

The Immigration Paradox: Exploring Filipino American Psychological Distress

Leighton Kenji Vila

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

Master of Science

In

Sociology

Michael D. Hughes, Chair

K. Jill Kiecolt

Russell T. Jones

May 3, 2012

Blacksburg, VA

Keywords: Filipino Americans, psychological distress, immigration, native language,
ethnic identification

The Immigration Paradox: Exploring Filipino American Psychological Distress

Leighton Kenji Vila

ABSTRACT

The immigrant paradox is the empirical trend that immigrants have better mental health than second and subsequent generations. Mossakowski (2007) found that Filipinos follow this trend, and using the same data this study builds upon the previous research by examining the relationship between cultural (ethnic identification, native language) and structural (nativity, age at immigration, and poverty in city of birth) variables. The results indicate that cultural variables are important in understanding psychological distress among Filipino Americans. Relative deprivation was not associated with psychological distress, and the effect of selective migration is explained away when language and ethnic identification are controlled. Use of native language benefits U.S. born and adult immigrant Filipinos, but is damaging to child immigrants with low ethnic identification. Suggestions for future research are discussed.

TABLE OF CONTENTS

Chapter 1: Introduction	1
Chapter 2: Literature Review	3
2.1: The Immigration Paradox	3
2.2: Filipino Immigration to the United States	8
2.3: Asian American Mental Health	9
2.4: Filipino Mental Health.....	10
2.5: Selective Migration Theory	12
2.6: Relative Deprivation Theory	14
2.7: Damaging Acculturation Theory	17
2.8: Native Language Theory	19
2.9: Problem Statement.....	23
Chapter 3: Methods.....	27
3.1: Data.....	27
3.2: Dependent Variable	27
3.3: Independent Variables	27
3.4: Control Variables.....	29
Chapter 4: Results	31
4.1: Mean Levels of Psychological Distress	31
4.2: Structural Variables	31
4.3: Cultural Variables	31
Chapter 5: Discussion and Future Research	34
5.1: Structural Variables	34

5.2: Cultural Variables	35
5.3: Limitations	38
Chapter 6: Conclusion.....	39
References.....	40
Tables	45
Table 1. Variable Descriptions, Metrics, Means, and Standard Deviations for Filipino Americans.....	45
Table 2. Descriptive Statistics: Means, Standard Deviations, and Ranges....	46
Table 3. Coefficients from Ordinary Least Squares (OLS) Regression Models Predicting Psychological Distress among Filipino Americans	47
Table 4. Coefficients from OLS Regression Models Predicting Levels of Psychological Distress for Structural Variables among Filipino Americans	48
Table 5. OLS Regression Models Predicting Levels of Psychological Distress for Cultural Variables with Interactions	49
Figures.....	50
Figure 1. Psychological Distress by Level of Ethnic Identification for Nativity	50
Figure 2 Part A. Psychological Distress by Level of Ethnic Identification for Filipino Adult Immigrants by Level of Filipino Language Use	51
Figure 2 Part B. Psychological Distress by level of Ethnic Identification for Filipino Child Immigrants by Level of Filipino Language Use	52

Figure 2 Part C. Psychological Distress by Level of Ethnic Identification for Adult Immigrant and U.S. Born Filipinos by Level of Filipino Language Use	53
Appendix A: Detailed Measures	54
Appendix B: Poverty Incidence by Region in the Philippines	57

INTRODUCTION.

The immigration paradox is a phenomenon in which first generation immigrants report better mental health than second and subsequent generations. This is a puzzling finding because immigration is thought to be a stressful experience, and stress is related to lower levels of mental health, which should cause first generation immigrants to be the least healthy as compared to second and later generations who do not experience the stress of immigrating. Furthermore, second and subsequent generations are expected to have better mental health because they face fewer cultural conflicts, face fewer immigration-related barriers to establishing support networks in the host country, and are less likely to experience discrimination and racism that is targeted at immigrants. Empirical studies support the immigration paradox among post-1980 immigrants (Burnam et al 1987, Vega et al. 1998, Grant et al. 2004, etc.). While researchers have created theories to explain the immigration paradox, none of these theories have been able to completely explain the empirical finding that immigrants have better mental health than their United States (U.S.) born peers.

This study examined four theories (selective migration, relative deprivation, damaging acculturation, and native language theory) in order to better explain the immigrant paradox. Selective migration theory states that people who emigrate from their home country are psychologically more resilient than the native population who do not migrate (Kuo and Tsai 1986). Relative deprivation theory states that immigrants are less likely to report psychological distress because the homeland environment they left was much less desirable than their current environment in the United States (Vega and Rumbaut 1991). Damaging acculturation theory states that exposure to American culture

damages the mental health of second and subsequent generation immigrants (Burnam et al. 1987), and exposure to U.S. culture leaves second, and subsequent generations, at a disadvantage. Native language theory, a variant on damaging acculturation theory, argues that maintenance of native language is may protect immigrants from the stress associated with immigration (Hurtado and Arce 1987, Ortega et al. 2000).

Mossakowski (2007) looked at the extent to which immigrant status is associated with the mental health of Filipino Americans and included several variables as possible mediators for the association between immigrant status and depression¹. Her main findings were that Filipino American immigrants had lower levels of depression when compared to U.S. born Filipino Americans, and that younger immigrants had worse depression than older immigrants, lending support to the immigration paradox. Mossakowski included ethnic identification, level of collectivism, level of individuals, acculturation variables, and socio-economic status (SES) in her analyses, but these variables did not explain the association of immigrant status and depression.

A number of studies have examined the immigration paradox, including Mossakowski (2007), but none have explained why we observe this pattern. The current study replicates and extends Mossakowski's study and test the extent to which the theories of acculturation, selective migration, and relative deprivation explain the immigration paradox among Filipino Americans.

¹ Whereas Mossakowski (2007) labeled her dependent variable "depression," the measures from which this scale is constructed is a combination of depression and anxiety measures. Because of this, this study will use the term "psychological distress" instead of depression. Although the measures are equivalent, the term "psychological distress" is a better descriptor of the study variables.

LITERATURE REVIEW.

The Immigration Paradox. For the purpose of this study, the immigration paradox is defined as the empirical finding that first generation immigrants have better mental health than second and subsequent generations. In this way, the immigration paradox is a novel phenomenon because acculturation is thought to be a stressful process and stress is thought to cause poorer mental health. Takeuchi et al. (2007) states that the immigration paradox is in opposition to older empirical trends; this suggests that immigrants are at greater risk for psychological disorders. The difference is that earlier studies have focused on admission and treatment records that omit immigrants who do not seek mental health services. The majority of empirical studies that investigate immigration status and mental health support the immigration paradox.

Harker (2001) found evidence of the immigrant paradox using data from the National Longitudinal Study of Adolescent Health (Add Health.) The results indicated that immigrants had higher levels of positive well being and lower levels of depression than U.S. born populations, when controlling for low income, education, family size, English language usage, and ethnicity. Age at immigration (i.e., individual time spent in the U.S.) was not significant in predicting depression, but the authors argue that immigrants are more resilient and, therefore, the age at immigration is not related to their wellbeing.

Much of the immigration research conducted in the past 30 years has focused on Mexican American immigration to the U.S. Burnam et al. (1987) was the first study to discover the immigration paradox; they found that level of acculturation, as measured by a 26-item acculturation scale, was positively correlated with alcohol and drug

abuse/dependence. They concluded that immigrants feel less deprived than their native peers due to a higher standard of living in the U.S. In other words, relative to the quality of life in Mexico, Mexican Americans feel less deprived. This “relative deprivation” results in better mental health and lower drug and alcohol use/abuse among Mexican American immigrants. A limitation of their study is that they used an acculturation scale as the sole measure of acculturation and did not measure generational status or time of residence in the U.S, both of which are important factors when attempting to understand cultural transmission and coping mechanisms. Using DSM-IV criteria for mental disorders, Grant et al. (2004) also supports the immigration paradox. Their study found that U.S. born Mexican Americans were at greater risk for substance abuse and mood disorders as compared to foreign-born Mexican Americans.

In a review of five large scale epidemiological and regional mental health studies, Escobar et al. (1999) found that Mexican immigrants had better mental health than Mexican Americans. In their analysis of Epidemiological Catchment Area (ECA) Study, National Comorbidity Study (NCS), Mexican American Prevalence and Services Survey (MAPSS), U.S./Mexico Border Study of Adolescent, and UC Irvine Study of Mental Disorders data, the results indicate that (a) acculturation was positively correlated with rates of psychological disorder, (b) more time spent in the U.S. is positively associated with rates of psychological disorder, and (c) Mexican born immigrants had better mental health than U.S. born Mexican Americans. The authors claim that the traditional Mexican family is more supportive than traditional U.S. families, and this family improves Mexican American health. Furthermore, the authors argue that culture provides

additional coping resources that help ethnic minorities mitigate the negative effect of racism and discrimination.

