.3)	149 (52.1)	.70	20 (40.0)	143 (54.0)	.07
Nationality						
Cambodian	19 (65.5)	136 (47.5)	3.40	26 (52.0)	130 (49.0)	0.15
Vietnamese	10 (34.5)	150 (52.5)	.07	24 (48.0)	135 (51.0)	.70
Nativity						
Born in U.S.	22 (75.9)	168 (41.3)	3.22	31 (64.6)	155 (59.6)	0.42
Born outside U.S.	7 (24.1)	118 (58.7)	.07	17 (35.4)	105 (40.4)	.52
Acculturation strategy						
Traditional	1 (3.5)	46 (16.1)		6 (12.0)	32 (12.1)	
Bicultural	9 (31.0)	87 (30.4)	5.84	7 (14.0) ^c	84 (31.7)	12.1
Assimilated	5 (17.2)	66 (23.1)	.12	11 (22.0)	73 (27.5)	1
Marginalized	14 (48.3)	87 (30.4)		26 (52.0) ^c	76 (28.7)	<.01

^aTable includes all available data at each wave. Imputation not conducted for data presented in this table.

^bUse in past 30 days

^cPost-hoc pairwise chi-squared test indicated that difference in alcohol use was statistically significantly different between the marginalized and bicultural groups ($p=.01$)

6.4.3 Intergenerational cultural dissonance

Mean ICD scores and significance tests (*t*-tests for pairwise and *F*-tests for multiple comparisons) for several characteristics are presented in Table 6.5. Mean ICD scores did not differ significantly by sex, nationality, nativity (place of birth), or by caregiver or adolescent acculturation.

Table 6.5 Baseline characteristics of study sample by intergenerational cultural dissonance (ICD) level (n=315)^a

	Mean ICD (SD)	t/F statistic
Sex		
Male	2.82 (0.76)	0.30
Female	2.85 (0.86)	<i>p</i> =.76
Nationality		
Cambodian	2.91 (0.79)	-1.51
Vietnamese	2.78 (0.83)	<i>p</i> =.13
Nativity		
U.S.	2.86 (0.81)	-0.60
Outside U.S.	2.80 (0.81)	<i>p</i> =.55
Caregiver traditional acculturation level		
High	2.79 (0.81)	0.78
Medium	2.92 (0.82)	<i>p</i> =.46
Low	2.89 (0.88)	
Caregiver bicultural acculturation level		
High	2.98 (0.82)	0.65
Medium	2.82 (0.83)	<i>p</i> =.52
Low	2.85 (0.82)	
Caregiver assimilated acculturation level		
High	3.0 (0.88)	0.43
Medium	2.88 (0.74)	<i>p</i> =.65
Low	2.83 (0.84)	
Adolescent acculturation group		
Traditional	2.87 (0.89)	0.80
Bicultural	2.73 (0.92)	<i>p</i> =.50
Assimilated	2.88 (0.85)	
Marginalized	2.89 (0.61)	

^aTable includes all available data at each wave. Imputation not conducted for data presented in this table.

6.4.3 ICD and adolescent alcohol use

Table 6.6 displays the results of the multiple logistic regression model with the dichotomized past 30-day alcohol use outcome. Baseline ICD was significantly associated with increased odds of alcohol use at the one-year follow-up (OR=1.57; 95% CI: 1.03, 2.41; *p*=.04). Older age was significantly associated with drinking (OR=2.34;

95% CI: 1.68, 3.29; $p < .0001$) and males were also more likely to drink than females (OR=2.29; 95% CI: 1.11, 4.81; $p = .03$). Those with a bicultural acculturation strategy at baseline had significantly lower odds of alcohol use at follow-up compared to those with a traditional acculturation strategy in the unadjusted model (OR=0.26, 95% CI: 0.10, 0.70, $p = .01$), although this was not significant in the adjusted model ($p = .08$). Neither nativity nor nationality was significantly associated with alcohol use.

Table 6.6 Predictors at baseline of adolescent alcohol use at one-year follow-up (n=327)

	OR ^b	95% CI	<i>p</i>	AOR ^c	95% CI	<i>p</i>
Intergenerational cultural dissonance	1.49	1.01, 2.18	.04	1.57	1.03, 2.41	.04
Acculturation						
Traditionalism	1.00	REF	REF	1.00	REF	REF
Assimilation	0.64	0.26, 1.57	.33	0.84	0.31, 2.29	.73
Biculturalism	0.26	0.10, 0.70	<.01	0.36	0.12, 1.12	.08
Marginalized	0.56	0.23, 1.39	.21	0.48	0.18, 1.32	.16
Sex						
Female	1.00	REF	REF	1.00	REF	REF
Male	1.75	0.94, 3.25	.08	2.29	1.11, 4.81	.03
Age	2.29	1.67, 3.16	<.0001	2.34	1.68, 3.29	<.0001
Nationality						
Vietnamese	1.00	REF	REF	1.00	REF	REF
Cambodian	1.09	0.60, 1.99	.77	0.94	0.41, 2.18	.89
Nativity						
Outside the U.S.	1.00	REF	REF	1.00	REF	REF
U.S.-born	1.20	0.63, 2.27	.58	1.80	0.73, 4.44	.20

^aData from all participants used in regression models following multiple imputation

^bUnadjusted odds ratio

^cAdjusted odds ratio

Following the estimation of the model, four interaction terms were each separately tested to investigate whether the ICD-alcohol use relationship differed across four covariates. None of the interaction terms tested: sex (OR=0.93, 95% CI: 0.39, 2.23; $p = .87$); nationality (OR=1.1; 95% CI: 0.48, 2.66; $p = .79$); nativity (OR=0.71; 95% CI: 0.29, 1.86; $p = .52$); or the acculturation indicators (vs. the traditional reference group), marginalized (OR=1.86; 95% CI: 0.46, 7.54; $p = .39$), assimilated (OR=0.48; 95% CI:

0.15, 1.55; $p=.22$), and bicultural (OR=1.73; 95% CI: 0.44, 6.82; $p=.43$) were statistically significant at $p=.0125$ level of significance adjusted for four comparisons.

Table 6.7 shows the nature and degree of change in the ICD scores as well as change in the continuous acculturation subscale scores for traditional and U.S. cultural orientation, respectively. Means for ICD, traditional cultural identification, and U.S. cultural identification were relatively stable from baseline to follow-up with no significant change across any of the three measures as evaluated by paired t tests. Scores for all three measures at baseline were each significantly correlated with their respective score at follow-up.

Table 6.7 Change in ICD and acculturation from baseline to follow-up (n=315)^a

	Mean (SD) Wave 4	Mean (SD) Wave 5	Correlation of Wave 4 and Wave 5 scores	Paired t -test for change from Wave 4 to Wave 5
ICD	2.84 (0.81)	2.88 (0.81)	0.54, $p<.0001$	-0.78, $p=.43$
Cambodian/Vietnamese cultural identification	2.95 (0.36)	2.92 (0.33)	0.60, $p<.0001$	1.56, $p=.12$
U.S. cultural identification	3.03 (0.31)	3.03 (0.29)	0.56, $p<.0001$	-0.13, $p=.90$

^aTable includes all available data at each wave. Imputation not conducted for data presented in this table.

A longitudinal analysis exploring whether change in ICD from baseline to follow-up predicted alcohol use was conducted by creating a dichotomous variable for change in ICD and inserting this variable into the regression model presented in Table 6.6. Change in ICD did not significantly predict alcohol use at wave 5 (OR=1.23; 95% CI: 0.61, 2.51; $p=.56$).

6.5 Discussion

6.5.1 Adolescent alcohol use

This study investigated ICD among Vietnamese and Cambodian adolescents and the longitudinal relationship between ICD and adolescent alcohol use. Only a relatively small proportion of the study sample reported any alcohol use at baseline, although not

surprisingly this increased significantly one year later. The low rates of alcohol use among Asian youth are consistent with previous studies (Wu, Woody, Yang, Pan, & Blazer, 2011) and national estimates of youth drinking by racial group (Substance Abuse and Mental Health Services Administration, 2014). There were no differences by sex in alcohol use at baseline, but by the one-year follow-up males began to drink more than females. This finding is in line with previous research indicating that males and females tend to drink at similar levels in early adolescence but that starting in later teenage years, typically between 11th and 12th grade, males begin drinking more, a trend that persists into adulthood (Johnston, O'Malley, & Bachman, 2003).

Drinking increased significantly between baseline and follow-up for both Cambodian and Vietnamese adolescents, however, there was no difference between the two nationalities at either wave. This finding is contrary to previous research with Asian Americans that indicated significant differences between nationalities (Wang et al., 2012), although notably many of those studies did not include Southeast Asian subgroups. Among acculturation groups, those who were marginalized comprised over half of all adolescents who used alcohol, supporting the theory by Berry (1997), that among the four acculturation groups, marginalization would entail the highest risk of experiencing adverse outcomes.

6.5.2 ICD

Levels of ICD were similar to those found among Asian American college students (Lee & Liu, 2001), but ICD was not associated with sex, nationality, nativity, or acculturation as in previous studies. There are several explanations for this lack of association in our study.

Sex. Rumbaut (1996) found that ICD was more pronounced among females than males, but a study by Chung (2001) found this was only the case with regard to dissonance related to relationships and dating. The ICD scale used in our study included domains of dissonance beyond relationships and dating and could explain the lack of an observed difference by sex.

Nationality. Previous studies have found that Vietnamese and Cambodian adolescents reported a greater degree of conflict with their parents than youth from other racial groups (Phinney et al., 2000; Rumbaut, 1996), and, although we do not have a comparison group in this study, it does not appear that ICD differed between Vietnamese and Cambodians.

Nativity. Some ICD studies have suggested that the effects of generational conflict are most prominently felt among adolescents who are second generation; that is, adolescents who were born in the U.S. to first generation immigrant parents (Chung, 2001; Portes & Rumbaut, 2001). Although all caregivers in our study were immigrants, the adolescents in our study not born in the U.S. had lived there for an average of 14 years at the time of the study which means they arrived as very young children (referred to as the “1.5” generation; Almeida, Johnson, McNamara, & Gupta, 2011). Therefore, perhaps the effect of nativity is not as pronounced as it might have been had the adolescents immigrated to the U.S. with their caregivers at an older age.

Acculturation. ICD scores also did not vary according to either adolescent or adult acculturation level. This is an important finding given that according to ICD theory, adolescents with a high degree of assimilation and caregivers with a high degree of traditionalism would likely have greater within-family cultural dissonance (Rumbaut,

1996). These findings suggest that ICD can occur regardless of individual (adolescent or caregiver) acculturation level. For example, a child might believe that he/she is traditionally culturally oriented but his/her traditional orientation might not be *traditional enough* for the caregiver, resulting in significant ICD even with both caregiver and child reporting a high degree of traditionalism on individual acculturation scales.

6.5.3 ICD and alcohol use

ICD was significantly associated with alcohol use, in line with previous studies analyzing this relationship among Hispanic adolescents (Felix-Ortiz et al., 1998; Martinez, 2006; Unger et al., 2009). Adolescents reporting a greater degree of ICD at baseline had significantly greater odds of using alcohol at follow-up, and this was true even after controlling for several covariates, including acculturation. Therefore, regardless of acculturation strategy (i.e., assimilation, traditionalism, biculturalism, marginalization), ICD may increase the risk of adolescent alcohol use.

Adolescence is a time when some degree of conflict with caregivers is common due to the existing generational divide (Phinney et al., 2000) and, in most cases, a small degree of conflict during this period is not associated with adverse child outcomes (Formoso, Gonzales, & Aiken, 2000). It is theorized that ICD works as an effect modifier of this natural intergenerational tension between adolescents and their caregivers, interacting with this pre-existing conflict to increase the amount of misunderstanding and miscommunication experienced in the typical relationship. This leads to increased family conflict, poor parent-child bonding, lack of parental involvement and monitoring, and ultimately adverse child outcomes (Choi et al., 2008; Lee et al., 2000; Phinney et al., 2000). Although not measured in this study, family conflict has been found to mediate the

ICD-child problem relationship (Choi et al., 2008) and we suspect this is a potential pathway through which ICD impacts adolescent alcohol use among the Vietnamese and Cambodian adolescents in our study.

We investigated whether the ICD-alcohol use relationship was modified by sex, nationality, nativity, and acculturation, given previous research that indicated ICD and/or alcohol use varies across these characteristics (Chung, 2001; Portes & Rumbaut, 1996; Rumbaut, 1996; Wang et al., 2012). After testing each of the interaction terms separately in the regression model, none were statistically significant. This indicates that the ICD-alcohol use relationship was similar for males and females, Vietnamese and Cambodians, first and second generation adolescents, and for all four acculturation strategies. The non-statistical significance of the nativity interaction term is consistent with the only previous study that analyzed the potential moderating role of nativity on an ICD-substance use relationship (Unger et al., 2009).

During adolescence, youth may be actively exploring their own cultural identity (Phinney & Flores, 2002). It follows then that ICD may change during the course of the teenage years. We attempted to replicate an analysis reported by Unger et al. (2009) in one of the only other longitudinal studies of ICD and adolescent substance/alcohol use. In that study, conducted with Hispanic adolescents, there was a significant change in ICD between 9th and 10th grade among the youth and this change significantly predicted substance use in 10th grade. In our study, there was no significant change in ICD between the two waves and, not surprisingly, our ICD change indicator was not associated with alcohol use at follow-up. Although it is premature to say that ICD is more stable in Asian

adolescents compared to other racial groups, it is clearly the case in our study that ICD did not change significantly in a one-year time period.

6.5.4 Acculturation and alcohol use

Although the association between acculturation and alcohol use was not a primary aim of this study, the findings suggesting an increased risk for alcohol use among adolescents with a traditional cultural orientation (Table 6.6) were unexpected. We therefore conducted some additional analyses and discuss this further in Appendix C.

6.5.5 Limitations

As with previous studies using CCF data, our study was limited by the fact that this was a regional sample of Vietnamese and Cambodian families living in Washington State and so the generalizability of the findings to other parts of the country may be limited. Our measure of ICD has been validated for use with Asian American populations but does not allow report of ICD from the caregiver's perspective, only that of the adolescent. Although this is among the first longitudinal studies of ICD and alcohol use among Asian American adolescents, our follow-up period of one year is a limitation given the potentially dynamic nature of both ICD and alcohol use throughout adolescence. Future longitudinal studies should attempt to measure these indicators throughout youth and, if possible, into young adulthood. Finally, although our sample size was larger than previous studies of ICD among Asian American adolescents, we were limited in our ability to test for moderating effects of the ICD-alcohol use relationship, and so these analyses should be considered exploratory and replicated in larger samples.

6.5.6 Conclusions

Our study builds on the literature linking ICD with adverse child outcomes. Given the comparatively stronger effect of ICD on alcohol use relative to acculturation, the possibility that ICD is a mediator of this relationship, and the stability of ICD across acculturation categories, intervention strategies for alcohol use among Asian adolescents should focus on ICD rather than solely on acculturation (Ying & Han, 2007). This is especially the case for Asian families because ICD among Asian American youth tends to be higher than other racial groups (Lee et al., 2005) due to the discrepancy between collectivist values often cherished by the caregivers relative to the emphasis on the individual that is widespread in Western culture (Zhou & Bankston, 1998).

For adolescents reporting high levels of ICD, family-based interventions that focus on enhancing communication and teaching bicultural competence skills may help in reducing parent-child miscommunication, family conflict, and adverse outcomes associated with the cultural clash (Bacallao & Smokowski, 2005; Santisteban, Suarez-Morales, Robbins, & Szapocznik, 2006; Unger et al., 2009). These interventions should be culturally based and the methods for designing them could benefit from a study of the literature on interventions for Native American youth, many of which have been designed to deal with issues of bicultural discrepancies and cultural conflicts (Schinke, Tepavac, & Cole, 2000). Chapter 8 will include a discussion of potential intervention methods for ICD and alcohol use among Asian American youth.

Future studies would benefit from prospective designs that span the length of adolescence and measures that capture both adolescent and caregiver perspectives on ICD. The ICD-child outcome relationship is complex and there are likely several

pathways through which ICD may impact alcohol use. Future research should attempt to tease apart this relationship by formally testing mediators and moderators of the ICD-alcohol use association. Chapter 7 will explore the potentially mediating role of adolescent depression on this relationship.