The immigration paradox has also been found among Latin Americans. Alegria et al. (2006) found that U.S. born Puerto Ricans have higher rates of substance use than island born Puerto Rican immigrants. Furthermore, U.S. born Cuban Americans had higher rates of mental disorder than foreign-born Cuban Americans.

The main finding of Leu et al. (2008) is that Asian Americans follow the immigration paradox trend, however, the nature of the immigration paradox is more complex for Asian Americans. The authors examined the effect of age at immigration and subjective social status as it affects mental health for Asian immigrants. Their data indicated that foreign-born Asians who immigrated when younger than 25 years old had worse mental health than those who immigrated at the age of 25 or older.

Kuo and Tsai (1968) found that hardiness (the combination of an internal locus of control and strong sense of personal control) protects against depression for Asian immigrants. According to the authors, the more hardy an immigrant is, the more likely he or she is to cope with the stresses of immigration; by contrast, less hardy immigrants, ultimately, flee the host country and return to their country of birth, an event known as “salmon bias.” Due to “salmon bias,” the authors argue that immigrant samples are over representative of healthy individuals and the immigration paradox reflects a natural tendency for exceptional populations to return to normal levels of hardiness.

Uretsky and Methiesen (2006) examined the relationship between immigrant status, length of residency, and ethnicity for immigrants in California. The results indicated that both Asian and Pacific Islander (including Filipinos) and Latino

immigrants were healthier than their U.S. born peers. Furthermore, time in the U.S. was found to reduce health in both populations. In light of these findings, the authors conclude that there is a positive selection bias such that more resilient immigrants migrate to the U.S. in general, and California in specific, regardless of country of origin.

Although the majority of literature supports the immigration paradox, three studies have not supported the immigration paradox. Zhang and Ta (2009), while controlling for other variables, found that immigrant status, nativity, and time of residence in U.S. was not significant in predicting mental health for Asian Americans using nationally representative data (National Latino and Asian American Survey, NLAAS). Instead, they found that social connections, English proficiency, and post-secondary education were positively correlated with good mental health for Filipinos, Chinese, and Vietnamese Americans.

This study was weak in two aspects. First, it used time spent in the U.S. as a proxy for acculturation. Acculturation is more complex than exposure to U.S. culture; it is possible for Asians who live in homogeneous immigrant communities to have low levels of acculturation (e.g., Chinese in San Francisco's Chinatown). Second, the study did not account for ethnic identification. Prior studies have shown that ethnic identification can improve Filipino mental health (Mossakowski 2003, 2007).

Also using NLAAS data, Yip et al. (2008) found that immigrant status² was not significant in explaining the relationship between discrimination and ethnic identification for foreign and U.S. born Asian Americans irrespective of nationality. Their results indicated that age interacted with ethnic identity in such a way that strong ethnic

² Nativity is the only measure of immigrant status in Yip et al. (2008).

identification buffered the effects of discriminations for Asians aged 31 to 40, and 51 to 75 years old; however ethnic identification exacerbated the effects of racial discrimination for Asians aged 41 to 50 years old. There was no significant interaction between ethnic identification, discrimination, and age for Asians aged 18 to 30 years old. Weaknesses of this study are that it did not account for SES in any fashion, nor did it factor in time spent in the U.S. or generational status, both of which have been shown to influence immigrant mental health. The authors also note that the nature of the data and analyses are unable to differentiate whether these results are due to a cohort effect (such as the 1965 Immigration Act) or compositional variables unique to immigrant status (e.g., relative deprivation in the homeland), and that a single measure of ethnic identification (“how close do you feel, in your ideas and feelings about things, to other people of the same racial and ethnic descent?” p. 7) may be inadequate because ethnic identification is more complex than perceived ethnic group closeness.

Breslau et al. (2007) found that Mexican immigrants were at increased risk of mood and anxiety disorders when compared to a nationally representative sample of Mexican citizens. Specifically, immigrants were twice as likely to have a mood disorder and three times as likely to have a pre-existing anxiety disorder. A major limitation of this study is that the Mexican American immigrant sample was limited to English speaking immigrants, which may bias the sample towards immigrants with greater levels of acculturation and, therefore, confound their findings. The authors of this study caution the acceptance of these findings, stating “these findings should be considered preliminary until they receive further replication” (p. 119).

In summary, the immigration paradox is a well documented among Asian and Latino populations. The literature has not been able to specify a theory that fully explains the immigrant paradox, and most of the literature has focused on structural explanations (i.e., healthier immigrants) with moderate success. Given that Filipinos have a unique colonial experience with the U.S., it is necessary to discuss Filipino immigration to the United States in order to understand the immigration paradox as it relates to Filipino Americans.

Filipino Immigration to the U.S. Studies that have investigated the relationship between Filipino Immigration and Mental Health have been conducted within the past two decades. In general, Filipino Americans are an understudied population (Mossakowski 2007, Uba 1992). Rather than examining the case of Filipino immigrants apart from Asian immigrants, the majority of Asian American mental health studies control for Filipino ethnicity. The limitation of this analytical approach is that controlling for Filipino ethnicity assumes that Filipino ethnicity is similar to other Asian ethnicities.

In their analysis of Filipino immigration trends, Liu et al. (1991) state that the Filipino immigration experience is distinct from the immigration experience of other Asians. This difference is due to the fact that between 1910 and 1960, Filipinos were considered U.S. nationals and exempt from certain immigration laws applied to other Asians. As U.S. nationals, Filipinos were allowed to work in the U.S., but denied the right to become citizens of the U.S., work for the Federal government, or own land. This relationship between the U.S. and the Philippines did not exist among any other Asian nation and the ramifications of this relationship make the Filipino immigration experience unique and different from any other Asian ethnicity. This uniqueness

provides justification for examining Filipinos separate from other Asian immigrants (Rondilla 2002).

Wolf (1997) finds that second generation Filipinos appear to be successfully integrated (high SES, middle class, college educated) into U.S. society, but suffer from cultural conflict due to the colonial history between the U.S. and Philippines. The results of her qualitative study indicate that 1st generation Filipino parents pressure their children to succeed in school, but when a child does well and receives an offer to a University, the parent advocates that the child go to a community college near home. The author concludes that 2nd generation Filipinos are afflicted by emotional transnationalism. Emotional transnationalism occurs when a child is told to succeed in high school academics, but is encouraged to stay close to home and attend a community college for post-secondary schooling where their education is stunted.

Asian American Mental Health. Aside from Mossakowski (2007), no studies examine Filipino mental health separate from other Asian ethnicities. Other studies have examined the immigration paradox among Asian Americans, including Filipinos, but in light of the colonial nature between the U.S. and the Philippines, Filipino Americans may not be comparable to other Asian Americans.

Gee and Ponce (2010) examined the effect of discrimination and limited English proficiency on physical and mental health of Asian Americans. The results indicated that Asian Americans, in general, experience discrimination and limited English proficiency, but these factors had a greater negative effect for some Asian sub-ethnicities and less for others. Interestingly, Filipinos had the highest levels of discrimination yet of all Asian

sub-ethnicities Filipinos were the healthiest. This finding was not discussed in further detail. A weakness of this study is that it did not control for immigrant status.

Two studies attempted to compare mental health across Asian American ethnic groups. Leu et al. (2008), found that being Filipino, compared to being Chinese, was not a significant factor in explaining the effect of social status on mood dysfunction. Zhang and Ta (2006) found that nation of origin were not significantly correlated with mental health. In the two previous studies, Filipinos were compared to Chinese and Vietnamese, respectively, and other comparisons (e.g., Filipino vs. Japanese, Filipino vs. Korean) were not tested. Neither study examined for immigrant status.

Filipino Mental Health. To date, the only study of Filipino immigrants is Mossakowski (2007). She investigated the nature of immigrant status as a factor in Filipino American mental health. Using data from the Filipino American Community Epidemiology Study (FACES), she finds that first generation Filipino immigrants have significantly lower levels of depression the second and subsequent generations. The study controlled for collectivity/individualism, S.E.S., education, income, and age—which were not significant.

This primary finding of this study is that the immigration paradox exists for Filipinos. Furthermore, those who immigrated earlier in life (<12 years old) had higher levels of depression. The author credits this finding to a selection bias during the process of immigration. This suggestion assumes that these younger immigrants were selected randomly and that their levels of depression are equal to levels of depression among non-immigrant Filipinos who remained in the Philippines.