6.5.7 References

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Chapter 7. Depression, intergenerational cultural dissonance, and alcohol use among Vietnamese and Cambodian adolescents from immigrant families in the United States

7.1 Abstract

Background: Asian American adolescents, particularly those from recently immigrated Southeast Asian families, may have an increased risk for depressive symptoms compared to adolescents from other racial groups. Intergenerational cultural dissonance (ICD) within Asian immigrant families has been identified as a risk factor for depression and other adverse child outcomes such as alcohol use. This study investigates the potentially mediating effects of depressive symptomatology in the ICD-alcohol use relationship among adolescents from Vietnamese and Cambodian immigrant families in Washington State.

Methods: Data on ICD, depression, and alcohol use were obtained from 327 Vietnamese and Cambodian adolescents participating in the Cross Cultural Families (CCF) project. Data on ICD, assessed by the Asian American Family Conflicts Scale, and depression, assessed by the Short Feelings and Mood Questionnaire were measured at a wave 4 (baseline) visit in the study. Alcohol use, as assessed by any use in the past 30 days, was measured one year later at wave 5 (follow-up).

Results: ICD was a significant predictor of subsequent alcohol use (OR: 1.57, 95% CI: 1.03, 2.41, $p=.04$). Both baseline depression (OR=2.46, 95% CI: 1.13 to 5.31, $p=.02$) and increase in depression score from baseline to follow-up (OR=2.53, 95% CI: 1.17 to 5.47, $p=.02$) were associated with alcohol use at follow-up. ICD was not statistically significant (OR=1.35, 95% CI=0.86 to 2.12, $p=.19$) in the model that included depression.

Conclusions: ICD is significantly associated with alcohol use among Vietnamese and Cambodian adolescents in this sample and our analysis suggests that this relationship is partially mediated by depression. Future research should continue to use mediational analyses in measuring ICD-child outcome relationships in order to identify intervention points.

7.2 Introduction

Depression is a major public health concern among Asian American adolescents. Several studies have reported higher depression prevalence among Asian youth than other racial groups (Bankston III & Zhou, 2002; Greenberger & Chen, 1996; Lorenzo, Frost, & Reinherz, 2000). According to the Youth Risk Behavior Survey, 29% of Asian American adolescents in high school reported feeling sad or hopeless almost every day in the past two weeks resulting in functional impairment compared to 27% of White and 28% of Black adolescents. Asian American girls, in particular, may have an increased risk for depression compared to girls from other racial and ethnic groups (Africa & Carrasco, 2011).

Data from the U.S. Office of Minority Health revealed that immigrants from Southeast Asia, such as Vietnam and Cambodia, have an increased risk for a range of mental health problems compared to other Asian nationalities due to the high rates of trauma experienced by these populations both before and after immigration (U.S. Dept. Health & Human Services, 2013). A study by Field et al. (2011) found that among Cambodian families, parental trauma exposure was significantly associated with child depression symptomatology through role-reversal and overprotective parenting styles. Asian youth also tend to seek and receive services for mental health problems at lower

rates than other racial groups (Chang & Sue, 2003). Given the high prevalence of depression and low rates of service use among Asian youth, investigation into the etiology of depressive symptomatology is warranted to inform intervention and service improvement.

Among immigrant youth in the U.S., acculturation has frequently been studied as a potential risk factor for mental health problems. In this dissertation, acculturation is defined as "the multidimensional process of the adoption of U.S. cultural norms, values, and lifestyles" (Alegria, 2009; Lara, Gamboa, Kahramanian, Morales, & Bautista, 2005; Wilson-Portuondo, 2003). In Chapter 3, we described four types of acculturation strategies adopted by immigrant populations: 1) *assimilation*, the degree to which someone has replaced their traditional culture with U.S. culture; 2) *traditionalism*, the degree to which someone has retained their traditional culture and not adopted aspects of a new culture; 3) *biculturalism*, the degree to which someone has adopted aspects of a new culture but also retained a great deal of their traditional culture as well, also referred to as "integration"; and 4) *marginalization*, the degree to which a person feels alienated from both cultures (Berry, 1997).

The extent to which any of these acculturation strategies are associated with depression among Asian youth remains unclear because of highly inconsistent results in the literature (Gupta, Leong, Valentine, & Canada, 2013; Hwang & Ting, 2008; Kim, Chen, Li, Huang, & Moon, 2009), due in part to the preponderance of unidimensional acculturation scales in previous studies (Gupta et al., 2013). Investigations have alternately found that a high degree of assimilation may increase (Dinh, 2000) or decrease (Crane, Ngai, Larson, & Hafen, 2005; Go, 1999; Juang & Cookston, 2009;

Nguyen, Messé, & Stollak, 1999; Skinner, 2000; Yasuda & Duan, 2003) the risk for depression, and similarly that a high degree of traditionalism may increase (Benner & Kim, 2009; Nguyen et al., 1999) or decrease (Juang & Cookston, 2009; Nguyen & Peterson, 1993; Patel, 2008) the risk for depression.

A recent meta-analysis of 38 studies analyzing depression and acculturation (including studies of both adults and adolescents) found a small but significant inverse association between assimilation and depression (Gupta et al., 2013). In other words, assimilation was protective for depression symptomatology. There was also a small inverse effect of traditionalism with depression symptomatology. Although this latter result was not statistically significant, the authors hypothesized the non-significance was due to a small number of studies that measured acculturation using a traditional orientation scale.

A limitation of these studies (and as a result, the meta-analysis) is the lack of ability to measure the association of biculturalism or marginalization with depression. However, the findings of potentially protective effects of both assimilation and traditionalism suggests that identification with either culture generally may be more important than which culture one identifies with specifically (Gupta et al., 2013). This suggests that adolescents who feel marginalized from both U.S. and traditional culture would have a higher risk for depression relative to those with a traditional identification, U.S. cultural orientation, or bicultural identification, but this has yet to be tested empirically.

In contrast to the research on acculturation, the effects of intergenerational cultural dissonance (ICD) on depression have been more consistent. ICD is defined as a

difference in acculturation between youth from immigrant families and their caregivers. This construct has been found to be a strong predictor of depression (Cheng, Lin, & Cha, 2015; Kim et al., 2009; Wong, 2000; Ying & Han, 2007) and suicidality (Lau, Jernewall, Zane, & Myers, 2002) among Asian youth from immigrant families. Kim et al. (2009) argued that studying ICD “may establish a more consistent relationship to depressive symptoms [compared to acculturation] because the family represents an influential and proximal context of development for adolescents.” Authors have posited that ICD leads to increased misunderstandings and miscommunication between parent and child, ultimately manifesting in overt family conflict (Choi, He, & Harachi, 2008; Chung, 2001). Children may then internalize their feelings over these conflicts leading to depressive symptoms (Crane et al., 2005). Additionally, Kim et al. (2009) hypothesized that higher levels of ICD result in less openness and communication between adolescents and their caregivers. The adolescents thus lose a key source of support that would otherwise be able to help them navigate difficult circumstances, leading to depression symptoms of hopelessness and helplessness.

As first described by Portes and Rumbaut (1996), ICD is associated with a number of adverse child outcomes (Choi et al., 2008; Chung, 2001; Hwang & Wood, 2009). In Chapter 6 of this dissertation, we found that ICD was significantly associated with alcohol use among Vietnamese and Cambodian adolescents. Other studies have also suggested that ICD is associated with alcohol and substance use among youth from immigrant families of other racial groups (Lim, Stormshak, & Falkenstein, 2011; Unger, Ritt-Olson, Wagner, Soto, & Baezconde-Garbanati, 2009).

Research has indicated that alcohol use problems among youth are strongly associated with mental health problems, including depression (Galaif, Sussman, Newcomb, & Locke, 2007). Two studies found that depression was a significant predictor of alcohol use among Asian American girls (Fang, Barnes-Ceeney, & Schinke, 2011; Otsuki, 2003). Fang et al. (2011) suggested that increased levels of drinking may be used as coping mechanism or to help alleviate negative mood among Asian youth (Fang et al., 2011).

In summary, the existing research indicates that depression is highly prevalent among Asian youth in the U.S., particularly among girls, and that it may be associated with ICD and alcohol use. No previous study, however, has tested the potentially mediating role of depression in the ICD-alcohol use relationship among Asian adolescents. We hypothesize that higher levels of ICD may increase the risk for adolescent alcohol use mediated through increased depressive symptomatology. The current study builds upon the results in Chapter 6 by exploring the role of depression in the ICD-alcohol use relationship. Specifically, this study will investigate: 1) levels of depression severity among Vietnamese and Cambodian adolescents from immigrant families; 2) whether depression varies by several key characteristics including acculturation and ICD; and 3) if depression mediates the ICD-alcohol use relationship established in Chapter 6.

7.3 Methods

7.3.1 Participants and Procedure

Data for this study were obtained from a longitudinal investigation of 327 Cambodian (all of the Khmer ethnic group) and Vietnamese immigrant families in

Washington State. Five waves of data were collected annually from these families beginning in 2001. Stratified random sampling with school district lists as the sampling frame was used to recruit an approximately equal number of Vietnamese and Cambodian families from the Seattle metro area. An adolescent (5th-7th grade upon enrollment) and a caregiver of the adolescent were invited to participate from each enrolled family (Tajima & Harachi, 2010).

Interviews were conducted by a study assessor in-person. Adolescents and caregivers were interviewed separately. Questions regarding mental health, alcohol use, and other sensitive topics were self-administered by the participants; the assessor allowed the participants to complete these sections privately. The interviews themselves were conducted in the language of the participant's choice (English, Khmer, or Vietnamese).

The current study focuses on the final two waves of data collection in CCF, waves 4 (baseline for this study) and 5 (follow up), because these were the time points at which information on ICD was obtained. Therefore, adolescents were in 8th, 9th, or 10th grade at baseline of this study. The original data collection for CCF was approved by the University of Washington Human Subjects Committee. The current secondary analysis study was designated with exempt status by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board.

7.3.2 Measures

Outcome

Adolescent alcohol use was assessed through the following single question: "in the past 30 days, on how many occasions have you had beer, wine, or liquor?" Alcohol use in the past 30 days is a standard measure of drinking among youth (NIAAA, 2003).

Response options included: 1) never; 2) 1-2 times; 3) 3-5 times; 4) 6-9 times and 5) 10 or more times. For this study we dichotomized the alcohol use variable as 0 (no use) and 1 (any use) because most adolescents in the sample reported no alcohol use.

Predictors

Adolescent depression was measured with the Short Feelings and Mood Questionnaire ($\alpha=.91$) (Angold et al., 1995). Thirteen items from this scale (e.g. "I found it hard to think or concentrate" and "I didn't enjoy anything at all") were used to assess adolescent depression (see Table 7.1 for all 13 items). The reference period for each item was the past two weeks. Response options were 1) NO!; 2) no; 3) yes; and 4) YES!. An average depression score was calculated for each participant (possible range: 1-4) to use in analysis such that higher scores were associated with greater severity of symptoms. Given that depressive symptoms might vary over the course of adolescence, we also sought to determine the effect of change in depression on alcohol use. We calculated an indicator for depression change from baseline (grade 8-10) to follow-up (grade 9-11). This was a binary indicator coded as 1 if a participant's depression score increased over the one year period and 0 if depression stayed the same or decreased.

Table 7.1 Items in Short Mood and Feelings Questionnaire (Angold et al. 1995)

In the past two weeks I...
1) Didn't enjoy anything at all
2) Was very restless
3) Cried a lot
4) Found it hard to think properly or concentrate
5) Hated myself
6) Thought nobody really loved me
7) Thought I could never be as good as other kids
8) Felt I did everything wrong
9) Felt lonely
10) Felt I was a bad person
11) Felt so tired I just sat around and did nothing
12) Felt I wasn't good anymore
13) Felt miserable or unhappy
Item response options: 1) NO!; 2) No; 3) Yes; 4) YES!

Intergenerational cultural dissonance (ICD) was measured with the Asian American Family Conflicts Scale (Lee, Choe, Kim, & Ngo, 2000), as described in Chapter 6. The scale included 10 items, each prefaced by the question "How likely is this type of situation to occur in your family?" (see Table 6.1, for details). Response options were: 1) never; 2) seldom; 3) sometimes; 4) often; and 5) almost always. From these 10 items, an average ICD score was calculated for each participant with a higher score associated with a greater amount of ICD and a possible range of 1-5. Internal consistency of the ICD scale was very good at both baseline ($\alpha=.86$) and follow-up ($\alpha=.87$).

ICD was used both as a continuous variable and as a categorical variable. The categorized variable included "high," "medium," and "low" groups by analyzing the distribution (which was approximately normal) of the scores and determining appropriate cut-off points based on visual inspection of the data. This method is similar to our categorization of the caregiver acculturation variables described in Chapters 4 and 5. Gelman & Park (2009) have argued that categorizing continuous data into three groups performs adequately statistically, and although it is associated with some loss of power, the method retains between 80%-90% efficiency of the continuous predictor. This method has also been shown to perform better than a standard dichotomized split (e.g. only "high" and "low" categories) (Gelman & Park, 2009). The categorized ICD variable was used in an analysis of variance (ANOVA) test comparing depression means. For the regression models, the continuous ICD score was used as per the analysis described in Chapter 6. See Statistical Analysis section below for details.

Covariates

Covariates for the current study remained the same as the ICD-alcohol use analysis presented in Chapter 6. *Demographic characteristics* included sex, age, nationality (Cambodian or Vietnamese), nativity (born in the U.S. or outside the U.S.), and number of years lived in the U.S. These variables were included because previous studies have suggested that they may be associated with ICD and/or alcohol use among Asian youth (Chung, 2001; Portes & Rumbaut, 1996; Rumbaut, 1996; Wang, Kviz, & Miller, 2012).

Adolescent acculturation was measured with the same methodology as described in Chapter 6, through the use of two scales developed with items from four instruments: the General Ethnicity Questionnaire (Tsai, Ying, & Lee, 2000), the Multigroup Ethnic Identity Measure (Phinney, 1992), the Youth Adaptation and Growth Questionnaire (Portes & Rumbaut, 2001), and the Acculturation Scale for Vietnamese Adolescents (Nguyen & Eye, 2002). From these instruments, two scales were created: one for traditional cultural identification and one for U.S. cultural identification (see Table 6.2). Response options for items were on a Likert-type scale that ranged from 1 (strongly disagree) to 4 (strongly agree). Internal consistency for the traditional cultural scale was very good at baseline ($\alpha=.84$) and follow-up ($\alpha=.83$) and adequate for the U.S. cultural scale ($\alpha=.75$ at baseline and $\alpha=.74$ at follow-up). The scale scores were used to assign participants to one of the four acculturation strategies (marginalized, traditional, bicultural, and assimilated) described by (Berry, 1997) and using a methodology similar to Lim et al. (2011), as described in Chapter 6.

Caregiver variables of alcohol use, traumatic events, and acculturation were included because studies have shown that they may impact adolescent alcohol use, ICD,

and/or depression (Field et al., 2011; Hendershot, MacPherson, Myers, Carr, & Wall, 2005; Portes & Rumbaut 1996). These measures are described in detail in Chapters 4 and 5. Briefly, 1) *alcohol use* was measured using a modified version of the Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) (Bradley et al., 2003); 2) *caregiver exposure to traumatic events* was assessed using a modified version of the Harvard Trauma Questionnaire (HTQ; Mollica et al., 1992) and 3) *acculturation* was measured by the Suinn-Lew Asian Self-Identity Acculturation Scale (Suinn, Ahuna, & Khoo, 1992).

7.3.3 Statistical analysis

Means, counts, and percentages were calculated to describe participant baseline demographic characteristics. Independent samples *t* tests and chi-squared tests were used to evaluate differences in characteristics between males and females. This comparison was conducted due to the literature discussed above and in Chapter 6 suggesting that alcohol use, depression, and ICD may all vary by sex among Asian youth. We also used *t* tests and one-way ANOVA F-tests to describe differences in depression severity across several participant characteristics. All significance tests were two-tailed and *p* values were considered statistically significant at 0.05.

To investigate the effect of depression on alcohol use and its potentially mediating role in the ICD-alcohol use relationship, we used a four-step method described by Baron & Kenny (1986) and replicated in a study of acculturation and alcohol use among Asian adolescents by Hahm et al. (2004). First, we investigated whether ICD was associated with subsequent alcohol use after controlling for potentially confounding covariates, the results of which are presented in Chapter 6.

Second, we investigated whether there was a statistically significant relationship between ICD and adolescent depression. This analysis was conducted by an ANOVA test that analyzed whether there were significant differences in depression severity across the three categorized ICD levels (high, medium and low).

Third, we estimated a multiple logistic regression model to assess the association between depression and alcohol use. This was the same model estimated in Chapter 6 except for the replacement of the ICD variable with the two depression indicators. The model included 1) baseline depression; 2) the binary indicator for change in depression from baseline to one-year follow-up; and 3) the covariates included in the regression model presented in Chapter 6 (nationality, nativity, sex, age, and acculturation).

In the fourth and final step of the analysis, we conducted a multiple logistic regression model that included all covariates in the final model, baseline depression score, change in depression from baseline to follow-up, and ICD. The goal of this analysis was to determine whether the effect of ICD on alcohol use (as measured in Chapter 6) was attenuated after the addition of depression to the model. An attenuation in effect or loss of statistical significance would suggest the presence of partial or full mediation by depression.

Loss to follow-up was minimal in CCF (<5%). As with Chapter 6, however, in order to prevent a potential emigrative selection bias resulting from study drop-out and to account for item-level missing data, multiple imputation procedures were conducted before estimating the regression models. We multiply imputed 10 datasets using chained equations (Azur, Stuart, Frangakis, & Leaf, 2011; Royston & White, 2011; van Buuren, Boshuizen, & Knook, 1999). Regression models were estimated by combining

coefficients and standard errors from the 10 datasets following Rubin's rules for missing data (Rubin, 1987). Analyses were conducted using Stata, Version 13 (StataCorp, 2013).

7.4 Results

7.4.1 Characteristics of study sample

The sample consisted of 327 Vietnamese and Cambodian adolescents 51.4% of whom (n=168) were girls. Table 7.2 presents characteristics of the sample stratified by sex (for stratification by nationality please Table 6.3). Girls in the sample were statistically significantly more likely to have been born in the U.S. than boys (66.9% vs. 53.3%; $p=.01$) and have lived for a longer number of years in the U.S. (14.93 vs. 14.29; $p=.04$) than boys. Acculturation also differed by sex ($p<.01$) with a significantly greater proportion of boys categorized as marginalized than girls (44.7% boys vs. 20.3% girls) and a greater proportion of girls categorized as assimilated (28.8% girls vs. 15.8% boys) and bicultural (35.6% girls vs. 20.0% boys) compared to boys. There were approximately equal numbers in the traditional category (14.5% of boys and 15.3% of girls). There was no statistically significant difference in ICD levels between boys and girls ($p=.10$) or any of the other characteristics. For a breakdown of alcohol use at baseline and follow-up and how it varied across participant characteristics, see Table 6.4 in Chapter 6.

Table 7.2 Baseline characteristics of study sample (n=327)

	Total Sample (n=327) ^a	Males (n=159) ^a	Females (n=168) ^a	<i>t</i> / χ^2	<i>p</i>
mean (SD)					
Age ^b	16.20 (1.13)	16.21 (1.14)	16.19 (1.13)	-0.22	.82
Number of years in the U.S. ^b	14.63 (2.72)	14.29 (2.82)	14.93 (2.59)	2.04	.04
Caregiver AUDIT-C score	0.39 (1.14)	0.43 (1.30)	0.36 (0.99)	-0.46	.64
Caregiver trauma ^b	4.11 (4.09)	3.95 (4.13)	4.25 (4.36)	0.58	.56
n (column %)					
Nationality					
Cambodian	159 (48.6)	78 (49.1)	83 (49.4)	0.07	.43
Vietnamese	168 (51.4)	81 (50.9)	85 (50.6)		
Alcohol use past 30 days ^b					
Yes	29 (9.2)	15 (9.9)	14 (8.6)	0.15	.70
No	286 (90.8)	137 (90.1)	149 (91.4)		
Nativity					
U.S.	190 (60.3)	81 (53.3)	109 (66.9)	6.06	.01
Outside the U.S.	125 (39.7)	71 (46.7)	54 (33.1)		
Acculturation category					
Traditional	47 (14.9)	22 (14.5)	25 (15.3)		
Bicultural ^c	96 (30.5)	38 (25.0)	58 (35.6)	13.79	<.01
Assimilated ^c	71 (22.5)	24 (15.8)	47 (28.8)		
Marginalized ^c	101 (32.1)	68 (44.7)	33 (20.3)		
Intergenerational cultural dissonance					
High	54 (17.1)	20 (13.2)	34 (20.9)	4.71	.10
Medium	179 (56.8)	95 (62.5)	84 (51.5)		
Low	82 (26.0)	37 (24.3)	45 (27.6)		

^aTable includes all available data. Imputation not conducted for data presented in this table.

^bMeasured at one-year follow-up; all other variables measured at baseline

^cPost-hoc pairwise chi-squared test indicated that differences between males and females were statistically significant ($p < .01$)

7.4.2 Depression severity and association with ICD

Table 7.3 presents baseline adolescent depression scores. The overall mean was 1.59 (SD=0.50, range=1.0-3.15) with a significantly higher average mean ($p=.04$) among girls (1.65) compared to boys (1.53). Depression scores were higher on average among those who had used alcohol in the past 30 days compared to those who had not (1.82 vs. 1.56, $p < .01$) and also higher among those born in the U.S. compared to those born outside the U.S. (1.63 vs. 1.52, $p=.05$). Average depression scores differed across the acculturation categories ($p=.01$) with the highest average among the marginalized group (1.70) and the lowest average score among the bicultural group (1.46). There were no differences in adolescent depression severity across any of the caregiver characteristics:

alcohol use ($p=.50$), trauma ($p=.51$) or acculturation ($p=.19$ for traditional, $p=.17$ for bicultural, and $p=.15$ for assimilated).

We found that there was a significant relationship ($p<.0001$) between depression and ICD, as categorized by low, medium and high, that followed a dose-response pattern. The lowest average depression scores were among those with the lowest levels of ICD (1.35) followed by those with medium levels (1.62), and finally those with the highest levels of ICD (1.82).

Table 7.3 Characteristics of study sample by depression severity at baseline (n=315)^a

	Mean depression (SD)	t/F statistic
Sex		
Male	1.53 (0.43)	2.12
Female	1.65 (0.56)	<i>p</i> =.04
Nationality		
Cambodian	1.64 (0.52)	-1.91
Vietnamese	1.54 (0.49)	<i>p</i> =.06
Alcohol use past 30 days		
Yes	1.82 (0.65)	-2.65
No	1.56 (0.48)	<i>p</i> <.01
Place of birth		
U.S.	1.63 (0.54)	-2.01
Outside U.S.	1.52 (0.44)	<i>p</i> =.05
Caregiver traditional acculturation level		
High	1.60 (0.52)	1.68
Medium	1.61 (0.48)	<i>p</i> =.19
Low	1.45 (0.48)	
Caregiver bicultural acculturation level		
High	1.45 (0.40)	1.78
Medium	1.61 (0.52)	<i>p</i> =.17
Low	1.61 (0.51)	
Caregiver assimilated acculturation level		
High	1.67 (0.53)	1.93
Medium	1.70 (0.54)	<i>p</i> =.15
Low	1.55 (0.49)	
Caregiver traumatic event exposure (number of events)		
0	1.59 (0.49)	
1-2	1.55 (0.52)	2.31
3-6	1.52 (0.45)	<i>p</i> =.51
7 and above	1.65 (0.54)	
Caregiver AUDIT-C score		
≥3	1.63 (0.53)	-0.68
<3	1.58 (0.50)	<i>p</i> =.50
Adolescent acculturation group		
Traditional	1.60 (0.49)	3.68
Bicultural ^b	1.46 (0.49)	<i>p</i> =.01
Assimilated	1.60 (0.49)	
Marginalized ^b	1.70 (0.52)	
Intergenerational cultural dissonance		
High ^c	1.82 (0.57)	16.54
Medium ^c	1.62 (0.50)	<i>p</i> <.0001
Low ^c	1.35 (0.36)	

^aTable includes all available data at each wave. Imputation not conducted for data presented in this table.

^bDifference in means between marginalized and bicultural group was statistically significant after pairwise testing (*p*<.01)

^cDifference in means between low and medium, medium and high, and low and high were all statistically significant after pairwise testing (*p*<.01)

7.4.3 Association between depression and alcohol use

Results of the multiple logistic regression assessing the relationship between depression and alcohol use while controlling for potentially confounding covariates are presented in Table 7.4. Baseline depression (OR=2.86; 95% CI: 1.36 to 5.93; $p<.01$) and an increase in depression from baseline to follow-up (OR=2.66; 95% CI: 1.25, 5.7; $p=.01$) both significantly predicted alcohol use at follow-up.

Table 7.4 Association of depression and alcohol use^a (n=327^b)

	AOR ^c	95% CI	<i>p</i>
Depression (baseline)	2.86	1.36, 5.93	<.01
Change in depression (baseline to follow-up)			
No change or decrease	1.00	REF	REF
Increase	2.66	1.25, 5.70	.01
Acculturation (baseline)			
Traditional	1.00	REF	REF
Assimilated	0.84	0.30, 2.32	.73
Bicultural	0.41	0.13, 1.27	.12
Marginalized	0.41	0.13, 1.15	.09
Sex			
Female	1.00	REF	REF
Male	2.69	1.26, 5.75	.01
Age	2.34	1.67, 3.29	<.0001
Nationality			
Vietnamese	1.00	REF	REF
Cambodian	0.81	0.35, 1.90	.63
Place of birth			
Born outside the U.S.	1.00	REF	REF
Born in the U.S.	1.68	0.69, 4.14	.25

^aAlcohol use past 30 days. Measured at follow-up.
^bData from all participants used in regression models following multiple imputation
^cAdjusted odds ratio

7.4.4 Assessing the mediating role of depression

In Chapter 6 we found that ICD was significantly associated with alcohol use in a multiple logistic regression model (OR=1.57; 95% CI: 1.03, 2.41; $p=.04$). When depression and change in depression variables were added to that model, ICD was no longer significantly associated with alcohol use (OR=1.35; 95% CI=0.86, 2.12; $p=.19$), however, both baseline depression (OR=2.46; 95% CI: 1.13, 5.31; $p=.02$) and change in

depression (OR=2.53; 95% CI: 1.17, 5.47; $p=.02$) remained significant predictors of alcohol use at follow-up (Table 7.5).

Table 7.5 Assessing the mediating effects of depression on ICD and alcohol use^a (n=327^b)

	AOR ^c	95% CI	<i>p</i>
Depression (baseline)	2.46	1.13, 5.31	.02
Change in depression (baseline to follow-up)			
No change or decrease	2.53	1.17, 5.47	.02
Increase			
Intergenerational cultural dissonance (baseline)	1.35	0.86, 2.12	.19
Acculturation			
Traditional	1.00	REF	REF
Assimilated	0.84	0.30, 2.36	.75
Bicultural	0.41	0.13, 1.30	.13
Marginalized	0.42	0.15, 1.17	.10
Sex			
Female	1.00	REF	REF
Male	2.72	1.27, 5.87	.01
Age	2.36	1.68, 3.32	<.0001
Nationality			
Vietnamese	1.00	REF	REF
Cambodian	0.80	0.34, 1.90	.62
Nativity			
Born outside the U.S.	1.00	REF	REF
Born in the U.S.	1.75	0.71, 4.31	.22

^aAlcohol use in past 30 days. Measured at follow-up.
^bData from all participants used in regression models following multiple imputation
^cAdjusted odds ratio

7.5 Discussion

This study investigated the intersection of depression, alcohol use, and ICD among Vietnamese and Cambodian adolescents from immigrant families living in Washington State. There were several key findings to the study: 1) depression severity differed across several key characteristics including acculturation (greater severity among the marginalized strategy), sex (greater severity among females), nationality (greater severity among Cambodians), and ICD (greater severity with increasing levels of ICD); 2) baseline depression and increase in depressive symptoms over one-year both significantly predicted alcohol use at follow-up; and 3) depression was a significant mediator of the ICD-alcohol use relationship established in Chapter 6.

We first tested whether depression severity differed across several characteristics. Previous studies have found that depressive symptoms may be higher in Asian American youth compared to other racial groups (Bankston III & Zhou, 2002; Greenberger & Chen, 1996; Lorenzo et al., 2000) and that adolescents whose families immigrated from Southeast Asia may have an increased risk among all Asian nationalities due to intergenerational transmission of trauma that many of their caregivers experienced before immigrating (Field et al., 2011; U.S. Dept. Health & Human Services, 2013). We found depression severity to be moderately low (mean of 1.59 overall out of possible 1-4 range), but that Cambodian adolescents reported a higher average than Vietnamese adolescents. Girls had significantly higher scores than boys, consistent with previously published reports, including the CDC's Youth Risk Behavior Surveillance System which found 34% of Asian American high school girls had depressive symptoms in the past year compared to 20% of boys, a trend similar to other racial groups (Centers for Disease Control and Prevention, 2014). Previous studies with Asian Americans have also found that Asian girls may have an increased risk for depression compared to Asian boys and adolescents from other racial and ethnic groups (Africa & Carrasco, 2011; Kim & Chun, 1993).

Depression severity differed significantly across acculturation categories. Depression scores among youth in the traditional and assimilated categories were equivalent. Those in the marginalized group had the highest reported depression severity among the four categories and those who identified as bicultural had the lowest average score. Although studies on acculturation and depression among Asians have resulted in disparate and inconsistent results, a meta-analysis suggested there is a protective effect of

traditionalism and assimilation (Gupta et al. 2013). It is therefore not surprising that the traditional and assimilated groups had the same depression score on average in our study or that the lowest average score was among adolescents who had a bicultural identification. Future research and intervention strategies should thus focus on those adolescents who feel marginalized, or have a lack of identification with either traditional or U.S. culture. Depression severity was highest among this group, an important finding given results presented in Chapter 6, which found that adolescents in this group comprised over 50% of all youth who used alcohol. Although described by Berry (1997) as the acculturation strategy that might experience the most difficulty in cultural adjustment, marginalization has been largely ignored in the scientific literature.

Our mediational analysis following the methodology of Baron and Kenny (1986) proceeded in four steps. First, we analyzed the association of ICD and alcohol use. These results, presented in Chapter 6, indicated that ICD significantly predicted subsequent alcohol use. Second, we tested whether ICD was associated with depression. We found that there was a significant relationship between depression and ICD, with mean depression scores lowest among the “low” ICD group, and significantly increasing scores for the medium and high ICD groups, respectively. This finding is consistent with previous studies that have repeatedly found strong and significant relationships between ICD and adolescent depression among Asians (Cheng et al., 2015; Kim et al., 2009; Wong, 2000; Ying & Han, 2007).

Third, we tested whether depression was associated with alcohol use in a multiple logistic regression model. We found that baseline depression predicted alcohol use at the one-year follow-up and that increasing depression over the one year period was a

significant predictor of alcohol use. In other words, regardless of depression level at baseline, an increase in depression between waves was associated with an increased odds of drinking. The positive association between depression and alcohol use is consistent with previous studies of Asian adolescents (Fang et al. 2013; Otsuki, 2003)

In the fourth and final step of the mediational analysis, we re-estimated our multiple logistic regression model with both the ICD and depression indicators. Both of the depression covariates remained statistically significant with similar effects as the original depression model; the effect of ICD, however, attenuated such that it was no longer statistically significantly associated with alcohol use. This finding suggests that the ICD-alcohol use relationship was at least partially mediated by depression.

Although not measured directly, we posit that in our sample, as with other studies of ICD and adverse child outcomes (Choi et al. 2008; Kim et al. 2009), a greater degree of ICD was associated with increased miscommunication and misunderstanding between the caregiver and adolescent. These miscommunications may have led to less parental involvement and subsequent feelings of hopelessness and helplessness in the adolescent, and ultimately increased depressive symptomatology. Previous studies have found that unsupportive parenting practices can result in adolescent depression (Kim et al., 2009). Alcohol use may then follow depression as a means for coping or negative mood alleviation (Fang et al. 2011). The temporal sequencing of our depression predictor variables followed by alcohol use suggests that adolescent depression led to initiation of alcohol use and not vice versa.