In explaining the immigration paradox, the author argues for selection bias. She claims “those who migrated after childhood are mentally healthier because they were selected based on their strong psychological assets and determination to succeed (Landale et al. 1999)” (Mossakowski 2007, p. 300). In this claim, she assumes that these “strong psychological assets” are not genetically transferred, otherwise the same results should be expected among 2nd generation Filipinos. Furthermore, a true test of selective migration would compare mental health levels in the home country to mental health levels of immigrants in the U.S. Without data from the home country, any measure of selective migration is, at best, a proxy measure.³

Mossakowski (2007) also found that high levels of ethnic identification reduced depression levels for U.S. born Filipino Americans, but this relationship was not significant for immigrant Filipinos. She, however, does not test this interaction for statistical significance, nor does she investigate this relationship for child immigrants. Mossakowski concludes that the effect of ethnic identification demonstrates a model of negative assimilation (i.e., damaging acculturation) such that American culture damages immigrant mental health but higher levels of ethnic identification can buffer this effect.

Another explanation of this finding is that native language, which was not controlled for, may improve Filipino mental health. Other studies, as discussed below, have eluded that native language is associated with ethnic identification for Mexican Americans. Given the history of Spanish colonization in both Mexico and the Philippines, Filipinos and Mexicans may have cultural similarities.

³ A true test of selective migration can be seen in Borges et al. (2009) who used data from both the U.S. and Mexico to test for selective migration among Mexican American immigrants.

Filipino language may be a necessary key to understanding Filipino ethnic identification for two reasons. Firstly, the ability to use Filipino language allows for conversation with Filipino relatives and local Filipinos who don't speak English. If Filipinos are discriminated against, then these non-English speaking ethnic comrades could provide ethnically specific coping strategies that can reduce depression among Filipino Americans

This study utilizes four theories that may explain the immigration paradox that was found in Mossakowski's study (2007). This study examines (1) selective migration, (2) relative deprivation, (3) damaging acculturation, (4) and native language theory to better understand the immigrant paradox among Filipino Americans, as found in Mossakowski's study. The mental health literature on selective migration, relative deprivation, and damaging acculturation are developing and non-exhaustive, therefore the literature search has been expanded to include the sociology of immigrant health.

Selective Migration Theory. Selective migration theory, also referred to as hardiness theory (Kuo and Tsai 1986), argues that certain personality traits exist among immigrants and that these traits allow immigrants to better cope with stresses, thus leading to their increase in mental health. According to Glick (2010)⁴, selective migration is defined as "the nonrandom process of determining [which] migrants and stay behind" (p. 501); this study maintains this conceptual definition of selective migration.

Mossakowski (2007), as discussed above, provides support for the selective migration theory in explaining the immigrant paradox for Filipinos in the U.S. While controlling for duration of stay in the U.S., this study found that Filipinos who

⁴ Glick (2010) used the term "Selectivity of Migration" rather than "Selective Migration."

immigrated as children had higher levels of depression than Filipinos who immigrated later in life. Given that most children have little volition in migration choices, Mossakowski infers that these results demonstrate a selective migration bias among Filipino immigrants.

Buriel (1984) first applied this theory to Mexican immigrant populations. In explaining his results, he states, “Mexican immigrants are not typical Mexicans, because if they were they would have remained in Mexico as is typical of most Mexicans” (p. 118-119). If the best immigrants come to the U.S., then it is logical that they have better coping skills than the population of their home country. Conversely, if a person migrates but does not have the resilient needed to succeed in the U.S., they are more likely to return to their home country, a behavior labeled “salmon bias” (Markides and Eschbak, 2005). If immigrants are self selected based on personality traits, then selective migration may explain the immigration paradox. Recent empirical studies have been mixed in terms of support for the selective migration theory.

Chou, Johnson, and Biewett (2009) examined health status and health service utilization among Chinese immigrants in the U.S. and Taiwan. They found that U.S. immigrants are healthier than homeland, Taiwan, peers. Furthermore, U.S. born and non-recent immigrants (those who migrated more than 15 years ago) demonstrated significantly lower rates of emergency room utilization than newer immigrants, a finding that the authors credit to cultural differences in health care utilization⁵. The authors

⁵ According to Chou et al. (2009), Chinese immigrants may use Emergency Room services instead of primary care practitioners because the Chinese medical system does not differentiate between emergency service and primary care physicians.

conclude that U.S. immigrants are healthier than their non-immigrant homeland peers and use this conclusion to support of the selective migration theory.

A study conducted by Borges et al. (2009) did not provide support for the selective migration hypothesis. Using nationally representative data from the U.S. and Mexico (CPES and Mexican National Comorbidity Study, respectively) the study examined the effect of country of birth, nativity, emigrational selection (self-migration to the U.S., return migration to Mexico) and its effect on suicide (suicidal thoughts, plans, and attempts). They found that suicide risk was higher among child immigrants (those who arrived in the U.S. at the age of 12 or younger), U.S. born Mexicans in Mexico (i.e., return migrants) than among non-immigrant Mexican populations. More importantly, this study found no significant differences in rates of suicide as predicted by self-selection or return migration. Interestingly, younger migrants who returned to Mexico were found to have significantly higher rates of suicide attempt than non-migrant Mexicans (in other words, individuals who migrated to the U.S. at a younger age and returned to Mexico were more than two and a half times more likely to attempt suicide than individuals who never migrated). These results contradict selective migration theory and suggest that Mexicans who migrate to the U.S. and return are at greater suicide risk than non-immigrant Mexicans.

Relative Deprivation Theory. Relative deprivation theory maintains that the difference between first and subsequent generations of immigrants can be explained by differing perceptions of life in the U.S. This theory was first developed as an economic theory of migration (Stark 1984). According to this theory, an individual's judges his or

her social worth against individuals from similar backgrounds, and ignores social injustice for people from dissimilar backgrounds.

Based on this judgment, an individual will feel deprived if they have a poorer quality of life than their peers, or enriched if they have a better quality of life than their peers.

According to this theory, first generation immigrants compare themselves to their non-migrant peers in their home country. Since quality of life in the U.S. is better than quality of life in a developing nation, the first generation immigrants feel as if they live an enriched life and, as a result, less depressed. In contrast, second and subsequent generations compare themselves to U.S. born white peers. If the second generation immigrant feels that they are worse off than their U.S. born white peers, then they will judge themselves to live a deprived life. Previous studies that have examined the relative deprivation literature have been supportive of this theory, with only one study failing to provide support

Vega and Rumbaut (1991) were the first to apply relative deprivation to mental health research. While examining South Asian refugees in Canada, they found that Cambodian refugees had the highest levels of both depression and life satisfaction. This finding was unexpected because depression should be correlated with low life satisfaction, which led the authors to conclude that life satisfaction is a subjective measure where an immigrant judges his or her life in the U.S. in reference to his or her life in the home country. In the case of Cambodian refugees, immigrant life in war-torn Cambodia was much less desirable than life in Canada despite higher levels of racism and lower SES in comparison to native white Canadians.

A reiteration of relative deprivation theory is the conditional adaptation hypothesis. The conditional adaptation hypothesis focuses on the adaptation and structural stratification that an immigrant is forced to reconcile the social characteristics of the native and host country (Montazer and Wheaton 2011). Rather than focusing on the relative deprivation of immigrants, conditional adaptation focuses on the relationship between countries in a global political context.

In a study of children in Toronto, Montazer and Wheaton (2011) attempt to explain the immigration paradox using the conditional adaptation hypothesis. This study found that children of child immigrants (2.5 generation) who emigrated from countries with greater economic and cultural dissimilarity, (i.e., low gross national product) had more internalizing and externalizing problems native born children. The study concludes that country of origin plays an important role in influencing the mental health of child immigrants in Toronto, Canada. Unfortunately, the scope of the data limits the present study's ability to test the conditional adaptation hypothesis.

As cited previously, Leu et al. (2008) provide support for relative deprivation among Asian immigrants. The authors found that younger immigrants (those who immigrated when younger than 25 years old) had worse mental health than older immigrants (those who immigrated at the age of 25 years or older.) Furthermore, an interaction was found such that higher levels of subjective social status reduced mood dysfunction for young immigrants, but increased mood dysfunction for older immigrants. The authors attribute this interaction to differential stress according to generation (i.e., an increased burden to succeed among 2nd and subsequent generation Asian Americans causes them to have higher levels of mood dysfunction.) Although the authors don't

posit an explanation for this finding among the older immigrants, it may be argued that higher status among older immigrants may be interpreted as success due to individual efforts, most specifically immigrating to the U.S.