7.5.1 Limitations

This study has a few limitations to consider. First, the CCF study was conducted solely in Washington State in which the characteristics of the Vietnamese and Cambodian families could potentially be different from families in other parts of the country. Therefore our ability to generalize to all Vietnamese and Cambodian families in the U.S. might be limited, however, the educational attainment and socioeconomic status of the families in our study are similar to those from other areas of the United States (Choi et al., 2008). Second, although we improved upon previous studies by measuring both individual acculturation and ICD, we only have reports on ICD from the adolescent. Future research should attempt to collect reports from both adolescent and caregiver.

Although this is among the first longitudinal studies of ICD and alcohol use among Asian American adolescents, our follow-up period of one year is a limitation given the dynamic nature of ICD, depression, and alcohol use throughout adolescence. Future longitudinal research should attempt to measure these relationships throughout the high school years. Finally, our measure of depression, though tested and developed for use with adolescents, has not been validated with Vietnamese or Cambodian youth. Gupta et al. (2013) has argued that many existing measures of depression may not capture the full depression construct for Asians. Therefore, future studies analyzing the association of acculturation and depression should include measures developed specifically for Asians to account for symptoms that may be specific to subgroups and for the possibility of underreporting of depression symptoms (Gupta et al., 2013).

7.5.2 Conclusion and implication for practice

This study builds on Chapter 6 in adding to the literature on the association between ICD and adverse child outcomes among Asian adolescents (Choi et al., 2008; Chung, 2001; Hwang & Wood, 2009). We found that the relationship between ICD and subsequent alcohol use was fully mediated by depression.

Our findings indicate that ICD increases adolescents' susceptibility to alcohol use initiation through increasing depression symptomatology. Therefore, interventions that address ICD within Asian families may reduce the risk of both depression and alcohol use among adolescents. Unfortunately, although most papers studying ICD conclude that reducing it would be useful, they do not specify how this should be done.

There are no well-established interventions in the literature targeted towards reducing ICD, although some authors have suggested methods and areas for interventions. As described by Crane et al. (2005), some of these strategies may include: 1) encouraging clinicians to recognize and address potential within-family causes of depression among immigrant families; 2) discussing acculturation differences in an open and honest way; 3) reframing the issue for families as an intercultural one as opposed to an intergenerational one, which has had success in Hispanic populations (Szapocznik, Santisteban, Kurtines, Perez-Vidal, & Hervis, 1984); 4) assisting the caregiver and adolescent in communicating with each other and educating them on the source of their conflict; and 5) offering such interventions in bilingual settings in places such as schools or community centers. Some authors believe that targeting parental practices may be superior to addressing family conflict itself given previous results that show family

conflict is difficult to address directly (Formoso, Gonzales, & Aiken, 2000; S. Y. Kim et al., 2009).

Now that the risk associated with ICD in leading to adverse child outcomes has been established in the literature, it is time for the field to begin building the evidence base for effective intervention strategies on how best to reduce this type of conflict within immigrant families. Furthermore, the pathway of ICD to alcohol use through depression is just one of several possibilities. For example, other studies have found that family conflict and deviant peer relationships may also mediate the relationships between acculturation, ICD and adverse child outcomes (Choi et al., 2008; Hahm et al., 2004). Future research studying the epidemiology of ICD should continue to use mediational designs in order to help disentangle these complex associations and identify appropriate intervention points.

7.6 References

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Chapter 8. Discussion

This dissertation aimed to investigate the association of acculturation, ICD, and alcohol use among Vietnamese and Cambodian immigrant families. The majority of studies on acculturation and ICD have been conducted with Hispanic populations in the United States. Studies that have included Asian Americans have been limited by single-item and proxy measures of acculturation, cross-sectional designs, and a lack of focus on specific Asian subgroups. This dissertation attempted to address these limitations by answering the following questions:

1. What is the longitudinal effect of acculturation on alcohol use among Vietnamese and Cambodian immigrant adult women in the United States?
2. What is the longitudinal effect of ICD on alcohol use among Vietnamese and Cambodian adolescents from immigrant families in the United States?
3. Is the ICD-alcohol use relationship mediated by adolescent depression?

The primary results for each research question are detailed in Chapters 5-7, respectively.

This chapter will summarize and integrate the primary findings and describe the implications for future research and practice. The chapter will conclude with the limitations, strengths, and public health significance of the dissertation.

8.1 Summary of principal findings

8.1.1 Acculturation and alcohol use among adults

Acculturation was not found to be statistically significantly associated with alcohol use among the overall sample of Vietnamese and Cambodian immigrant adults in the U.S. There were significant associations, however, between acculturation (traditionalism and biculturalism, but not assimilation) and alcohol use among those who

reported any alcohol use over the five waves of the study. This suggests that cultural identification did not have a role in determining whether or not these adults drink, but that among those who used alcohol, acculturation strategy influenced the drinking pattern. In our study, the drinking pattern was defined by the AUDIT-C score, which encompassed frequency, quantity, and binge drinking behavior.

Specifically, among drinkers we found that a higher degree of traditional cultural identification was associated with lower levels of alcohol use. This was consistent with a study of Asian American adolescents in the U.S. (Lim, Stormshak, & Falkenstein, 2011). We also found that a greater degree of bicultural identification was associated with lower levels of alcohol use. Previous studies have not measured the association of bicultural identification and alcohol use among Asian immigrant adults and we therefore have no comparison for these results. We posit that the retention of traditional cultural values serves as a protective factor for these individuals and that protective factor acts as a buffer for any risk imparted by identification with American culture.

Our null finding of assimilation and alcohol use is contrary to much of the previous research on alcohol use and acculturation among both Hispanic (Caetano & Mora, 1988; Marks, Garcia, & Solis, 1990; Zemore, 2005) and Asian (Park, Anastas, Shibusawa, & Nguyen, 2014; Savage & Mezuk, 2014; Wong et al., 2007) immigrant adults. These studies measured acculturation with single-item proxy measures that assumed a unidimensional acculturation construct. That is, an increasing identification with U.S. culture was assumed to coincide with a decreasing identification with traditional culture. Therefore, it is not clear from these studies whether the increased alcohol use risk was attributable to the adoption of U.S. cultural norms, the loss of

traditional culture, or some combination of both. Our results indicate that the increased risk is more likely to come from the loss of traditional culture than from the adoption of the new culture.

Alcohol use among these caregivers was very low and may have accounted for the null finding of acculturation and drinking in the overall sample. The low levels of alcohol use were consistent with previous research and national surveys suggesting that Asian Americans drink less than other racial groups (Substance Abuse and Mental Health Services Administration, 2014). This also supports findings by Salas-Wright & Vaughn (2014) of a “refugee paradox,” in which those immigrants who arrived as refugees drink alcohol less frequently than both native-born and non-refugee immigrants.

There were significant differences between the Cambodian and Vietnamese women with Cambodian women reporting significantly higher AUDIT-C scores than Vietnamese women. This difference across nationalities is also highly consistent with studies of alcohol use that have disaggregated Asian subgroups (Iwamoto, Corbin, & Fromme, 2010; Iwamoto, Takamatsu, & Castellanos, 2012; Le, Goebert, & Wallen, 2009; Lum, Corliss, Mays, Cochran, & Lui, 2009; Nishimura, Goebert, Ramisetty-Mikler, & Caetano, 2005; Park et al., 2014; Price, Risk, Wong, & Klinge, 2002; Thai, Connell, & Tebes, 2010; Wong et al., 2007).

Although the mean AUDIT-C scores were low overall, this was due in part to heavily skewed right data in which many participants reported no drinking. Among those who reported any drinking during the course of the study, average scores approached the AUDIT-C hazardous drinking cut-off of 3 or higher. Among those who reported any use,

40% had scores at 3 or above, suggesting that problematic drinking is common among those who do use alcohol.

Finally, there were no significant changes in alcohol use or acculturation over the five waves of the study. One possibility is that the five-year time period was not sufficiently long enough to observe any meaningful change. It is also likely that change in acculturation and alcohol use would occur closer to the time of immigration as compared to 13.5 years later, the average amount of time adults in our sample had lived in the U.S.

8.1.2 ICD, depression, and alcohol use among adolescents

This study found that ICD was significantly associated with an increased risk for alcohol use among Vietnamese and Cambodian adolescents from immigrant families, a finding in line with previous studies of Hispanic immigrant families (Felix-Ortiz, Fernandez, & Newcomb, 1998; Martinez, 2006; Unger, Ritt-Olson, Wagner, Soto, & Baezconde-Garbanati, 2009). This association was significant even after controlling for several covariates including both adolescent and caregiver acculturation strategy. Similar to other research (Birman, 2006; Kim, Chen, Li, Huang, & Moon, 2009; Lau et al., 2005), this suggests that the magnitude of the ICD may be more important than the direction of the acculturation gap, or the types of individual acculturation strategies employed by the adolescent and caregiver.

The ICD-alcohol use relationship was at least partially mediated by depression, indicating a chain of events in which ICD leads to the development of depressive symptomatology in the adolescent which, in turn, leads to increased alcohol use perhaps as a coping mechanism to alleviate negative mood. This pathway is supported by

previous literature. Studies with Asian and Hispanic youth have found that family conflict is associated with ICD (Choi, He, & Harachi, 2008; Wang, Kviz, & Miller, 2012), which can lead to feelings of shame, guilt, and fear in adolescents (Cheng, Lin, & Cha, 2015). Furthermore, the loss of social and emotional support that would otherwise be provided by the parent is absent leading to feelings of helplessness and hopelessness (Kim et al., 2009). Studies have also found that depression among Asian American girls is associated with increased alcohol use (Cheng, Lee, & Iwamoto, 2012; Fang & Schinke, 2013; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Otsuki, 2003).

One additional manner through which ICD is thought to lead to increased family conflict is through a “dual frame of reference” (Baolian Qin, 2006; Wang et al., 2012). The adolescent compares the authoritarian parenting style of his or her own caregiver to the more authoritative style of his or her peer’s caregiver, leading to a clash within the family. Although this type of parenting may be associated with ICD and increased family conflict in some families, ironically it may actually be protective in others. It follows that a strict parenting style would lead to stringent rules regarding adolescent alcohol use. Indeed, only 15.9% of adolescents in our sample reported drinking, and 89% reported that their parents had very strict rules about using alcohol. Previous studies have found that rules were one of the strongest protective factors for using alcohol among adolescents (McKay, 2015). In cases where ICD is not leading to family conflict, it is possible then that authoritarian parenting style and strict alcohol rules among Asian families lead to reduced drinking among adolescents.

In addition to ICD, we also investigated the role of the individual adolescent acculturation strategy on alcohol use and depression. Previous studies of acculturation,

alcohol use, and depression have been limited by single-item proxy measures of acculturation and the findings across studies has been inconsistent (Gupta, Leong, Valentine, & Canada, 2013). We found that the largest proportion of adolescents reporting alcohol use (52%) also reported a marginalized acculturation strategy and that average depression scores were statistically significantly higher among those adolescents identifying as marginalized compared to assimilated, traditional, and bicultural groups. Research on this group is limited but two studies also found that marginalized Hispanic adolescents had an increased risk for substance and alcohol use (Carvajal, Hanson, Romero, & Coyle, 2002; Fosados et al., 2007). Notably, those with a bicultural identification had the lowest depression levels on average. In his conceptualization of the four acculturation strategies, Berry (1997) hypothesized that marginalized adolescents would face the most difficulty and bicultural individuals the least; our results appear to support this hypothesis.

8.2 Implications for future research

8.2.1 Measurement of alcohol use among Asian Americans

Our study found significant differences in alcohol use between Vietnamese and Cambodian adults. We also found differences across the nationalities in the following alcohol use correlates: trauma history, education level, employment status, religion, religiosity, and acculturation. Based on our findings and results of other studies finding similar differences across alcohol use and risk factors (e.g., Choi et al., 2008; Park et al., 2014; Rumbaut, 1996; Wang et al., 2012), we recommend that future research with Asian populations disaggregate groups by specific nationality where possible. Grouping them

together will continue to mask potentially significant differences in risk factors and health outcomes potentially leading to incorrect recommendations for specific Asian subgroups.

Our study found associations of acculturation and alcohol use among adults who drink alcohol but not among the overall sample that included non-drinkers. Studies of acculturation or other risk factors for alcohol use should therefore be conducted in samples that include both drinkers and non-drinkers, as well as among drinkers alone to replicate our findings. This may be especially important in populations with low overall alcohol use prevalence such as Vietnamese and Cambodian immigrants.

8.2.2 Measurement of acculturation

Our findings have implications for acculturation measurement in two areas. The first is with regard to unidimensional vs. multidimensional measurement of the acculturation construct. There is currently no consensus gold standard for measuring acculturation. Most studies continue to measure acculturation as a unidimensional construct with individuals becoming more “acculturated” over time, as they become more proficient in English, and gain U.S. citizenship. Common proxy measures include language proficiency and preference, length of time spent in the U.S., and nativity. Despite calls from many authors (e.g., Gupta et al., 2013; Schwartz, Unger, Zamboanga, & Szapocznik, 2010; Wang et al., 2012) to move away from these types of measures, they remain the most commonly used in the literature (Gupta et al., 2013).

These single-item measures are problematic because they make it impossible to distinguish whether the adoption of U.S. cultural practices is a risk/protective factor, the loss of traditional cultural practices is a risk/protective factor, or both (Schwartz et al., 2010). They assume that adoption of new cultural practices requires the forfeiture of

traditional cultural practice and they further assume that this process is inevitable. In other words, they fail to take into account the possibility of biculturalism or marginalization. Our study suggests that traditional cultural identification and U.S. cultural identification can be two independent dimensions that have differential impact on outcomes. We found that traditional and bicultural identification were both independently associated with alcohol use, but that assimilation was not—a distinction that would not have been possible using single-item proxy measures. This has clear implications for practice: instead of recommendations that immigrant families should be hesitant to adopt cultural practices of their new country, the findings imply that families may benefit from retaining key aspects of their traditional culture.

We therefore make the following recommendations with regard to unidimensional vs. multidimensional acculturation measurement. First, studies should consistently measure acculturation as the multidimensional construct we now know it to be. Assuming acculturation to be unidimensional is illogical for the reasons stated above and it also does not allow for the appropriate targeting of intervention strategies. Second, scales employed to measure acculturation should contain the ability to assess all four acculturation strategies described by Berry (1997): assimilation, traditionalism, biculturalism, and marginalization. Each of these four dimensions may have differential impacts on health outcomes. As such, the third recommendation is that studies cease from referring to individuals as being more or less “acculturated,” as the term is ambiguous in most cases, and in others refers to a unidimensional acculturation construct. Fourth, studies should discontinue the use of single-item proxy measures of acculturation. Not only do they often assume a unidimensional acculturation construct, but they also may be

associated with outcomes in different ways. In our study, for example, acculturation was associated with alcohol use but nativity, time spent in the U.S., and language were not. Many larger national surveys and studies do not include validated scales of acculturation and so it is understandable that these indicators have been used in the past. Investigating the association of these indicators with health outcomes does indeed have utility, but problems may arise if conclusions are drawn with regard to “acculturation.” Instead, it may be preferred to state the associations as they are (e.g., nativity is associated with the outcome) instead of generalizing the association to acculturation.

The second area of acculturation measurement for which our findings have implications is with the measurement of the marginalized acculturation strategy. This category has rarely been measured empirically in research studies in spite of the fact that Berry (1997) hypothesized that it would entail the most psychological difficulty. A review of acculturation measurement by Schwartz et al. (2010) argued that measurement of the marginalized strategy was questionable. The authors write that the likelihood of someone identifying as marginalized is low and cite studies that have found small numbers within marginalized categories (Schwartz & Zamboanga, 2008; Unger et al., 2002). The review further cites evidence that scales of marginalization have poor reliability (Unger et al., 2002), and that the choice of cut-offs to determine the four acculturation categories (including marginalization) are largely arbitrary.

Based on our findings we believe that the continued measurement of marginalization is important. First, among Vietnamese and Cambodian adolescents in our sample, marginalized was the largest overall acculturation strategy, accounting for 32% of the sample. Second, the scales used to measure marginalization were the same scales

used to measure all of the acculturation strategies, one for traditional cultural identification and one for U.S cultural identification. The scales had excellent ($\alpha=.84$) and good ($\alpha=.75$) reliability, respectively. Third, the cut-offs to determine acculturation strategies were not arbitrarily chosen (i.e., not by using the mean or median), but by *a priori* decisions based on Berry's conceptualization of the four acculturation strategies. Items on the two acculturation scales were on a Likert-type scale ranging from 1 (strongly disagree) to 4 (strongly agree). Those with an average score lower than 3 on both scales were considered marginalized. Therefore, on average, marginalized individuals disagreed or strongly disagreed with items on cultural identification of both Vietnamese/Cambodian and U.S. dimensions, as one might expect based on Berry's definitions.

In our study, youth who identified as marginalized were the most likely among the four acculturation strategies to use alcohol and the most likely to have more severe depressive symptomatology. These findings combined with the fact that there were more adolescents who felt marginalized than any other acculturation strategy suggest that this may be an at-risk group for mental health and alcohol use problems among Vietnamese and Cambodian youth from immigrant families. The results strongly suggest that researchers should continue measuring this group in future research studies.

The field of acculturation measurement is fluid and currently in a state of transition. In addition to the recommendations made above based on the findings of this dissertation, it is also important to note recent recommendations from other scholars. Despite our disagreement about the measurement of marginalization, there are a number of recommendations advocated by Schwartz et al. (2010) with which we agree. For

example, Berry's model has been criticized as a "one-size fits all" approach that does not account for variation in acculturation by ethnicity (Chirkov, 2009). Schwartz et al. (2010) suggests that not all of Berry's strategies may exist in every population or that variations or sub-categories might exist in others. It is necessary for acculturation scales to be validated for specific ethnic groups to avoid this one-size fits all approach and also to take into account other contextual factors associated with migration (i.e., voluntary vs. forced migration). These types of culture and content specific approaches would have greater relevance and applicability for the population under study (Chirkov, 2009). It is important in taking this approach, however, to use methodologically consistent approaches across populations and studies in order to facilitate comparisons.

We must also be cognizant, however, that standard measures of race and ethnicity will become increasingly tenuous as the U.S. becomes ever more diverse. As argued by Gee (2004), it is common in research to "group participants according to their self-reported ethnic group of primary identification" but that "we must also find new ways to allow for participants to have equally strong identifications to the multiple cultures, races, and ethnicities that contribute to the formation of their identities."

Schwartz et al. (2010) also call for additional longitudinal examinations of acculturation, few of which currently exist in the literature. Our study was a step in that direction even though we observed no variation by time in acculturation amongst our sample. Future studies should attempt to measure acculturation starting as soon after migration as possible, in order to establish a more natural baseline than we had available in this dissertation. Finally, we agree with the calls by many authors to disaggregate Asian subgroups in analyses of acculturation, as there are likely important differences

between nationalities (Gupta et al., 2013; Schwartz et al., 2010; Tajima & Harachi, 2010; Wang et al., 2012).

8.2.3 Measurement of ICD

Our study used a validated scale of ICD that measures the magnitude of dissonance between adolescent and caregiver by asking the adolescent how often he or she has disagreements with the caregiver over cultural-related items (Lee, Choe, Kim, & Ngo, 2000). Capturing the child's perception of ICD is critical because ICD may only be important in affecting child outcomes if the dissonance is recognized by the child and thought to be problematic (Unger et al., 2009). Our scale measure was limited, however, in that it only collected information about ICD from the child's perspective. We thus have no information from the caregiver about the extent of dissonance within the family.

The other primary method of measuring ICD is by calculating a difference score from individual acculturation measures of adolescent and caregiver. Recently, Kim et al. (2013) devised a method that improves upon the difference score technique by using acculturation levels of caregiver and adolescent to generate ICD scores through multilevel modeling. Although this approach is an advance statistically, it still lacks the *perception* of ICD by either the adolescent or caregiver. In that case, the way forward should attempt to combine the scale and multilevel approaches by measuring ICD separately among both adolescent and caregiver (as opposed to measuring acculturation separately) and then using multilevel modeling to calculate a composite score of ICD. Consistency of measurement across studies will be important, as studies have shown that different methods of ICD measurement can result in very different conclusions, even

amongst participants in the same study sample (Kim & Park, 2011; Lim, Yeh, Liang, Lau, & McCabe, 2008).

It is clearly important to continue measuring ICD in addition to acculturation among adolescents; in our study we found a much stronger effect of ICD on alcohol use relative to acculturation and alcohol. Previous studies have also suggested that ICD is a more appropriate measure among adolescents than individual acculturation strategy because it takes into account the familial context, which is critical in child development (Kim et al., 2009). Ideally, these types of measures would be used longitudinally throughout middle and high-school years, as ICD and alcohol use are likely to change over the course of adolescence (Unger et al., 2009).

8.2.4 Mediation analyses

Our findings suggest that the ICD-alcohol use relationship among Vietnamese and Cambodian adolescents was mediated by depression. The ICD-child outcome relationships described in the literature are complex and there are likely multiple pathways through which ICD may impact child well-being, however, most studies have not investigated mediators of these relationships (Kim et al., 2009). This is a limitation of the field because studies that have investigated mediational relationships have found that parenting practices (Allen et al., 2008; Kim et al., 2009, 2013), feelings of alienation among adolescents (Kim et al., 2013), family conflict (Choi et al., 2008) and parental bonding (Choi et al., 2008) were all significant mediators of ICD-child outcome pathways. Potential future pathways to investigate include caregiver involvement/monitoring and deviant peer relationships given previous research that has linked these variables to adolescent substance use, acculturation, and/or ICD (Hahm,

Lahiff, & Guterman, 2004; M. Lim et al., 2011; Y. Wang, Kim, Anderson, Chen, & Yan, 2012). Acculturative or bicultural stress may also be an important mediator to assess in future studies (Balcazar, Castro, & Krull, 1995). Future research on ICD should continue using longitudinal data to investigate the mechanisms involved in the ICD-child outcome relationships, as these mediators can often serve as possible intervention points.

8.3 Implications for interventions and clinical practice

8.3.1 Adult alcohol use interventions

Our study found that alcohol use levels were generally very low among the Vietnamese and Cambodian women in our sample. The large majority of the sample, 73%, reported no alcohol use at all during the five year study. Among those who did report any alcohol use, however, (n=81), the average AUDIT-C score was 2.8, which approaches the recommended AUDIT-C cut-off (3 or higher) for hazardous drinking among women. Furthermore, 40% of those who reported any alcohol use had an AUDIT-C score that was 3 or above. There is some previous research to suggest that certain cultures, such as Zambia, Malawi, and Pakistan, have an “all or nothing” trend in alcohol consumption (Clausen, Rossow, Naidoo, & Kowal, 2009; World Health Organization, 2011). This pattern entails a low overall prevalence of alcohol use with the majority of the population not drinking at all but high and potentially harmful consumption levels among a significant proportion of those that do drink. Although this pattern has not been systematically observed in Vietnamese or Cambodian cultures previously, and the results of our study bear replication, our findings suggest that it is possible that the prevalence of hazardous drinking may be high among those who do consume alcohol. Clinicians should

be aware of this possibility when asking patients about alcohol use and should avoid the stereotype that alcohol use problems are not prevalent among Asian Americans.

Similarly, clinicians should avoid thinking about and treating Asian Americans as a singular group. Our study found significant differences in drinking between Cambodians and Vietnamese, and the evidence that there are differences between Asian subgroups in drinking behavior is now clear (Iwamoto et al., 2010; Iwamoto et al., 2012; Le et al., 2009; Lum et al., 2009; Nishimura et al., 2005; Park et al., 2014; Price et al., 2002; Thai et al., 2010; Wong et al., 2007). Clinicians should therefore be cognizant of the fact that different Asian nationalities may have higher rates of alcohol use than others.

We found no impact of trauma exposure on either adult or adolescent alcohol use, similar to findings in previous studies with refugees (Salas-Wright & Vaughn, 2014) and Southeast Asian immigrants in particular (D'Amico, Schell, Marshall, & Hambarsoomians, 2007; Marshall, Schell, Elliott, Berthold, & Chun, 2005). Other studies, however, have found that there is a strong link between trauma and alcohol, in which drinking is a means of coping with negative mental states (Ezard, 2012; Fox, Rossetti, Burns, & Popovich, 2005; Luitel, Jordans, Murphy, Roberts, & McCambridge, 2013; Mollica et al., 1993; Povell, 2005). It is important for clinicians to continue taking trauma histories into account when assessing risk for alcohol use problems given the inconsistent findings. Finally, due to the differences in trauma exposure, acculturation, and alcohol use across Asian subgroups, it may also be the case that the effectiveness of interventions differs across groups as well. This should be a focus of future research.

Our findings suggest that biculturalism and traditional cultural identification are protective for high levels of alcohol use among those who do drink. Retention of

traditional cultural practices should therefore be encouraged among newly arrived immigrants to the U.S. (Schwartz et al., 2010). This could be conducted by both clinicians during regular healthcare visits and, among refugees, by case managers at resettlement agencies.

8.3.2 Adolescent alcohol use and depression interventions

Our study found that ICD was associated with alcohol use among Vietnamese and Cambodian adolescents from immigrant families through the development of depressive symptoms. We also found that adolescents who identified as marginalized comprised over half of all those who reported any alcohol use. Our findings, in addition to the consistent associations between ICD and several adverse child outcomes across studies, indicate the need for the development and testing of culturally-relevant interventions.

ICD is clearly associated with increased amounts of family conflict (Choi et al., 2008). In addition to the high degree of intra-family conflict, families experiencing ICD often have difficulty communicating (Unger et al., 2009). The communication breakdown leads to a perceived reduction in parental authority, less parent-child bonding, and reduced family cohesion (Choi et al., 2008; Unger et al., 2009). This can lead to increased desire and opportunity for adolescents to associate with deviate peers and, as a result, the risk for alcohol and substance use problems increases among the adolescents (Hahm et al., 2004; Lim et al., 2011; Unger et al., 2009). It can also lead to depressive symptoms in the child due to feelings of shame, guilt, helplessness, and hopelessness, followed by drinking to help alleviate negative mood (Cheng et al., 2015; Crane, Ngai, Larson, & Hafen, 2005; Fang et al., 2011; Kim et al., 2009).

Prevention efforts should therefore target the breakdown in family communication and parent-child bonding, before the onset of depressive symptoms or opportunity for substance and alcohol use risk to increase. This is particularly important because Asian youth might underreport depression symptoms (Gupta et al., 2013). The focus of the prevention efforts should be in teaching bicultural competence skills to all family members (Unger et al., 2009), with a goal of increasing understanding of each other's perspectives on cultural issues and improving parent-child communication (Bacallao & Smokowski, 2005; Santisteban, Suarez-Morales, Robbins, & Szapocznik, 2006). Bicultural training skills may also benefit children who are marginalized and feel alienated from both cultures. These prevention efforts should include multiple caregivers in the family. Although not measured in our study, previous research has found that fathers of children in immigrant families have a significant influence on the psychological well-being of the children (Kim et al., 2009). This is an important point to emphasize as the mother in Asian families is typically perceived as the "nurturer" (Kim & Wong, 2002).

Crane et al. (2005) recommend reframing the parent-child dissonance as an intercultural issue instead of an intergenerational one. This method of reframing and teaching bicultural skills developed by Szapocznik et al. (1984) is part of a bicultural effectiveness training (BET) program that has been successful among Hispanic populations. The evidence-base for these types of interventions in reducing cultural dissonance within Asian American families has not been established.

Interventions based on the BET principles, such as the Strengthening Intergenerational/ Intercultural Ties in Immigrant Families (SITIF), have been adapted

and designed for specific Asian groups (Ying, 1999, 2009; Ying & Han, 2007). SITIF focuses on the caregivers, given findings that parenting practice may be more modifiable than family conflict itself (Formoso, Gonzales, & Aiken, 2000). The intervention includes educating the parent on sources of ICD and teaches behavioral parenting skills that address communication issues to facilitate understanding between adolescent and caregiver (Ying, 2009). The intervention is taught in a classroom format (as opposed to a clinical therapy-type format) and in non-clinical settings such as schools to enhance acceptability, similar to recommendations by Crane et al. (2005). SITIF has been found to be effective among Chinese families in non-experimental designs (Ying, 2009). Rigorous evaluations of SITIF and similar interventions are needed in the form of randomized controlled trials with long-term follow-ups among specific Asian subgroups.

In addition to clinical health centers, prevention efforts could occur in natural settings, such as schools or community centers (Crane et al., 2005), as SITIF often does (Ying, 2009). For prevention programs, web-based modules may serve as a cost-effective option. A recently published randomized trial found that a 9-session online mother-daughter substance abuse prevention program for Asian American girls was effective in reducing substance and alcohol use risk among the girls with sustained effects at two years (Fang & Schinke, 2013). Authors of the web-based study noted that improvements to the online program would include cultural specifications for specific Asian subgroups, echoing calls from other researchers that interventions should be culture-specific due to cultural differences in parenting practices (Unger et al., 2009; Yasui & Dishion, 2007).

In addition to prevention efforts outlined above that address family conflict and communication issues, it is important to address interventions for those adolescents who have already developed depressive symptoms and or alcohol/substance use problems. First, clinicians must be prepared to address any language barriers, particularly among caregivers. Second, both assessment and treatment of mental health or substance use issues must be done bearing in mind the stigma associated with these types of problems among many Asian communities (Gee, 2004). Third, psychoeducation of caregivers is an important part of this process; if they are not engaged in the intervention or if they do not perceive it as being useful it is more likely they will cease treatment early. Gee et al. (2004) recommends that clinicians reframe the goal of the intervention as one targeted towards improving educational or vocational ability as this may be more culturally relevant or meaningful to caregivers in Asian American families. Finally, using technologies, including the use of social media such as Facebook and Twitter, could also be utilized to help raise awareness of mental health and substance use problems as well as help combat stigma, a critical barrier to service use among Asian populations (Africa, J. & Carrasco, 2011). The promotion of available services and encouragement to use those services could be particularly useful for adolescents who identify as marginalized and who may otherwise be less likely to know about or seek mental health services.

With a lack of evidence base for interventions among Asian American adolescents, it may also be useful to learn from literature among Native Americans. The most successful substance use prevention programs among this population have been those that address the dual nature of their lives: the traditional Native American culture they experience at home and the non-traditional culture they experience at school and

outside the home (LaFromboise, 1988; Schinke, Tepavac, & Cole, 2000). These interventions address bicultural stress and teach skills in helping Native American adolescents successfully navigate both cultures. Other aspects of the interventions include teaching life skills, such as problem solving and communication (Botvin, Schinke, & Orlandi, 1995; Schinke et al., 2000).

An intervention that included a basic life skills model with specific cultural modifications was tested among elementary school-aged Native American children (Schinke et al., 2000). The intervention included traditional Native American values and stories, and adolescents received education on traditional Native American beliefs and practices that were contrary to substance and alcohol abuse (Schinke et al., 2000). They then received skills training on handling peer pressure and situations where drug use was common. This included role-playing situations specific to Native American youth that were mentioned by the participants themselves. Results of the randomized trial found that those who received the program had alcohol use rates 24% lower than a control group at a 3.5 year follow-up (Schinke et al., 2000). This type of skills-based approach embedded within specific cultural context may prove to be effective among Asian American youth as well and warrants future investigation.

8.4 Limitations and strengths

8.4.1 Limitations

There were a number of limitations to the analyses presented in this dissertation that must be considered. First, data for the Cross Cultural Families project were collected exclusively from Vietnamese and Cambodian families in Washington State. Although the socioeconomic status of our participants was similar to Vietnamese and Cambodian

families in other parts of the country, we acknowledge that this was not a nationally representative sample and so generalizations to Vietnamese and Cambodians in other parts of the country must be made with caution. Data were self-report and subject to social desirability and interviewer bias. Interviewers were highly trained, however, and participants were allowed to complete sensitive portions of the assessments (including mental health and substance use questions) by themselves without the interviewer present to address a potential social desirability bias.

Although the study instrument allowed for the measurement of the marginalized acculturation strategy among the adolescents, the adult assessment did not allow for this and so we only had measures for three acculturation strategies among the adult caregivers. This is a limitation given the adolescent analysis results which suggested that marginalization was associated with alcohol use and depression.

Our measure of ICD improved upon previous reports by using a scale that assessed the adolescent's perception of the dissonance. It did not include, however, parental report of ICD, a limitation of the study. Future research should attempt to include reports from both parent and child in addition to gaining information on the perception of ICD from both as discussed in the measurement section of this chapter.

Our measure of depression was not previously validated for use with Vietnamese and Cambodian adolescents. This is a limitation given the recent meta-analysis by Gupta et al. (2013), which suggested that depression measures may not completely encapsulate depressive symptoms among Asian Americans.