Gonzalez and Gonzalez (2008) replicated the study of Vega et al. (1998) and failed to provide support for the relative deprivation hypothesis. When including relative depression in their measures, this study was not able replicate the finding that relative deprivation is associated with depression. In interpretation of these findings, the authors suggest that the idea of relative deprivation is individualistic in nature and may be unfamiliar to Mexicans because Mexican culture is more collective in orientation. The authors call for replication and refinement in studies that examine the relationship between relative deprivation and psychological distress.

Damaging Acculturation Theory. Damaging acculturation theory states that exposure to U.S. culture damages minority mental health. The damaging acculturation theory does not specify what particular aspect of U.S. culture “damages” minority mental health, and mixed support has been found for the extent to which it can explain the immigration paradox (Buriel 1984, Vega et al. 1998, Taylor-Ritzer 2008). Early studies of damaging acculturation theory have focused on Mexican populations, while more recent studies have begun to look at Asian populations.

Buriel (1984) was among the first to argue that that deculturation (the process of becoming American while losing touch with Mexican heritage) is not helpful to the mental health of Mexican Americans. In a more recent editorial, Escobar (1998) states “the real reason for the advantages that Mexican immigrants may have been due to a “protective” or “buffering” effect of traditional culture” (p. 782). In other words,

Mexican culture protects immigrant mental health and the reproduction of Mexican culture (i.e., Mexican American culture) is less effective in protecting Mexican American mental health. The damaging acculturation model has received mixed empirical support, yet the recent research (circa 2008) suggest that acculturation may be harmful to immigrants.

Vega et al. (1998) found evidence of this using national data from Mexico (World Health Organization Composite International Diagnostic Interview and an independent survey of Mexico City) and the U.S. (NCS). Their results showed that (a) Mexican immigrants had lower rates of psychiatric disorder than U.S. born Mexican Americans, (b) Mexican Americans had disorder rates similar to the general U.S. population, and (c) Mexican immigrants had lower rates of disorder than the U.S. population. These findings lead the author to conclude that Mexican culture had a protective quality that shielded immigrants from the damaging acculturation of the U.S.

Using data from the 2001 Health Care Quality Survey, Yoo et al. (2008) provide support for the theory of damaging acculturation. An interaction was found between time in the U.S., experiencing language discrimination, and chronic health conditions for Asian Americans. Long term (>10 years of residence in the U.S.) immigrants who experienced language discrimination had four times the amount of chronic health conditions than recent U.S. immigrants (<10 years of residence in the U.S.) who experienced no language discrimination.

Kobayashi et al. (2008) examined the relationship between nativity and health status among Canadian immigrants. As a main effect, Canadian born Chinese and Southeast Asians were found to have better health. Nativity, however, lost significance

when control variables (gender, language, income, sex, etc.) were included in the model. Because the inclusion of control variables reduced the effect of nativity to no more than chance (i.e., $p > .05$), this study failed to provide support for the damaging acculturation theory.

According to damaging acculturation theory, exposure to U.S. culture decreases the mental health of ethnic minorities. This may explain the immigration paradox because first generation immigrants are exposed to the least amount of U.S. culture and, therefore, should have better mental health. Conversely, second and subsequent generations are exposed to U.S. culture from birth and, if the theory of damaging acculturation explains the immigration paradox, U.S. born Filipinos should have poorer mental health than their first generation peers. Also, according to this theory, child immigrants should also have worse mental health than adult immigrants, but better mental health than U.S. born Filipinos. A variant on damaging acculturation is native language theory.

Native Language Theory. Native language theory posits that if an immigrant is able to speak their native, non-English, language, they will have experience a higher quality of life. In this way, native language use may buffer the effect of damaging acculturation. For the purpose of this study, native language use refers to the ability of a person to verbally (as opposed to written or non-verbally) communicate in the language of his or her ethnic group.

The benefit of native language use is twofold. First, it may increase the amount of kin, social, and ethnic support by facilitating communication between the individual and native language speaking family members, social contacts and ethnic group

members, some of whom are unable to speak English and only able to communicate in the native language. This communication may be important if ethnically specific coping strategies are to be transmitted from ethnic elder to ethnic younger. Secondly, native language use may increase the tie strength between the individual and his or her ethnic minority community. In both cases, the ability to speak the native language, rather than the ability to read or write the native language, dictates the extent to which native language is beneficial to ethnic minorities because speech facilitates social and kin ties more than written language. Conversely, inability to speak the native language may damage the individual's ethnic authenticity and cause a sense of ethnic abandonment, the feeling that a person's ethnic group has discarded that person due to ethnic inauthenticity.

Ethnic abandonment research is centered in multiracial research, but the unique history of Filipino colonization makes it applicable to Filipino American research. Park (1928) is the first to recognize this ethnically conflicted role, which he labels as "the marginal man" which occurs "when old [homeland] habits are being discarded and new [host country] ones are not yet formed. It is inevitably a period of inner turmoil and intense self-consciousness" (p. 893). The discussion of ethnic abandonment is most prevalent in multiracial ethnic identification research (Shih and Sanchez 2005), but it may prove insightful to apply this theory to discussing generational effects among Filipino child immigrants due to the long history of colonization and racial intermingling in the Philippine Islands.

Hurtado and Arce (1987) were among the first to apply native language theory to non-white immigrant populations. Their study found that use of Spanish language, not nativity, was the strongest predictor of Mexican self-identification among Mexican

immigrants and U.S. born Mexican Americans. Although this study was the first to look at the effect of language on ethnic identification, it did not measure mental health.

Subsequent studies have examined the relationship between mental health and native language use among Mexican populations (e.g., Ortega et al. 2000, Bankston and Zhou 1995, and Hurtado and Arce 1987). No studies have examined the relationship between native language use and mental health as it relates to Filipino mental health independent of other Asian American ethnicities.

Ortega et al. (2000) examined the prevalence of psychiatric and substance use disorders among Mexican Americans while controlling for other sociodemographic variables, specifically current use of English at home and speaking English at home as a child using NCS data. Their results showed that, for adult populations, currently speaking English at home is positively correlated to risk for psychiatric disorder, while speaking English at home as a child was not a significant predictor. The authors conclude that the more Hispanics assimilate to American culture and use English language, the greater their risk of psychiatric disorder.

Fewer studies have examined the effect of language and mental health among Asian American populations. In a study of 387 Vietnamese high school students in New Orleans, Bankston and Zhou (1995) examined the extent to which proficiency in minority language, ability to read and write in Vietnamese, increases academic achievement. Unfortunately, their study was limited to written native language literacy and did not account for ability to speak traditional language.

According to Strobel (1996), inability to speak Filipino may limit a Filipino's support network and increase the individual's feeling of ethnic abandonment. In

addition, inability to speak Filipino may lead ethnic abandonment and increase stress. Ethnic abandonment occurs when an individual experiences racial stigmatization by the mainstream population (e.g., Whites in the U.S.) and ethnic jettisoning (e.g., a 2nd generation Filipino who is considered “not Filipino” by 1st generation Filipinos and is excluded from Filipino events). If ability to speak Filipino increases support networks and inability to speak Filipino creates a sense of ethnic abandonment, then native language use may explain the previous finding that ethnic identification reduced depression for U.S. born Filipinos (Mossakowski 2007).

The measures of native language use vary by study and no studies have examined the relationship between native language use, immigrant status, and mental health for Filipinos specifically. Some studies use a general measure of language use (Hurtado and Arce 1987), while others use verbal language use (Ortega et al. 2000), and yet others focus on written forms of native language use (Zhang and Ta 2009). Studies suggest that when native language use is centered around academic achievement, written native language is measured; when the research problem is centered around social and kin ties, verbal or general native language use is the construct of choice. Native language theory is a possible explanation for the immigrant paradox, and it may also explain the differences in the interaction effect found by Mossakowski (2007) for ethnic identification, nativity, and depression.

Problem Statement.

With few exceptions, empirical studies have demonstrated that the immigrant paradox exists among U.S. immigrant populations. Of the studies that have examined the mental health of Asian immigrants, only one study has assessed the relationship between

immigrant status and mental health for Filipinos. Mossakowski (2007) found that the immigration paradox applies to Filipinos, yet her study did not adequately explain the nature of this relationship, nor did it offer a rigorous test of competing frameworks that may better explain this finding.

Problem Statement. This study addresses the extent to which the findings in Mossakowski's (2007) study are better explained by additional theories of immigrant migration. This study has two general research questions (1) when considered as a main effect, does damaging acculturation, selective migration, relative deprivation, or native language theory explain the effects found in the previous study? and (2) when all four theories are included in the model, which theory(s) is/are best able to explain the immigrant paradox as demonstrated previously?

To answer these two general research questions, this study examines the relationship between structural (child immigrants status and poverty rates according to city of birth) and cultural (U.S. nativity, Filipino language use) variables on depression. Lastly, interactions between ethnic identification, language use, and nativity are examined in order to provide a richer analysis of the findings.

The first structural variable is a measure of selective migration theory that argues that successful immigrants (i.e., those who did not return to their home country) have a resiliency to stress that is better than their homeland peers. It assumes this resiliency is not genetically or socially transferable to subsequent generations. This effect is credited to the assumptions that child immigrants are randomly selected to migrate and that this random selection is representative of the native non-migrant population in the homeland. The method of testing this theory is in line with the previous study (Mossakowski 2007),

and compares rates of depression among child and non-child immigrants. Hypothesis 1, if selective migration theory explains the immigration paradox, then child immigrants are expected to have higher levels of depression than foreign-born immigrants.

The second structural variable measures relative deprivation theory. Relative deprivation theory posits that individuals judge their wellbeing according to their peers such that immigrants compare their well-being to their homeland peers and second and subsequent generations compare themselves to economically successful white Americans; this effect will manifest itself in two ways according to nativity. Hypothesis 2a, immigrants who are born into more impoverished areas will have better mental health than immigrants from less impoverished areas. Hypothesis 2b, U.S. born Filipinos in California will be less depressed than U.S. born Filipinos in Hawaii since California has a higher poverty rate than Hawaii.

The first cultural variables measures damaging acculturation theory. Damaging acculturation theory states that U.S. culture is noxious to minorities, and the more exposure a minority has to U.S. culture, the less healthy they will be. If damaging acculturation explains the immigrant paradox, then we expect U.S. born Filipinos, who have lived in the U.S. their entire life and have had greater exposure to U.S. culture, to be more depressed than foreign born Filipinos. Hypothesis 3, Foreign born Filipinos who have spent more time in the U.S. (i.e., U.S. born and child immigrant Filipinos) will have greater levels of depression than those who have spent less time in the U.S. (adult immigrants).

Although it hasn't been applied to mental health, ethnic identification has been shown to increase self worth among Filipino Americans (Strobel 1996, Wolfe 1997,

Mossakowski 2007). It is reasonable to expect that Filipino mental health may be positively influenced by ethnic identification. Hypothesis 4a, the relationship between time in the U.S. and levels of depression may be wholly or partially explained by ethnic identification.

It is possible that Filipinos who identify as Filipino can be expected to have a positive correlation between time in the U.S. and depression rates. Also, Filipinos who do not identify as Filipino can expect to have a negative correlation between time in the U.S. and mental health. Hypothesis 4b there will be an interaction between ethnic identity and time in the U.S. Ethnic identity is controlled for in all models dealing with damaging acculturation and native language.

The second cultural variable measures native language theory. Native language theory asserts that the ability to verbally use ethnic language improves minority mental health as the ability to speak in the native language allows the individual to integrate into minority culture. Without the ability to use native language, the individual may be unable to integrate into ethnic enclaves, which should lead to increased stress and lower mental health. In other words, native language may be a resource that positively influences Filipino mental health. Native language theory is important beyond acculturation because native language stresses the importance of acceptance into the minority culture whereas acculturation focuses on the adaptation of minorities the dominant culture. Hypothesis 5: Filipino language use will reduce levels of depression.

This study uses data from the Filipino Area Community Epidemiology Study (FACES) to answer these questions. Although there are other sources of Asian mental

health data (e.g., National Latino and Asian American Study), FACES is the best source of Filipino American data for this study.

METHODS

Data. This study utilizes the FACES data. Data were collected between 1998 and 1999 in San Francisco, CA and Honolulu, HI. Data were collected in three phases (Kiang and Takeuchi 2009). First, census tracts with the highest percent of self-identified Filipino households were selected. Secondly, of these selected tracts, neighborhood blocks were randomly selected. Lastly, households were randomly selected from each block. Bilingual speakers, who were fluent in both English and Filipino (Tagalog or Ilocano dialect), administered the surveys face to face with the head of the household, and the response rate is 78% (Mossakowski, 2007). This data is generalizable to both foreign and native-born Filipinos in Hawaii and California.

Dependent Variable. The dependent variable for this study is psychological distress. Psychological distress is measured by the average of 14 variables that assess symptoms of depression and anxiety during the past 30 days ($\alpha = .93$). There were five possible response choices for these questions: not at all, a little, moderately, quite a bit, and extremely. Responses were coded so that higher scores relate to higher levels of psychological distress. These measures were standardized and transformed such that the sample mean is 100 and the standard deviation is 10. (Variable descriptions and metrics are provided in Table 1, and means, standard deviations, and ranges are provided in Table 2. Select indices are described in detail in Appendix A.)

Independent Variables. Age at immigration is used as a proxy measure for selective migration, child immigrants are compared to adult immigrants.⁶ For the

⁶ Without data from areas of emigration in the Philippines or return migration data to measure Salmon Bias, we must make two assumptions in order to test this hypothesis with the current data. First, we must assume that children immigrate at random rates,

purpose of this study, child immigrants are operationally defined as persons who emigrated from the Philippines at the age of 12 or younger; at the time of data collection, all respondents were 18 or older. In line with Mossakowski's previous study (2007), a child immigrant is defined as an individual who immigrated at less than 12 years of age, also known as the 1.5 generation.

Damaging acculturation is measured by nativity.⁷ Nativity is dummy coded, such that foreign born immigrants (both adult and child immigrants) are the reference category and U.S. born Filipino Americans are the observation category. According to damaging acculturation, we can expect U.S. born Filipinos to have a higher level of psychological distress since they have the most exposure to U.S. culture.

Relative deprivation is measured by local poverty rates according to place of birth. The main argument of relative deprivation is that an individual's subjective wellbeing (e.g., perceived life chances, income, opportunity for success, etc.) is judged in reference to his or her peers. The application of relative deprivation to the immigration paradox argues that immigrants compare their wellbeing to peers from their country of origin, whereas U.S. born individuals compare themselves to other U.S. born residents. In light of this, it is appropriate for this study to use regionally specific, aggregate measures of poverty in order to measure relative deprivation.

compared to adult Filipinos, and by means of this random selection children immigrants have similar types of resiliency as native, non-immigrated Filipinos. Second, we must assume that immigrant resiliency is not genetically transferred to their progeny; in other words, a mentally healthy immigrant is assumed to be unable to socialize his or her resiliency into the U.S. born child. These assumptions were assumed, although not explicitly stated, by Mossakowski (2007).

⁷ While Mossakowski (2007) included length of time in U.S. as a measure of damaging acculturation, length of time in the U.S. is not significantly related to depression and is excluded from subsequent analyses.

For U.S. born Filipinos, relative deprivation is calculated according to poverty levels by state of residence. According to the U.S. Census Bureau (2003), 12.7% of Hawaii's population lives below the poverty line and 17.7% of California's population lives below the poverty line. These statistics are assigned to Hawaii and California residents, respectively.

For foreign born Filipinos, relative deprivation is measured according poverty in region of birth. The Philippines is divided into 16 regions. The National Statistical Coordination Board of the Philippines (NSCB) conducts the constitutionally mandated 10-year census and publishes poverty rates according to region. This study uses NSCB poverty statistics from 1997 since regional poverty rates are relatively stable over time and 1997 is the oldest publically available data. These statistics are assigned to foreign born Filipinos according to region of birth and missing scores are assigned the national poverty statistic (28.1%). Appendix A reports NSCB poverty statistics by region of the Philippines

Native language is measured by the use of Filipino language in as measured by two constructs with two variables each (four variables total). The first construct is receptive Filipino language, and the second construct is Filipino cognition. Responses were constructed into a balance scale, positive scores indicate a more Filipino language use, negative scores indicate more English language use, and a zero score as having equal use of both Filipino and English.

Control Variables. This study includes a range of control variables (lifetime racial discrimination, income, sex, employment, marital status, age, and place of residence.) Immigrant status is measured by a self-reported response to the question

“Where were you born?” Results are dummy coded such that foreign born is the reference group and U.S. born and child immigrants are observation groups.

Lifetime racial discrimination is measured by three questions (alpha = .78) that assess whether or not a person has experienced discrimination due to his or her race. An affirmative answer to one or more of the three questions is dummy coded as having experienced lifetime racial discrimination (1).

Income is measured by annual household income. The annually household income is divided into five brackets: less than \$25,000 (1), \$25,000 - \$49,000 (2) \$50,000 - \$99,000 (3), \$100,000 - \$199,999 (4), and \$200,000 or more (5). To avoid listwise deletion, linear imputation (SPSS Inc. 2009) is used for the missing scores. The missing scores (10% of the sample) were not significantly related to Psychological Distress.