The longitudinal nature of the CCF data is a strength but ICD was only captured at two waves. Future research should attempt to measure ICD throughout the middle and

high school years as these variables are likely to be dynamic over that time period (Unger et al., 2009). Among adults, longitudinal data would be more useful soon after immigration providing a more natural baseline assessment than we had in this study where participants had been living in the U.S. for an average of 13.5 years at wave 1.

Finally, although our study had a larger sample size than many previous studies of acculturation and alcohol use, we nevertheless had limited power to test for moderators of these relationships. Our moderation analyses described in Chapters 5 and 6 should therefore be considered exploratory. Future studies should attempt to replicate these findings with larger samples.

8.4.2 Strengths and public health significance

In spite of these limitations, the dissertation had several strengths that contribute to its public health significance. The studies described in the dissertation have addressed significant gaps in the literature. According to the World Health Organization, in high income countries, depressive disorders are the number one cause of burden of disease and alcohol use disorders are the fifth (World Health Organization, 2008). Asian Americans are the fastest growing racial population in the U.S., but there is a dearth of research identifying factors associated with alcohol use among this population generally (Cheng et al., 2012) and specifically among sub-groups of the larger Asian American population.

Investigation of the association between acculturation and alcohol use is useful in targeting intervention strategies to particular problems and particular populations.

Previous research in this area, however, has been limited by focusing on Asian Americans in aggregate (i.e. not specifying Asian sub-groups), by using unidimensional single-item proxy measures of acculturation such as language and time in the U.S., and

by employing cross-sectional study designs (Wang et al., 2012; Ying & Han, 2007). Our study has improved upon this work and fills gaps in the literature by: (1) utilizing validated, two-dimensional scales of acculturation with reports from both caregivers and adolescents; (2) employing a longitudinal design; (3) focusing on two specific Asian American nationalities (Cambodian and Vietnamese-Americans); and (4) investigating the complex relationships of acculturation, ICD, depression, and alcohol use through multiple statistical methods, including mediational models. Researchers have called for more rigorous investigation of the role of mediators in the relationship between acculturation and child outcomes (Hahm et al., 2004; Lim et al., 2011; Suinn, 2010), something the current study was able to do given its longitudinal design and analysis strategy.

The findings have the potential to inform the design of targeted interventions and has relevance for researchers, public health practitioners, clinicians, and teachers. Implications for prevention and intervention strategies have been outlined in the preceding sections of this chapter. Hahm et al. (2004) has noted that investigation into the role of acculturation on health and behaviors among Asian American youth could result in "models for preventive intervention that are more comprehensive, culturally sensitive, and responsible." The findings of this dissertation will have implications for both future immigrant families as well as the millions of immigrant Vietnamese-American and Cambodian-American families already in the U.S., as it has been demonstrated that negative outcomes associated with ICD can persist into the child's adulthood (Hannum & Dvorak, 2004).

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Appendix A. Study Instruments

Table A.1 List of study instruments

Source / Measure Name (Scale)	Reporter	Item	Response Options	Y 1	Y 2	Y 3	Y 4	Y 5
Caregiver Acculturation								
Suinn et al. (1992)/Suinn-Lew Asian self identity acculturation scale	Caregiver	Whom do you now associate with in the community?	1 "Almost exclusively Asians or Asian Americans" 2 "Mostly Asians or Asian Americans" 3 "About = Asian and non Asian groups" 4 "Mostly other non-Asian ethnic groups" 5 "Almost exclusively non-Asian ethnic groups" 6 "ref" 7 "dk"	x	x	x	x	x
Suinn et al. (1992)/Suinn-Lew Asian self identity acculturation scale	Caregiver	If you could pick, whom would you prefer to associate with in the community?	1 "Almost exclusively Asians or Asian Americans" 2 "Mostly Asians or Asian Americans" 3 "About = Asian and non Asian groups" 4 "Mostly other non-Asian ethnic groups" 5 "Almost exclusively non-Asian ethnic groups" 6 "ref" 7 "dk"	x	x	x	x	x
Suinn et al. (1992)/Suinn-Lew Asian self identity acculturation scale	Caregiver	What is your food preference at home?	1 "Exclusively (Vietnamese/Cambodian) food" 2 "Mostly (Vietnamese/Cambodian) food, some American or non-Asian food" 3 "About equally (Vietnamese/Cambodian) food and American or non-Asian food" 4 "Mostly American food or non-Asian food" 5 "Exclusively American or non-Asian food" 6 "ref" 7 "dk"	x	x	x	x	x
Suinn et al. (1992)/Suinn-Lew Asian self identity acculturation scale	Caregiver	What is your food preference <u>in restaurants</u> ?	1 "Exclusively (Vietnamese/Cambodian) food" 2 "Mostly (Vietnamese/Cambodian) food, some American or non-Asian food" 3 "About equally (Vietnamese/Cambodian) food and American or non-Asian food" 4 "Mostly American food or non-Asian food" 5 "Exclusively American food or non-Asian food" 6 "ref" 7 "dk"	x	x	x	x	x
Suinn et al. (1992)/Suinn-Lew Asian self identity acculturation scale	Caregiver	What is your music preference?	1 "Exclusively (Vietnamese/Cambodian) music" 2 "Mostly (Vietnamese/Cambodian) music, some American or non-Asian music" 3 "About equally (Vietnamese/Cambodian) music and American or non-Asian music" 4 "Mostly American music or non-Asian music" 5 "Exclusively American music or non-Asian music" 6 "ref" 7 "dk"	x	x	x	x	x
Suinn et al. (1992)/Suinn-Lew Asian self identity acculturation scale	Caregiver	What is your movie preference?	1 "Exclusively (Vietnamese/Cambodian) language movies" 2 "Mostly (Vietnamese/Cambodian) language movies, some American or non-Asian language movies" 3 "About equally (Vietnamese/Cambodian) language movies and American or non-Asian language movies" 4 "Mostly American language movies or non-Asian" 5 "Exclusively American language	x	x	x	x	x

			movies or non-Asian language movies" 6 "ref" 7 "dk"						
Suinn et al. (1992)/Suinn-Lew Asian self identity acculturation scale	Caregiver	Do you:	1 "Read only (Vietnamese/Khmer) language" 2 "Read (Vietnamese/Khmer) language better than English" 3 "Read both (Vietnamese/Khmer) and English equally well" 4 "Read English better than (Vietnamese/Khmer)" 5 "Read only English" 88 "Don't read" 66 "ref" 77 "dk"	x	x	x	x	x	
Suinn et al. (1992)/Suinn-Lew Asian self identity acculturation scale	Caregiver	Do you:	1 "Write only (Vietnamese/Khmer)"lang 2 "Write (Vietnamese/Khmer) better than English" 3 "Write both (Vietnamese/Khmer) and English equally well" 4 "Write English better than (Vietnamese/Khmer)" 5 "Write only English" 88 "Don't write" 66 "ref" 77 "dk"	x	x	x	x	x	
Caregiver Exposure to Trauma									
HTQ - Trauma Events	Caregiver	Please indicate if you have witnessed, experienced or hear of any of the following events...Lack of food or water	1 "Not at all" 2 "A little" 3 "Quite a bit" 4 "Extremely" 6 "Ref" 7 "DK"						x
HTQ - Trauma Events	Caregiver	Please indicate if you have witnessed, experienced or hear of any of the following events ...Ill health without access to medical care	1 "Not at all" 2 "A little" 3 "Quite a bit" 4 "Extremely" 6 "Ref" 7 "DK"						x
HTQ - Trauma Events	Caregiver	Please indicate if you have witnessed, experienced or hear of any of the following events ...Lack of shelter	1 "Not at all" 2 "A little" 3 "Quite a bit" 4 "Extremely" 6 "Ref" 7 "DK"						x
HTQ - Trauma Events	Caregiver	Please indicate if you have witnessed, experienced or hear of any of the following events ...Imprisonment	1 "Not at all" 2 "A little" 3 "Quite a bit" 4 "Extremely" 6 "Ref" 7 "DK"						x
HTQ - Trauma Events	Caregiver	Please indicate if you have witnessed, experienced or hear of any of the following events ...Serious Injury	1 "Not at all" 2 "A little" 3 "Quite a bit" 4 "Extremely" 6 "Ref" 7 "DK"						x
HTQ - Trauma Events	Caregiver	Please indicate if you have witnessed, experienced or hear of any of the following events ...Combat Situation	1 "Not at all" 2 "A little" 3 "Quite a bit" 4 "Extremely" 6 "Ref" 7 "DK"						x

HTQ - Trauma Events	Caregiver	Please indicate if you have witnessed, experienced or hear of any of the following events ...Force you to change the way you think.	1 "Not at all" 2 "A little" 3 "Quite a bit" 4 "Extremely" 6 "Ref" 7 "DK"							x
HTQ - Trauma Events	Caregiver	Please indicate if you have witnessed, experienced or hear of any of the following events ...Rape or sexual abuse	1 "Not at all" 2 "A little" 3 "Quite a bit" 4 "Extremely" 6 "Ref" 7 "DK"							x
HTQ - Trauma Events	Caregiver	Please indicate if you have witnessed, experienced or hear of any of the following events ...enforced isolation from others	1 "Not at all" 2 "A little" 3 "Quite a bit" 4 "Extremely" 6 "Ref" 7 "DK"							x
HTQ - Trauma Events	Caregiver	Please indicate if you have witnessed, experienced or hear of any of the following events ...Being close to death	1 "Not at all" 2 "A little" 3 "Quite a bit" 4 "Extremely" 6 "Ref" 7 "DK"							x
HTQ - Trauma Events	Caregiver	Please indicate if you have witnessed, experienced or hear of any of the following events ...Forced separation from Family Members	1 "Not at all" 2 "A little" 3 "Quite a bit" 4 "Extremely" 6 "Ref" 7 "DK"							x
HTQ - Trauma Events	Caregiver	Please indicate if you have witnessed, experienced or hear of any of the following events ...Murder of Family or Friend	1 "Not at all" 2 "A little" 3 "Quite a bit" 4 "Extremely" 6 "Ref" 7 "DK"							x
HTQ - Trauma Events	Caregiver	Please indicate if you have witnessed, experienced or hear of any of the following events ...Murder of Stranger or Strangers	1 "Not at all" 2 "A little" 3 "Quite a bit" 4 "Extremely" 6 "Ref" 7 "DK"							x
HTQ - Trauma Events	Caregiver	Please indicate if you have witnessed, experienced or hear of any of the following events ...Lost or Kidnapped	1 "Not at all" 2 "A little" 3 "Quite a bit" 4 "Extremely" 6 "Ref" 7 "DK"							x
HTQ - Trauma Events	Caregiver	Please indicate if you have witnessed, experienced or hear of any of the following events ...Torture	1 "Not at all" 2 "A little" 3 "Quite a bit" 4 "Extremely" 6 "Ref" 7 "DK"							x
Exposure to Community Violence										
Aisenberg, E. (2002). Assessment of Adolescent's Exposure to Community Violence— Caregiver report (ACECV-PR).	Caregiver/Adolescent	Have you ever robbed?	1 "Yes" 2 "No" 6 "Ref" 7 "DK"							x

Aisenberg, E. (2002). Assessment of Adolescent's Exposure to Community Violence— Caregiver report (ACECV-PR).	Caregiver/Adolescent	Have you ever seen a person rob another person?	1 "Yes" 2 "No" 6 "Ref" 7 "DK"							x
Aisenberg, E. (2002). Assessment of Adolescent's Exposure to Community Violence— Caregiver report (ACECV-PR).	Caregiver/Adolescent	Have you ever been beaten up by someone without a weapon?	1 "Yes" 2 "No" 6 "Ref" 7 "DK"							x
Aisenberg, E. (2002). Assessment of Adolescent's Exposure to Community Violence— Caregiver report (ACECV-PR).	Caregiver/Adolescent	Have you ever seen a person beat up by someone without a weapon?	1 "Yes" 2 "No" 6 "Ref" 7 "DK"							x
Aisenberg, E. (2002). Assessment of Adolescent's Exposure to Community Violence— Caregiver report (ACECV-PR).	Caregiver/Adolescent	Have you ever been beaten up by someone with a weapon (gun, knife, stick, or other hard object)?	1 "Yes" 2 "No" 6 "Ref" 7 "DK"							x
Aisenberg, E. (2002). Assessment of Adolescent's Exposure to Community Violence— Caregiver report (ACECV-PR).	Caregiver/Adolescent	Have you ever seen a person beat up by someone with a weapon (gun, knife, stick, or other hard object)?	1 "Yes" 2 "No" 6 "Ref" 7 "DK"							x
Aisenberg, E. (2002). Assessment of Adolescent's Exposure to Community Violence— Caregiver report (ACECV-PR).	Caregiver/Adolescent	Has someone ever threatened to beat you up?	1 "Yes" 2 "No" 6 "Ref" 7 "DK"							x
Aisenberg, E. (2002). Assessment of Adolescent's Exposure to Community Violence— Caregiver report (ACECV-PR).	Caregiver/Adolescent	Have you ever seen someone threaten to beat up someone?	1 "Yes" 2 "No" 6 "Ref" 7 "DK"							x

Aisenberg, E. (2002). Assessment of Adolescent's Exposure to Community Violence— Caregiver report (ACECV-PR).	Caregiver/Adolescent	Have you ever been chased by a dangerous person or people, either on foot, in a car, bike, or other vehicle?	1 "Yes" 2 "No" 6 "Ref" 7 "DK"							x
Aisenberg, E. (2002). Assessment of Adolescent's Exposure to Community Violence— Caregiver report (ACECV-PR).	Caregiver/Adolescent	Have you ever seen a dangerous person or people chasing someone, either on foot, in a car, bike, or other vehicle?	1 "Yes" 2 "No" 6 "Ref" 7 "DK"							x
Aisenberg, E. (2002). Assessment of Adolescent's Exposure to Community Violence— Caregiver report (ACECV-PR).	Caregiver/Adolescent	Have you ever been choked or strangled?	1 "Yes" 2 "No" 6 "Ref" 7 "DK"							x
Aisenberg, E. (2002). Assessment of Adolescent's Exposure to Community Violence— Caregiver report (ACECV-PR).	Caregiver/Adolescent	Have you ever seen someone choked or strangled?	1 "Yes" 2 "No" 6 "Ref" 7 "DK"							x
Aisenberg, E. (2002). Assessment of Adolescent's Exposure to Community Violence— Caregiver report (ACECV-PR).	Caregiver/Adolescent	Have you ever been shot at?	1 "Yes" 2 "No" 6 "Ref" 7 "DK"							x
Aisenberg, E. (2002). Assessment of Adolescent's Exposure to Community Violence— Caregiver report (ACECV-PR).	Caregiver/Adolescent	Have you ever seen someone being shot at?	1 "Yes" 2 "No" 6 "Ref" 7 "DK"							x
Aisenberg, E. (2002). Assessment of Adolescent's Exposure to Community Violence— Caregiver report (ACECV-PR).	Caregiver/Adolescent	Have you ever seen someone murdered?	1 "Yes" 2 "No" 6 "Ref" 7 "DK"							x