Sex is dummy coded such that males are the reference group. Education is measured as years of education achieved and coded such that higher scores relate to greater levels of education. Employment is measured as whether or not the respondent is currently employed; results are coded such that unemployed persons are the reference group. Marital status is divided into three variables: married, previously married, and never married; each variable is dummy coded and in regression analyses, married persons are the reference group. Age is the respondent’s age in years. Place of residence is dummy coded such that Honolulu is the reference group.

RESULTS

Mean Levels of Psychological Distress. Table 2 displays the sample means on all variables used in this study. Adult immigrants have significantly lower levels of psychological distress, are older, have lower incomes, have experienced less discrimination, and have higher levels of Filipino language use. Child immigrants have the highest income, are the youngest, are most likely to live in San Francisco, have experienced the most lifetime discrimination. The U.S. born speak the least amount of English and experienced lower levels of poverty in city of birth.

Structural Variables. Using ordinary least squares regression analysis, I investigate the relationship between structural variables (child immigrant status and relative poverty) and psychological distress. Model 1 in Table 3 shows that child immigrants and U.S. born Filipinos have higher levels of psychological distress than foreign born Filipinos. Model 2 indicates that, with the significant control variables included in the model⁸, child immigrants and U.S. born Filipinos maintain higher levels of psychological distress than their foreign born peers. It is interesting to note, however, that adding these control variables reduces the magnitude of psychological distress scores between child and adult immigrants by 60% ($B_{\text{Model1}} = 4.367$; $B_{\text{Model2}} = 1.763$). Model 3 reveals that poverty in city of birth is not significantly associated with psychological distress scores.

Cultural Variables. Next, I examine cultural variables. Table 4 Model 1 is the best model from Table 3 (Table 3 Model 2). Table 4, Model 2 replicates Mossakowski's

⁸ Although Mossakowski (2007) included age, income, education, individualism, and collectivism in her regression analyses, these variables were not significantly related to depression and were excluded from subsequent analyses.

(2007) finding that a higher level of ethnic identification reduces psychological distress. In Model 3, language is shown to significantly reduce psychological distress⁹. When included simultaneously in the model (Model 4), both ethnic identification and language reduce psychological distress and reduces the difference between U.S. born and adult immigrants by 28% ($b_{\text{Model1}}=2.491$; $b_{\text{Model4}}=1.609$), but the difference between U.S. and foreign born adults remains significant.

Table 5 explores interaction effects for cultural variables¹⁰. Model 1 (graphed in Figure 1) replicates Mossakowski's (2007) finding that the effect of ethnic identification differs significantly for both U.S. and foreign born Filipinos. Figure 1 shows that U.S. born Filipinos with low levels of ethnic identification have higher levels of psychological distress than U.S. born Filipinos with high ethnic identification. While ethnic identification is related to lower psychological distress rates for foreign born Filipinos, the magnitude of this relationship is not as strong as that of their U.S. born peers.

Model 2 includes explores three way interactions between ethnic identification, language, and nativity (U.S. born or child immigrant.) In this model, U.S. born Filipinos are not significantly different from foreign born Filipinos according to ethnic identification, language, or ethnic identification and language. As a result, these non-significant interactions were dropped from the analysis; the most accurate model is Model 3.

⁹ Because this study is only interested in the effect of Filipino Language use on depression, a one-tailed test of significance is used when testing language.

¹⁰ When entered individually, other interactions were not significant (i.e., language and ethnic identification; language and place of residence; language and level of education; child immigrant and ethnic identification; nativity and poverty in city of birth; nativity and household income.)

Figure 2 (Parts A, B, and C) illustrates the three way interaction from Model 3. Figure 2 Part A shows the relationship between ethnic identification and language for foreign born Filipinos. At low levels of ethnic identification, foreign born adult immigrants who use higher levels Filipino language have lower levels of psychological distress; however, at high levels of ethnic identification, the effect of language is less pronounced. Conversely, adult immigrants who have low levels of Filipino language and low ethnic identification have higher levels of psychological distress, and as ethnic identification increases for these low language Filipinos, their psychological distress levels improve.

Figure 2 Part B displays the relationship between ethnic identification and language for child immigrants. At low ethnic identification, child immigrants with higher levels of Filipino language are much more depressed than child immigrants with high levels of Filipino language. As ethnic identification increases, however, the difference between high and low Filipino language use is reduced. This trend is opposite of the trend found in adult immigrants (Figure 2 Part A).

Figure 2 Part C illustrates that U.S. born and adult immigrants follow, roughly, the same trend in terms of the relationship between ethnic identification, language use, and psychological distress. At low levels of ethnic identification, language is related to lower levels of psychological distress. As ethnic identification increases, this difference is negated

DISCUSSION AND FUTURE RESERACH

This study examined the extent to which cultural and structural factors predicted psychological distress for Filipino Americans. This study replicates the findings of Mossakowski (2007) that selective migration, as measured by child immigrants is a potential explanation of the immigration paradox. This study also adds measures of relative deprivation and negative language use, and tests the interaction between ethnic identification and nativity that was reported by Mossakowski but not tested for significance by her. The present study also examines the interaction between ethnic identification, nativity, and native language use for Filipino Americans.

Mean comparisons show that there is diversity within the Filipino American experience. Household income, perceived discrimination, poverty in city of birth, and native language use vary among all three groups, and this indicates that nativity affects the Filipino American experience. This calls into question Mossakowski's hypothesis about selective migration.

Structural Variables. Based on the analyses, structural variables are not significant predictors of psychological distress for Filipino Americans. The relative deprivation explanation was not supported, and when cultural variables were added into the model the difference between child immigrant and non-child immigrant (U.S. born and foreign born adult immigrants) is explained away.

If the theory of relative deprivation explained the immigration paradox, then poverty in city of birth would be negatively associated with psychological distress. Our analyses did not find this. Instead, our findings indicated no significant difference according to poverty in city of birth. Perhaps relative deprivation is more applicable to

war-torn refugee immigrants, as studied by Portes and Rumbaut (2001), than Filipino immigrants. It is possible that longitudinal data pre- and post-migration would be a better measure of relative deprivation among Filipinos.

If selective migration explained the immigration paradox, then child immigrants would be more depressed than adult immigrants. When language and ethnic identification variables were excluded from the model, child immigrants had significantly higher levels of psychological distress compared to adult immigrants. However, when language or ethnic identification is included in the model, the effect of being a child immigrant is explained away. Given this finding, we are only able to partially support the theory of selective migration. Since the 1965 Immigration Act places greater priority on migration for family reunification, and less priority on skilled workers, it is possible that less resilient immigrants are admitted to the U.S. in order to reunite with their families. As a result of this structural change the first wave of immigrants (i.e., “anchor migrants”) may be more resilient than their peers, but subsequent waves may have less resilience. Future studies should examine immigration order (e.g., whether or not the respondent is first person in the family to immigrate) in order to address this issue.

Cultural Variables. If damaging acculturation explained the immigration paradox, then U.S. born Filipinos should have highest levels of psychological distress, followed by child immigrants, and adult immigrants should have the lowest levels of psychological distress. The analyses found that U.S born Filipino Americans have the worst levels of psychological distress, until the interaction of ethnic identification and language is introduced into the model. With these interaction terms, child immigrants with low ethnic identification and low ethnic identification are shown to have the worst levels of

psychological distress. Due to this finding, we are not able to support the theory of damaging acculturation. Exposure to U.S. culture, measured by U.S. nativity, increases psychological distress, but this effect is less drastic when cultural variables (ethnic identification and native language use) are controlled. Perhaps involvement in the Filipino community mediates the effect of damaging acculturation. In respect to this, future studies should include variables that capture community specific Filipino resources.

If native language theory explained the immigration paradox, then Filipinos who speak more Filipino should experience less psychological distress. As predicted, the analyses shows that Filipino language use reduces psychological distress in all samples, except for child immigrants with low ethnic identification (discussed below). This study is able to support the theory of native language. This finding is important because, to the author's knowledge, this is the first study to find that native language use is beneficial to Asian American mental health. Filipino language use may allow Filipino Americans access to coping and support networks that are not available to English-only speaking Filipino Americans. Future research must explore the relationship between Filipino language use and mental health.

Building upon the work of Mossakowski (2007), this study found the interaction between nativity and ethnic identification on psychological distress to be statistically significant. Ethnic identification reduces psychological distress among Filipino Americans. Compared to learning Filipino language, it is easier for an adult to learn about their cultural heritage and find positive reasons to identify with his or her culture. Instead of funding traditional mental health resources (e.g., community counseling

centers) it may be beneficial to provide funds for educational, Filipino ethnic programs and services (e.g., Filipino American Student Association, Filipino Community Association, etc.)

A complex three-way interaction was found between ethnic identification, language, and nativity. For U.S. born and adult immigrants, Filipino language use interacts with ethnic identification such that high levels of ethnic identification compensate for the detrimental effect of low Filipino language use. It is plausible that U.S. born Filipinos who both (a) experience Filipino targeted discrimination and (b) do not identify as Filipino will feel emotionally distressed due to this perception of inappropriate racism. Filipino language, however, may allow Filipinos access to cultural support networks that allows them to cope with this discrimination. It may also be that adult immigrants who use higher levels Filipino language are more integrated into their minority community insofar as their language allows access (via social networks) to ethnically specific coping resources—access that is denied to non-Filipino speakers. Future studies should examine the extent to which Filipino language use interacts with community involvement for Filipino Americans.

For child immigrants with low ethnic identification, higher levels of Filipino language use increases psychological distress, but this effect is reduced as ethnic identification increases. English language may be an important cultural tool for child immigrants, and it may be that inability to speak English leaves child immigrants at greater risks for teasing, bullying, and social estrangement by their childhood peers. Future research on language discrimination in primary education may provide insight into this finding.

The results of this study suggest that cultural factors are more important than structural variables when explaining psychological distress among Filipino Americans. Furthermore, it is important that future studies of Filipino mental health include variables that measure Filipino language use and ethnic identification in order to fully understand Filipino Americans.

Limitations. There are three limitations in this study. First, the measures of psychological distress used in this study may be less applicable to Filipino Americans. Asian Americans, in general, report higher levels of somatization than White Americans (Uba 1994). Since the measure in the current study only has one measure of somatization the measure may underreport psychological distress among Filipinos. Future studies should be sensitive to the ways in which Filipino Americans' experience of psychological distress may be distinctive.

Second, the only available measure of relative deprivation was a proxy measure. It would have been ideal to have quality of life data for Filipinos living in the Philippines, but instead this study utilized state and regional level poverty measures. Second, the data was only collected from Filipinos in Honolulu, HI, and San Francisco, CA. Given the diversity of the Filipino American experience, it is possible that these results may be limited to Filipinos in Honolulu and San Francisco and inapplicable to Filipinos living outside of these areas (e.g., Filipinos who live in the rural south may not follow the trends in the data.) Third, the measure of damaging acculturation leaves room for improvement. A better measure of damaging acculturation would control for both exposure to and internalization of U.S. culture.

CONCLUSION.

This study suggests that cultural variables must be considered when examining Filipino mental health. Relative deprivation was not associated with psychological distress, and the effect of selective migration is explained away when for language and ethnic identification are controlled. Use of native language benefits U.S. born and adult immigrant Filipinos, but is damaging to child immigrants with low ethnic identification. Future studies of Filipino mental health and immigration must include the cultural variables (e.g., native language use and ethnic identification) in order to fully understand the Filipino Americans mental health.

REFERENCES

- Alegria, Margarita, Glorisa Canino, Frederic Stinson, Bridget Grant. 2006. "Nativity and DSM-IV Psychiatric Disorders Among Puerto Ricans, Cuban Americans, and Non-Latino Whites in the United States: Results from the National Epidemiologic Survey on Alcohol and Related Conditions." *Journal of Clinical Psychiatry* 67:56-65.
- Bankson, Carl L. III, and Min Zhou. 1995. "Effects of Minority-Language Literacy on the Academic Achievement of Vietnamese Youths in New Orleans." *Sociology of Education* 68:1-17.
- Breslau, Joshua, Sergio Aguilar-Gaxiola, Guilherme Borges, Rubey Cecilia Castilla-Puentes, Kenneth Kendler, Maria-Elena Medina-Mora, Maxwell Su, and Ronald Kessler. 2006. "Mental Disorders Among English-speaking Mexican Immigrants to the U.S. Compared to a National Sample of Mexicans." *Psychiatry Research* 151:115-22.
- Buriel, Raymond. 1984. "Integration with Traditional Mexican-American Culture and Sociocultural Adjustment." in *Chicano Psychology*, edited by Joe L. Martinez and Richard H. Mendoza. New York: Academic Press.
- Burnam, Audrey, Richard Hough, Marvin Karno, Javier Escobar, and Cythnia Telles. 1987. "Acculturation and Lifetime Prevalence of Psychiatric Disorders Among Mexican American in Los Angeles." *Journal of Health and Social Behavior* 28:89-102.

- Escobar, Javier, Constana Hoyos Nervi, and Micahel Gara. 1999. "Immigration and Mental Health: Mexican Americans in the United States." *Harvard Review of Psychiatry* 8:64-72.
- Escobar, Javier. 1998. "Immigration and Mental Health: Why Are Immigrants Better Off?" *Archive of General Psychiatry* 55:781-2.
- Gee, Gilbet, Annie Ro, Salma Shariff-Marco, and David Chae. 2009. "Racial Discrimination and Health Among Asian Americans: Evidence, Assessment, and Directions for Future Research." *Epidemiologic Reviews* 31:130-51.
- Gee, Gilbert, and Ninez Ponce. 2010. "Associations Between Rcial Discrimination, Limited English Proficiency, and Health-Related Quality of Life Among 6 Asian Ethnic Groups in California." *Research and Practice* 100:888-95.
- Grant, Bridget, Frederic Stinson, Deborah Hasin, Deborah Dawson, Patricia Chou, and Karyn Anderson. 2004. "Immigration and Lifetime Prevalence of DSM-IV Psychiatric Disorders Among Mexican Americans and Non-Hispanic Whites in the United States." *Archive of General Psychiatry* 61 1226-33.
- Hovey, Joseph, Sheena Kim, and Laura Seligman. 2006. "The Influences of Cultural Values, Ethnic Identity, and Language Use on the Mental Health of Korean American College Students." *The Journal of Psychology* 140:499-511.
- Hurtado, Aida, and Carlos Arce. 1986. "Mexicans, Chicanos, Mexican Americans, or Pochos...?Que somos? The Impact of Language and Nativity on Ethnic Labeling." *Aztlan* 17:103-30.
- Kuo, Wen, and Yung-Mei Tsai. 1986. "Social Networking, Hardiness and Immigrant's Mental Health." *Journal of Health and Social Behavior* 27:133-49.

Leu, Jaxin, Irene Yen, Stuart A Gansky, Emily Walton, Nancy Adler, and David Takeuchi.

2008. "The Association Between Subjective Social Status and Mental Health Among Asian Immigrants: Investigating the Influence of Age at Immigration." *Social Science & Medicine* 66:1152-64

Liu, John, Paul Ong, Carolyn Rosenstein. 1991. "Dual Chain Migration: Post 1665 Filipino Immigration to the United States." *International Migration Review* 25:487-513.

Montazer, Shirin, and Blair Wheaton. 2011. "The Impact of Generation and Country of Origin on the Mental Health of Children Immigrants." *Journal of Health and Social Behavior* 52:23-42.

Mossakowski, Krysia. 2007. "Are Immigrants Healthier? The Case of Depression among Filipino Americans." *Social Psychology Quarterly* 70:290-304.

National Statistical Coordination Board. 2005. "Estimation of Local Poverty in the Philippines." www.nscb.gov.ph.

Ortega, Alexander, Robert Rosenheck, Margarita Alegria, and Rani Desai. 2000. "Acculturation and Lifetime Risk of Psychiatric and Substance Use Disorders Among Hispanics." *The Journal of Nervous and Mental Health* 188:728-35.

Ortiz, Vilma, and Carlos Arce. 1984. "Language Orientation and Mental Health Status Among Persons of Mexican Descent." *Hispanic Journal of Behavioral Sciences* 6:127-43.

Rondilla, Joanne. 2002. "The Filipino Question in Asia and the Pacific: Rethinking Regional Origins in Diaspora" as printed in *Pacific Diaspora*, edited by P. Spickard, and J. Rondilla. Hawaii: UH Press.

- Sentell, Tetine, Martha Shumway, and Lonnie Snowden. 2007. "Access to Mental Health Treatment by English Language Proficiency and Race/Ethnicity." *Journal of General Internal Medicine* 22 (Supplement 2):289-93.
- Spencer, Michael, and Juan Chen. 2004. "Effect of Discrimination on Mental Health Service Utilization Among Chinese Americans." *American Journal of Public Health* 94:809-14.
- Takeuchi, David, Margarita Alegria, James Jackson, and David Williams. 2007. "Immigration and Mental Health: Diverse Findings in Asian, Black, and Latino Populations." *American Journal of Public Health* 97:11-12.
- Uba, Laura. 1994. *Asian Americans*. New York: The Guilford Press.
- Vega, William A., Bohdan Kolody, Sergio Aguilar-Gaxiola, Ethel Alderete, Ralph Catalano, and Jorge Caravento-Anduaga. 1998. "Lifetime Prevalence of DSM-III-R Psychiatric Disorders Among Urban and Rural Mexican Americans in California." *Archives of General Psychiatry* 55:771-78.
- Vega, William A. and Rumbaut Ruben G. 1991. "Ethnic Minorities and Mental Health." *Annual Review of Sociology* 17:351-83.
- Wolf, Diane L. 1997. "Family Secrets: Transnational Struggles Among Children of Filipino Immigrants." *Sociological Perspectives* 40:457-482.
- Yip, Tiffany, Gilbert C. Gee, and David T. Takeuchi. 2008. "Racial discrimination and Psychological Distress: the Impact of Ethnic Identity and Age Among Immigrant and the United States-Born Asian Adults." *Developmental Psychology* 44:787-800.