Intergenerational Cultural Dissonance							
Lee et al. (2000) Asain American Family Conflict Scale	Adolescent	How likely is this type of situation to occur in your family...Your Caregivers tell you what to do with your life but you want to make your own decisions.	1 "Never" 2 "Seldom" 3 "Sometimes" 4 "Often" 5 "Almost always" 6 "ref" 7 "dk"				x x
Lee et al. (2000) Asain American Family Conflict Scale	Adolescent	How likely is this type of situation to occur in your family...Your Caregivers tell you that a social life is not important at this age, but you think it is.	1 "Never" 2 "Seldom" 3 "Sometimes" 4 "Often" 5 "Almost always" 6 "ref" 7 "dk"				x x
Lee et al. (2000) Asain American Family Conflict Scale	Adolescent	How likely is this type of situation to occur in your family... You have done well in school, but your Caregiver's academic expectations exceed your performance.	1 "Never" 2 "Seldom" 3 "Sometimes" 4 "Often" 5 "Almost always" 6 "ref" 7 "dk"				x x
Lee et al. (2000) Asain American Family Conflict Scale	Adolescent	How likely is this type of situation to occur in your family...Your Caregivers want you to sacrifice personal interests for the sake of the family, but you feel this is unfair.	1 "Never" 2 "Seldom" 3 "Sometimes" 4 "Often" 5 "Almost always" 6 "ref" 7 "dk"				x x
Lee et al. (2000) Asain American Family Conflict Scale	Adolescent	How likely is this type of situation to occur in your family...Your Caregivers always compare you to others, but you want them to accept you for being yourself.	1 "Never" 2 "Seldom" 3 "Sometimes" 4 "Often" 5 "Almost always" 6 "ref" 7 "dk"				x x
Lee et al. (2000) Asain American Family Conflict Scale	Adolescent	How likely is this type of situation to occur in your family...Your Caregivers argue that they show you love by housing, feeding, and educating, but you wish they would show more physical and verbal signs of affection.	1 "Never" 2 "Seldom" 3 "Sometimes" 4 "Often" 5 "Almost always" 6 "ref" 7 "dk"				x x
Lee et al. (2000) Asain American Family Conflict Scale	Adolescent	How likely is this type of situation to occur in your family...Your Caregivers don't want to bring shame upon the family, but you feel that your Caregivers are too concerned with saving face.	1 "Never" 2 "Seldom" 3 "Sometimes" 4 "Often" 5 "Almost always" 6 "ref" 7 "dk"				x x
Lee et al. (2000) Asain American Family Conflict Scale	Adolescent	How likely is this type of situation to occur in your family...Your Caregivers expect you to behave like a proper Asian male or female, but you feel your Caregivers are being too traditional.	1 "Never" 2 "Seldom" 3 "Sometimes" 4 "Often" 5 "Almost always" 6 "ref" 7 "dk"				x x
Lee et al. (2000) Asain American Family Conflict Scale	Adolescent	How likely is this type of situation to occur in your family...You want to state your opinion, but your Caregivers consider it disrespectful to talk back.	1 "Never" 2 "Seldom" 3 "Sometimes" 4 "Often" 5 "Almost always" 6 "ref" 7 "dk"				x x

Lee et al. (2000) Asain Americian Family Conflict Scale	Adolescent	How likely is this type of situation to occur in your family...Your Caregivers demand that you always show respect for elders, but you believe in showing respect only if they deserve it.	1 "Never" 2 "Seldom" 3 "Sometimes" 4 "Often" 5 "Almost always" 6 "ref" 7 "dk"						x	x
Adolescent Depression										
Angold et al. (1995) / Adolescentren's Depression Inventory / Depression	Adolescent	In the past two weeks, I didn't enjoy anything at all.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"	x	x	x	x	x	x	x
Angold et al. (1995) / Adolescentren's Depression Inventory / Depression	Adolescent	In the past two weeks, I was very restless.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"	x	x	x	x	x	x	x
Angold et al. (1995) / Adolescentren's Depression Inventory / Depression	Adolescent	In the past two weeks, I cried a lot.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"	x	x	x	x	x	x	x
Angold et al. (1995) / Adolescentren's Depression Inventory / Depression	Adolescent	In the past two weeks, I found it hard to think properly or concentrate.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"	x	x	x	x	x	x	x
Angold et al. (1995) / Adolescentren's Depression Inventory / Depression	Adolescent	In the past two weeks, I hated myself.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"	x	x	x	x	x	x	x
Angold et al. (1995) / Adolescentren's Depression Inventory / Depression	Adolescent	In the past two weeks, I thought nobody really loved me.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"	x	x	x	x	x	x	x
Angold et al. (1995) / Adolescentren's Depression Inventory / Depression	Adolescent	In the past two weeks, I thought I could never be as good as other kids.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"	x	x	x	x	x	x	x
Angold et al. (1995) / Adolescentren's Depression Inventory / Depression	Adolescent	In the past two weeks, I felt I did everything wrong.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"	x	x	x	x	x	x	x
Angold et al. (1995) / Adolescentren's Depression Inventory / Depression	Adolescent	In the past two weeks, I felt lonely.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"	x	x	x	x	x	x	x
Angold et al. (1995) / Adolescentren's Depression Inventory / Depression	Adolescent	In the past two weeks, I felt I was a bad person.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"	x	x	x	x	x	x	x

Angold et al. (1995) / Adolescentren's Depression Inventory / Depression	Adolescent	In the past two weeks, I felt so tired I just sat around and did nothing.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"	x	x	x	x	x
Angold et al. (1995) / Adolescentren's Depression Inventory / Depression	Adolescent	In the past two weeks, I felt I wasn't good any more.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"	x	x	x	x	x
Angold et al. (1995) / Adolescentren's Depression Inventory / Depression	Adolescent	In the past two weeks, I felt miserable or unhappy.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"	x	x	x	x	x
H.H. Nguyen and Eve. 2002 / Acculturation scale for Vietnamese Adolescents	Adolescent	It is okay to question Caregivers' authority, judgment, or decisions.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"			x	x	x
Adolescent Acculturation								
Portes and Rumbaut (2001) Adolescentren of Immigrants Longitudinal Study / Youth Adaptation and Growth Questionnaire	Adolescent	How often do people in your home speak (Vietnamese/Khmer)?	1 "Never" 2 "Seldom" 3 "Sometimes" 4 "Often" 5 "Almost always" 6 "ref" 7 "dk"				x	x
Portes and Rumbaut (2001) Adolescentren of Immigrants Longitudinal Study / Youth Adaptation and Growth Questionnaire	Adolescent	How well do you speak (Vietnamese/Khmer)?	1 "Not at all" 2 "Very little" 3 "Not well" 4 "Well" 5 "Very well" 6 "Ref" 7 "DK"				x	
Portes and Rumbaut (2001) Adolescentren of Immigrants Longitudinal Study / Youth Adaptation and Growth Questionnaire	Adolescent	How well do you understand (Vietnamese/Khmer) when others are speaking it?	1 "Not at all" 2 "Very little" 3 "Not well" 4 "Well" 5 "Very well" 6 "Ref" 7 "DK"				x	
Portes and Rumbaut (2001) Adolescentren of Immigrants Longitudinal Study / Youth Adaptation and Growth Questionnaire	Adolescent	How well do you read (Vietnamese/Khmer)?	1 "Not at all" 2 "Very little" 3 "Not well" 4 "Well" 5 "Very well" 6 "Ref" 7 "DK"				x	

H.H. Nguyen and Eve. 2002 / Acculturation scale for Vietnamese Adolescents	Adolescent	Family matters should be handled democratically- where kids can have a say.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"				x	x	x
H.H. Nguyen and Eve. 2002 / Acculturation scale for Vietnamese Adolescents	Adolescent	When a boy or girl reaches 16, it is all right for him/her to date.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"				x	x	x
H.H. Nguyen and Eve. 2002 / Acculturation scale for Vietnamese Adolescents	Adolescent	Girls over 18 should be allowed to move away from home and go to college or take a job.	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"				x	x	x
H.H. Nguyen and Eve. 2002 / Acculturation scale for Vietnamese Adolescents	Adolescent	It is okay to question parents' authority, judgment, or decisions	1 "YES!" 2 "yes" 3 "no" 4 "NO!" 6 "ref" 7 "dk"				x	x	x
Tsai et al. (2000) General Ethnicity Questionnaire	Adolescent	I was raised in a way that was (Vietnamese/Cambodian)	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Tsai et al. (2000) General Ethnicity Questionnaire	Adolescent	I am embarrassed/ashamed of (Vietnamese/Cambodian) culture.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Tsai et al. (2000) General Ethnicity Questionnaire	Adolescent	(Vietnamese/Cambodian) culture has a positive impact on my life.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Tsai et al. (2000) General Ethnicity Questionnaire	Adolescent	I am familiar with (Vietnamese/Cambodian) cultural practices and customs.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Tsai et al. (2000) General Ethnicity Questionnaire	Adolescent	I relate to my boyfriend or girlfriend in a way that is (Vietnamese/Cambodian)	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Tsai et al. (2000) General Ethnicity Questionnaire	Adolescent	I admire people that are (Vietnamese/Cambodian)	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Tsai et al. (2000) General Ethnicity Questionnaire	Adolescent	I want to be accepted by (Vietnamese/Cambodians).	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Tsai et al. (2000) General Ethnicity Questionnaire	Adolescent	The people I date are (Vietnamese/Cambodian)	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Tsai et al. (2000) General Ethnicity Questionnaire	Adolescent	I was raised in a way that was American.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x

Tsai et al. (2000) General Ethnicity Questionnaire	Adolescent	I am embarrassed/ashamed of American culture.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Tsai et al. (2000) General Ethnicity Questionnaire	Adolescent	American culture has a positive impact on my life.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Tsai et al. (2000) General Ethnicity Questionnaire	Adolescent	I am familiar with American cultural practices and customs.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Tsai et al. (2000) General Ethnicity Questionnaire	Adolescent	I admire people that are American.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Tsai et al. (2000) General Ethnicity Questionnaire	Adolescent	I want to be accepted by Americans.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Tsai et al. (2000) General Ethnicity Questionnaire	Adolescent	The people I date are American.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Phinney (1992) / The multigroup ethnic identity measure	Adolescent	I have spent time trying to find out more about my own ethnic group, such as its history, traditions, and customs.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Phinney (1992) / The multigroup ethnic identity measure	Adolescent	I am active in organizations or social groups that include mostly members of my own ethnic group.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Phinney (1992) / The multigroup ethnic identity measure	Adolescent	I have a clear sense of my ethnic background and what it means for me.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Phinney (1992) / The multigroup ethnic identity measure	Adolescent	I like meeting and getting to know people from ethnic groups other than my own.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Phinney (1992) / The multigroup ethnic identity measure	Adolescent	I am happy that I am a member of the group that I belong to.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Phinney (1992) / The multigroup ethnic identity measure	Adolescent	I often spend time with people from ethnic groups other than my own.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Phinney (1992) / The multigroup ethnic identity measure	Adolescent	I really have not spent much time trying to learn more about the culture and history of my ethnic group.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x
Phinney (1992) / The multigroup ethnic identity measure	Adolescent	I have a strong sense of belonging to my own ethnic group	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"					x	x

Phinney (1992) / The multigroup ethnic identity measure	Adolescent	I have a lot of pride in my ethnic group and its accomplishments.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"				x	x	x
Phinney (1992) / The multigroup ethnic identity measure	Adolescent	I don't try to become friends with people from other ethnic groups.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"				x	x	x
Phinney (1992) / The multigroup ethnic identity measure	Adolescent	I feel a strong attachment towards my own ethnic group.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"				x	x	x
Phinney (1992) / The multigroup ethnic identity measure	Adolescent	I participate in cultural practices of my own group, such as special food, music, or customs.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"				x	x	x
Phinney (1992) / The multigroup ethnic identity measure	Adolescent	I am involved in activities with people from other ethnic groups.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"				x	x	x
Phinney (1992) / The multigroup ethnic identity measure	Adolescent	I enjoy being around people from ethnic groups other than my own.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"				x	x	x
Phinney (1992) / The multigroup ethnic identity measure	Adolescent	I feel good about my cultural background.	1 "Strongly disagree" 2 "Disagree" 3 "Agree" 4 "Strongly agree" 6 "ref" 7 "dk"				x	x	x

Appendix B. Comparison of baseline characteristics stratified by alcohol use

Table B.1 Baseline characteristics of study sample stratified by alcohol use status (n=302)

	Total Sample (n=302) ^a	No alcohol (n=221) ^a	Alcohol use (n=81) ^a	<i>t</i> / χ^2	<i>p</i>
	mean (SD)				
Age	41.77 (7.03)	42.44 (7.11)	39.91 (6.46)	2.76	<.01
Number of years in the U.S.	13.56 (5.22)	12.72 (5.35)	15.92 (3.99)	-4.83	<.0001
Number of trauma types experienced	4.11 (4.25)	3.33 (3.96)	6.28 (4.28)	-5.38	<.0001
Exposure to community violence	0.63 (1.45)	0.56 (1.36)	0.82 (1.65)	-1.35	.18
Income score	2.20 (1.40)	2.20 (1.37)	2.19 (1.47)	0.03	.97
	n (%)				
Ethnicity					
Cambodian	147 (48.6)	79 (35.8)	68 (84.0)	55.13	<.0001
Vietnamese	155 (51.3)	142 (64.3)	13 (16.0)		
Education					
Grade school	60 (23.9)	45 (23.4)	15 (25.4)		
8 th grade or less	52 (20.7)	39 (20.3)	13 (22.0)	1.28	.86
Some high school	62 (24.7)	47 (24.5)	15 (25.4)		
High school graduate	45 (17.9)	34 (17.7)	11 (18.6)		
Some college or higher	32 (12.8)	27 (14.1)	5 (8.5)		
Currently employed					
Yes	202 (69.4)	151 (70.6)	51 (66.2)	0.50	.48
No	89 (30.6)	63 (29.4)	26 (33.8)		
Marital status					
Single/never married	42 (14.2)	26 (11.9)	16 (20.5)		
Married	186 (62.8)	149 (68.4)	37 (47.4)	12.98	.01
Widowed	23 (7.8)	12 (5.5)	11 (14.1)		
Separated	16 (5.4)	11 (5.1)	5 (6.4)		
Divorced	29 (9.8)	20 (9.2)	9 (11.5)		
Religion					
Buddhism	198 (67.4)	132 (61.1)	66 (84.6)		
Christianity	73 (24.8)	65 (30.1)	8 (10.3)	15.82	<.01
Other	12 (4.1)	11 (5.1)	1 (1.3)		
No affiliation	11 (3.7)	8 (3.7)	3 (3.9)		
Importance of religion in life					
Extremely important	82 (28.0)	60 (27.8)	22 (28.6)		
Very important	102 (34.8)	76 (35.2)	26 (33.8)	1.90	.76
Somewhat important	87 (29.7)	62 (28.7)	25 (32.5)		
Somewhat important	18 (6.1)	14 (6.5)	4 (5.2)		
Not very important	4 (1.4)	4 (1.9)	0 (0.0)		
Not at all important					
Preferred language					
Vietnamese	148 (50.7)	136 (64.0)	12 (15.8)	51.66	<.0001
Khmer	139 (47.6)	76 (35.2)	63 (82.9)		
English	5 (1.7)	4 (1.9)	1 (1.3)		
Time spent in transition camp					
Yes	206 (73.3)	138 (66.7)	68 (91.9)	17.73	<.0001
No	75 (26.7)	69 (33.3)	6 (8.1)		
Refugee status upon arrival in U.S.	261 (92.9)	193 (92.8)	68 (93.2)	0.01	.92

Legal refugee	20 (7.1)	15 (7.2)	5 (6.9)		
Registered alien (green card)					
Citizenship status					
Registered alien	118 (41.8)	82 (39.2)	36 (49.3)	3.05	.22
Citizen	162 (57.5)	126 (60.3)	36 (49.3)		
Other	2 (0.7)	1 (0.45)	1 (1.4)		

Appendix C. Acculturation and adolescent alcohol use

This appendix discusses the association of acculturation and alcohol use as presented in Table 6.6. Among the acculturation strategies, biculturalism was statistically significantly associated with lower odds of alcohol use than traditionalism in the unadjusted model, although this effect attenuated somewhat in the adjusted model. The increased risk associated with a traditional cultural orientation and the lack of risk associated with assimilation were surprising and contrary to previous studies with Asian youth (Wang et al., 2012).

Our model tested the effects of baseline acculturation on alcohol use one year later. Among those who were considered traditional at baseline and reported alcohol at the follow-up, 83.3% had a change in their acculturation category at follow-up as well (41.7% changed to marginalized, 25.0% to assimilated, and 16.7% to bicultural). Among those who were traditional at baseline, there was also a significant increase in U.S. cultural identification by follow-up ($p < .0001$) and a significant reduction in traditional cultural identification by follow-up ($p < .01$) (Table C.1). It is possible, then, that these adolescents were no longer truly traditionally culturally oriented when they initiated drinking. In fact, the unexpected findings from the acculturation variable could potentially be due to a mediational relationship in which changes in acculturation lead to increases in ICD, which in turn impacts alcohol use. This may partially explain the attenuation of the acculturation variable in the adjusted model that included ICD. Future studies with longer follow-up periods should attempt to measure a potential mediational relationship.

Our findings do suggest that those who identify as marginalized may be a higher risk group for alcohol use. The largest proportion of drinkers in our sample at both waves were those in the marginalized category (Table 6.4). Furthermore, over 40% of those who identified as traditional at baseline and reported drinking at follow-up had switched to the marginalized category by follow-up. Previous studies have found that marginalization is associated with the greatest amount of stress among the four acculturation categories (Berry, 2005), and those identifying as marginalized have been found to have an increased risk for alcohol and substance problems (Carvajal, Hanson, Romero, & Coyle, 2002; Fosados et al., 2007). Additional research is needed on this group as few studies among Asian Americans have included measures of marginalization.

Table C.1 Change in intergenerational cultural dissonance (ICD) and acculturation from baseline to follow-up among those who were traditional at baseline (n=47)

	Mean (SD) Wave 4	Mean (SD) Wave 5	Correlation of Wave 4 and Wave 5 scores	Paired <i>t</i>-test for change from Wave 4 to Wave 5
ICD	2.87 (0.89)	2.85 (0.90)	0.72, $p < .0001$	0.19, $p = .85$
Cambodian/Vietnamese cultural identification	3.16 (0.19)	3.03 (0.28)	0.22, $p = .14$	2.92, $p < .01$
American cultural identification	2.80 (0.15)	2.96 (0.23)	0.23, $p = .12$	-4.48, $p < .0001$
	Remained Traditional at Wave 5	Changed to Assimilated at Wave 5	Changed to Bicultural at Wave 5	Changed to Marginalized at Wave 5
Traditional at Wave 4 (n=47)	15 (31.9)	9 (19.2)	14 (29.8)	9 (19.2)
Traditional at Wave 4 and reported alcohol use at Wave 5	2 (16.7)	3 (25.0)	2 (16.7)	5 (41.7)

^aTable includes all available data at each wave. Imputation not conducted for data presented in this table.

We attempted to replicate the ICD-alcohol use analysis presented in Chapter 6 by estimating the multiple logistic regression model among those who identified as traditional at baseline (n=47). The hypothesis was that a change in ICD from baseline to follow-up would predict alcohol use among this sub-sample. This hypothesis was based on the theory that because a large majority of these adolescents switched acculturation

strategies by the follow-up, it was possible that this switch was associated with an increase in ICD (given they were no longer identifying as traditional), and that ICD would then in turn be associated with alcohol use.

The results of this new analysis are displayed in Table C.2. There was no effect of ICD on alcohol use among the sub-sample. Similarly, there was no effect of ICD change from baseline to follow-up on alcohol use (OR=0.52; 95% CI: -0.08, 3.42; $p=.50$). This null finding should be considered in light of the fact that we had a small sample size in this sub-sample ($n=47$). Future studies with larger samples of adolescents identifying as traditional should attempt to explore a mediational analysis of the acculturation-ICD-alcohol use pathway.

Table C.2 Predictors at adolescent alcohol use among adolescents with traditional cultural orientation ($n=47$)^a

	OR^b	95% CI	<i>p</i>	AOR^c	95% CI	<i>p</i>
Intergenerational cultural dissonance	1.55	0.73, 3.35	.26	1.69	0.58, 4.95	.34
Sex (REF=Female)				3.14	0.50, 19.59	.22
Age				3.28	1.34, 8.06	.01
Nationality (REF=Vietnamese)				1.54	0.15, 15.70	.78
Place of birth (REF=Outside the U.S.)				0.54	0.06, 4.48	.57

^aTable includes all available data. Imputation not conducted for data presented in this table because acculturation categories were not consistent across imputations and therefore the model could not be estimated using the imputed data.

^bUnadjusted odds ratio are from simple logistic regression of alcohol use onto ICD. Unadjusted odds ratios were not calculated for other covariates.

^cAdjusted odds ratio

CURRICULUM VITAE

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Personal Information

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Permanent Address:

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Citizenship: United States

Current Education/Position

PhD Candidate

August 2011 – Present

Johns Hopkins University

Bloomberg School of Public Health

Department of Mental Health

Baltimore, MD

- Doctor of Philosophy degree in Public Mental Health, expected May 2015
- Focus on Psychiatric Epidemiology, Global Mental Health and Alcohol Use
- Dissertation topic: Acculturation, alcohol use, and depression among Vietnamese and Cambodian immigrant families in the United States
- Cumulative GPA: 4.0

Pre-Doctoral Fellow

October 2012 – Present

Drug Dependence Epidemiology

Training Program

National Institute of Drug Abuse

T32DA007292

PI: C. Debra Furr-Holden, PhD

Research Assistant

July 2012 – Present

Applied Mental Health Research Group

Johns Hopkins University

Bloomberg School of Public Health

Department of Mental Health

Baltimore, MD & Lusaka, Zambia

- Assist the management and coordination of two randomized controlled trials of mental health interventions for orphans and vulnerable children in Lusaka, Zambia
- Travel to Lusaka to lead trainings with study team and conduct oversight of monitoring and evaluation systems
- Draft and administer IRB submissions

- Manage and analyze data
- Conduct literature reviews and draft manuscripts
- Assist with budgeting for R01 randomized trial in Lusaka, Zambia

Education

Master of Public Health
August 2007 – May 2009

Emory University
Rollins School of Public Health
Hubert Department of Global Health
Atlanta, GA

- Cumulative GPA: 3.9
- Focus on Global Mental Health and Migration and Health
- Thesis topic: War, trauma, and mental health among adolescents in northern Uganda

Bachelor of Science
August 2002 – April 2006

University of Pittsburgh
Pittsburgh, PA

- Double major: Psychology/Political Science
- Graduated Magna Cum Laude
- Honors Degree in Psychology
- Thesis topic: Trauma and mental health among Somali refugees in Sweden
- Cumulative GPA: 3.6
- Cumulative GPA in Major: 3.8 (Psychology) / 3.6 (Political Science)

Additional Training and Skills

Pre-Doctoral Fellow
August 2011 – September 2012

Child Mental Health Services Research Training
Program
National Institute of Mental Health
5T32MH019545-20
PI: Philip Leaf, PhD

Certified Volunteer
September 2008

American Red Cross
Atlanta Chapter
Atlanta, GA

- Trained and certified in emergency preparedness and shelter management

Trained in research methodology and practice, statistical analysis, and applied statistical methodology

- Regression modeling
- Longitudinal data analysis and multilevel modeling
- Analysis of randomized controlled trials
- Structural equation modeling and factor analysis
- Survival analysis
- Multiple imputation methods
- Sampling methods for survey research
- Qualitative methods

Professional Experience

Research Specialist
June 2009 – May 2011

Harvard School of Public Health
Department of Nutrition
Dar es Salaam, Tanzania

- Coordinated, managed, and led field operations for large-scale randomized clinical trials involving HIV, nutrition, and malaria
- Developed and managed malaria and pregnancy surveillance system in Dar es Salaam
- Managed, cleaned, and analyzed large datasets
- Administered IRB and other regulatory submissions in Boston and Dar es Salaam

Research Assistant
September 2007 – May 2009

Global Diabetes Research Center
Emory University
Hubert Department of Global Health
Atlanta, GA

- Prepared, drafted, and edited manuscripts, IRB submissions, and grant proposals
- Analyzed and interpreted data
- Conducted extensive literature reviews including for systematic reviews

Research Intern
May 2008 – August 2008

United Nations Population Fund – Uganda
Gulu, Uganda

- Conducted field work for Master's thesis in northern Uganda
- Investigated the effects of trauma on adolescent mental health, resiliency, and coping strategies using a mixed methods design

Research Specialist
September 2006 – June 2007

Center for Research on Healthcare
Division of General Internal Medicine
University of Pittsburgh Medical Center
Pittsburgh, PA

- Managed logistical aspects of several on-going clinical trials
- Recruited participants in clinical healthcare settings
- Conducted consent process and research interviews with diverse patient populations
- Worked directly in patient care setting with physicians, staff and patients

Student Intern
May 2005 – April 2006

Hospital Elder Life Program
University of Pittsburgh Medical Center
Pittsburgh, PA

- Conducted one-on-one intervention sessions in order to help orient and comfort elderly patients to help prevent the onset of delirium

Student Intern
August 2004 – December 2004

Child and Adolescent Unit
Western Psychiatric Institute and Clinic
University of Pittsburgh Medical Center
Pittsburgh, PA

- Assisted psychiatrists, psychologists, and mental health service providers in group patient intervention therapy and problem solving sessions
- Organized and led recreational activities for children and tutored them on schoolwork

Teaching Experience

Teaching Assistant

August 2014 – November 2014
August 2013 – November 2013

“Perspectives of Psychiatry: A Public Health Framework”
Drs. Paul McHugh & Alan Romanoski
Johns Hopkins University
Department of Mental Health
Baltimore, MD

Instructor
August 2014

Serenity Harm Reduction Programme Zambia
Lusaka, Zambia

- Led 1-week monitoring and evaluation training with Zambia research team

Co-Instructor
April 2014

Johns Hopkins University
Bloomberg School of Public Health
Baltimore, MD

- Co-led 2-day qualitative research methodology training for master’s students

Referee Experience

Reviewer Political Psychology
European Journal of Psychotraumatology

Professional Memberships

Member
September 2014 – Present American Public Health Association

Member
December 2013 – Present College on Problems of Drug Dependence

Treasurer
September 2013 – Present Behavioral Health International Group

Honors and Awards

Honors Degree in Psychology University of Pittsburgh
April 2006 Department of Psychology
Pittsburgh, PA

- The honors designation requires the completion and successful defense of an original research project and thesis in addition to a GPA of 3.5

Major Research Interests

My primary research interests are focused on the cultural and migratory factors associated with mental health and the intersection of these relationships with substance and alcohol use. To date, there have been few studies dealing with these issues among populations in low and middle income countries affected by conflict and among refugee and immigrant populations living in the United States. My career goals are centered on advancing this line of research through collaborations with academic institutions, non-governmental organizations, international organizations, and governments in an effort to elucidate the types of mental health problems faced by these populations, their patterns of substance and alcohol use, and developing and testing culturally relevant intervention strategies. This should be an especially pertinent area of concern for the United States given the amount of effort and resources dedicated to resettling a number of refugee populations in the U.S., and the steady rate of immigration.

Publications

Peer-Reviewed Papers

1. Murray, L.K., Skavenski-van Wyk, S.S., **Kane, J.C.**, Mayeya, J., Dorsey, S., Imasiku, M., Michalopoulos, L., Cohen, J.A., McKenna, B., DeMulder, J., & Bolton, P. A Randomized Controlled Trial of the Effectiveness of Trauma Focused Cognitive Behavioral (TF-CBT) Among Trauma-Affected Children in Lusaka, Zambia. *JAMA Pediatrics* (in press).

2. Michalopoulos, L., Murray, L., **Kane, J.C.**, Semrau, K., Chomba, E., Thea, D., & Bolton, P. (2015). The SHAME questionnaire in Zambia: Reliability and validity testing. *PLOS One*, *10*(4): e0123820. DOI: 10.1371/journal.pone.0123820
3. **Kane, J.C.**, Ventevogel, P., Spiegel, P., Bass, J.K., van Ommeren, M., & Tol, W.A (2014). Mental, neurological, and substance use problems among refugees in primary health care: analysis of the Health Information System in 90 refugee camps. *BMC Medicine*, *12*: 228. doi:10.1186/s12916-014-0228-9
4. Canetti, D., Hall, B.J., Greene, T., **Kane, J.C.**, & Hobfoll, S. (2014). Improving mental health is key to reducing violence in Israel and Gaza. *Lancet*, *384*(9942), 493-494.
5. **Kane, J.C.**, Rapaport, C., Zalta, A., Canetti, D., Hobfoll, S., & Hall, B.J. (2014) Regular drinking may strengthen the beneficial influence of social support on depression: Findings from a representative Israeli sample during a period of war and terrorism. *Drug and Alcohol Dependence*, *140*, 175-82.

Manuscripts under review

1. **Kane, J.C.**, Hall, B.J., Bolton, P. Murray, L.K., & Bass, J.K. The association of domestic violence and social resources with functioning in an adult trauma-affected sample living in Kurdistan, Northern Iraq, *Journal of Traumatic Stress* (under review)

Book Chapters

1. Tol, W.A., Haroz, E. E., Hock, R.S, **Kane, J.C.** & Jordans, M.J.D. (2013). Ecological perspectives on trauma and resilience in children affected by armed conflict: bridging evidence and practice. In: Pat-Horenczyk, R., Brom, D. Chemtob, C., & Vogel, J. (Eds.), *Helping Children Cope with Trauma: Individual, family and community perspectives*. New York: Psychology Press.

Reports

1. Bradshaw, C., Nguyen, A., **Kane, J. C.**, & Bass, J.K. (2013). Social Inclusion of Youth with Mental Health Conditions. *A Report Prepared for the United Nations, Division for Social Policy and Development*, New York, NY. Available at: <http://www.un.org/esa/socdev/documents/youth/youth-mental-health.pdf>

Abstracts and Presentations

1. **Kane, J.C.**, Johnson, R.M., Robinson, C., Jernigan, D.H., Harachi, T., & Bass, J.K. (2015). Longitudinal effects of acculturation on alcohol use among Vietnamese and Cambodian immigrant women in the United States. Poster presented at the *2015 International Conference on Global Health: Prevention and Treatment of Substance Use Disorders and HIV*, Hangzhou, China
2. **Kane, J.C.**, Ventevogel, P., Spiegel, P., Bass, J., van Ommeren, M., & Tol, W. (2014). Treatment of mental, neurological, and substance use problems in refugee camp primary care settings. Paper presented at the *American Public Health Association Annual Meeting and Exposition*, New Orleans, LA

3. **Kane, J.C.**, Michalopoulos, L., Bass, J., Bolton, P., & Murray, L. (2014). Validity and reliability testing of the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) among orphans and vulnerable children in Zambia. Poster presented at the *College on Problems of Drug Dependence Annual Meeting*, San Juan, Puerto Rico
4. Murray, S. **Kane, J.C.**, Bass, J., Mohammed, T., Murray, L., & Bolton, P. (2013). The modifying role of coping strategies on a mental health intervention among torture survivors in Kurdistan, Iraq. Poster presented at the *American Public Health Association Annual Meeting and Exposition*, Boston, MA
5. **Kane, J.C.**, Rapaport, C., Zalta, A., Canetti, D., Hobfoll, S., & Hall, B. (2013). Effects of drinking and social support on depression in a nationally representative sample in Israel. Poster presented at the *College on Problems of Drug Dependence Annual Meeting*, San Diego, CA
6. **Kane, J.C.**, Hall, B., Bolton, P., & Bass, J. (2012). *The impact of social resources on functioning among survivors of domestic violence in Iraqi Kurdistan*. Paper presented at the *International Society for Traumatic Stress Studies Meeting*, Los Angeles, CA
7. **Kane, J.C.**, Stephenson, R., DiGirolamo, A. (2010). Adolescent mental health in northern Uganda. Poster presented at *Global Response 2010: International Conference on Violent Conflict and Health*, Copenhagen, Denmark
8. **Kane, J.C.**, Stephenson, R., DiGirolamo, A. (2009). War, trauma, and adolescent mental health in northern Uganda. Paper presented at the *American Public Health Association Annual Meeting and Exposition*, Philadelphia, PA
9. Buekens, J., Glowa-Kollisch, S., Hormes, J., **Kane, J.C.**, & Naik, R. (2008). Health and human rights of Iraqi refugees. Poster presented at the *American Public Health Association Annual Meeting and Exposition*, San Diego, CA

Grants and Research Support

Role: PI (Student Investigator)
2014 – 2015

Global Health Field Research Award
Johns Hopkins Center for Global Health
Johns Hopkins University
Baltimore, MD

- “Implementation of World Health Organization guidelines for the treatment of stress-related mental health problems in Uganda: A qualitative study”
 - Funding for two months of field work in psychiatric clinics in northern Uganda
 - Qualitative research study will focus on the implementation of World Health Organization guidelines for the treatment of stress-related disorders

Role: PI (Student Investigator)
2013 – 2015

Urban Health Institute Small Grants Program
Johns Hopkins University
Baltimore, MD

- “Process evaluation of a mental health screening and referral program for resettled refugees in Baltimore”
 - Funding for qualitative study/process evaluation of an on-going mental health screening and referral program for refugees in the Baltimore area
 - Study conducted in collaboration with Maryland Department of Health and Mental Hygiene, Office of Immigrant and Refugee Health

Role: PI (Student Investigator)
2008

Global Field Experience Fund
Emory University
Hubert Department of Global Health

- “The effects of trauma and sexual violence on mental health and sexual risk behavior among internally displaced adolescents in Uganda: a positive deviance study”
 - Funding for master’s thesis field work in northern Uganda