Zhang, Wei, and Van Ta. 2009. "Social connections, immigration-related factors, and self-rated physical and mental health among Asian Americans." *Social Science & Medicine* 68:2104-112.

TABLES.

Table 1. Variable Descriptions, Metrics, Means, and Standard Deviations for Filipino Americans (N=2,285).

Variables	Description	Metric
Psychological Distress	Standardized levels of depressive symptoms	mean = 100; sd = 10
Female	Gender	0 = male; 1 = female
Age	Years of Age at time of the Survey	18 years old - 65 years old
Married	Currently married	0 = else, 1 = currently married
Never Married	single, unmarried	0 = else, 1 = never married
Previously Married	divorced, separated, or widowed	0 = else, 1 = previously married
Household Income	Annual household income (Missing cases were dealt with using Linear Interpolation)	1 = <\$25,000, 2 = \$25,000-\$49,999, 3 = \$50,000-\$99,999, 4 = \$100,000-199,999, 5 = \$200,000 or more
Education	years of formal education	0 = none, 1 = 1 year, ... 12 = high school diploma or GED, 13 = 1 year of college, 14 = 2 years of college, ... 17 = college degree, 18 = Graduate/Professional Degree
Employment	Currently Employed	1 = employed, 0 = not currently employed
San Francisco	Place of Residence	1 = San Francisco, 0 = Honolulu
Ethnic Identification	Level of ethnic identification	0 = weak ethnic identification, 3 = strong ethnic identification
Lifetime Discrimination	Has respondent ever experienced racial/ethnic discrimination	0 = never, 1 = perceived discrimination
U.S. Born	Nativity Status	0 = Foreign Born, 1 = US Born
Age at Immigration	Age at time of immigration	0 - 65 Years of Age
Child Immigrant	Immigrated before 12 years of age	1 = immigrated at 0 - 11 years of age, 0 = immigrated after 12 years of age or US born
Time in U.S. ^a	number of years living in the US	0 = immigrated within the past year, 1 = immigrated 1 year ago, 2 = immigrated 2 years ago, ... =55 = immigrated 55 years ago

^aTime spent in the U.S. only applies to Immigrant Filipinos.

Table 2. Descriptive Statistics: Means, Standard Deviations, and Ranges.

Variables	Full			Child		Adult	Range
	Sample	Immigrant	U.S. Born	Immigrant	Immigrant		
Sample Size	2285	1818	467	152	1666		
Psychological Distress*	100 (10)	99.393 (9.30)	102.35 ^c (9.30)	103.39 ^c (11.77)	99.02 (8.95)		93-169
Female*	.61 (.488)	.62 (.485)	.57 (.496)	.55 ^c (.50)	.65 (.483)		0-1
Age*	42.1 (13.4)	43.74 (12.68)	35.64 ^{bc} (13.91)	30.09 ^{ac} (8.22)	44.99 ^{ab} (12.28)		18-65
Married*	.65 (.477)	.713 (.453)	.407 ^c (.492)	.441 ^c (.498)	.738 (.440)		0-1
Never Married*	.22 (.416)	.160 (.366)	.467 ^c (.499)	.4408 ^c (.498)	.134 (.341)		0-1
Previously Married	.13 (.332)	.126 (.332)	.127 (.333)	.118 (.324)	.126 (.333)		0-1
Household Income*	2.34* (1.063)	2.293 (1.045)	2.539 ^{bc} (1.11)	2.788 ^{ac} (1.036)	2.247 ^{ab} (1.034)		1-5
Education*	11.81 (5.658)	11.793 (5.787)	11.9 ^b (5.13)	13.197 (4.457)	11.665 ^b (5.878)		0-18
Employment*	.74 (.438)	.77 (.420)	.63 (.484)	.79 ^a (.409)	.77 ^a (.421)		0-1
San Francisco	.43* (.495)	.44 (.497)	.38 ^b (.486)	.68 (.466)	.42 ^b (.493)		0-1
Ethnic Identification*	2.38 (.497)	2.402 (.462)	2.271 ^c (.603)	2.197 ^c (.544)	2.420 (.449)		0-3
Lifetime Discrimination*	.193 (.394)	.183 (.386)	.231 ^{bc} (.422)	.355 ^{ac} (.4802)	.167 ^{ab} (.373)		0-1
Foreign Born	.796 (.403)	1 (0)	0 (0)	1 (0)	1 (0)		0-1
Age at Immigration ^{d*}	28.15 (13.462)	28.15 (13.46)		6.42 ^c (3.28)	30.14 ^b (12.23)		0-65
Child Immigrant*	.067 (.249)	.084 (.277)	0 (0)	1 (0)	0 (0)		0-1
Time in U.S. ^{d*}	15.24 (10.11)	15.24 (10.113)		22.23 ^c (8.26)	14.60 ^b (10.03)		0-55
Poverty in City of Birth*	22.26 (10.945)	24.15 (11.46)	14.93 ^{bc} (2.804)	18.67 ^{ac} (12.52)	24.65 ^{ab} (11.23)		4.8- 50.0
Language Scale*	-.0255 (3.18)	.923 (2.432)	-3.720 ^{bc} (3.070)	-2.56 ^{ac} (2.286)	1.238 ^{ab} (2.187)		-7-7

*Significant difference across the three immigrant groups: (a) U.S. Born, Child Immigrants, and Adult Immigrants, $p < .05$.

^aMean score is significantly different from U.S. Born, $p < .05$.

^bMean score is significantly different from Child Immigrants, $p < .05$.

^cMean score is significantly different from Adult Immigrants, $p < .05$.

^dTime in the U.S. and Age at Immigration only applies to Immigrant Filipinos.

Note: Means are given on the first line and standard deviations are in parentheses.

Table 3. Coefficients from Ordinary Least Squares (OLS) Regression Models Predicting Psychological Distress among Filipino Americans (N = 2,255).

	Model 1	Model 2	Model 3
Child Immigrant ^c	4.367***	1.763*	1.786*
U.S. Born ^c	3.329***	2.491***	2.399***
Female		1.987***	2.004***
Never Married ^a		1.968***	1.950***
Previously Married ^a		2.551***	2.523***
Employment		-1.948***	-1.936***
San Francisco ^b		5.741***	5.663***
Lifetime Discrimination		3.765***	3.756***
Poverty by City of Birth			-0.011
Intercept	99.026***	95.660***	95.942***
Adjusted R ²	0.025	0.168	0.171

*p < .05; ** p < .01; *** p < .001 (two-tailed tests)

^aMarried is the reference category.

^bHonolulu is the reference category.

^cAdult Immigrants are the reference category.

Table 4. Coefficients from OLS Regression Models Predicting Levels of Psychological Distress for Structural Variables among Filipino Americans (N = 2,250).

	Model 1	Model 2	Model 3	Model 4
Child Immigrant ^c	1.763*	1.548	1.276	1.092
U.S. Born ^c	2.491***	2.342***	1.727**	1.609*
Female	1.987***	1.979***	1.969***	1.961***
Never Married ^a	1.968***	1.858***	1.844***	1.742*
Previously Married ^a	2.551***	2.441***	2.640***	2.538***
Employment	-1.948***	-1.983***	-1.959***	-1.990***
San Francisco ^b	5.741***	5.604***	5.606***	5.474***
Discrimination	3.765***	3.887***	3.714***	3.837***
Ethnic Identification		-1.278**		-1.233**
Language Scale ^d			-.164*	-.158*
Intercept	95.660***	98.825***	95.968***	99.009***
Adjusted R ²	.168	0.172	.171	.175

*p < .05; ** p < .01; *** p < .001 (two-tailed tests)

*p < .05 (one-tailed tests)

^aMarried is the reference category.

^bHonolulu is the reference category.

^cAdult Immigrants are the reference category.

^dA one-tailed test for significance is used for Language

Table 5. OLS Regression Models Predicting Levels of Psychological Distress for Cultural Variables with Interactions (N = 2,244).

	Model 1	Model 2	Model 3
Child Immigrant ^c	1.297	11.130*	11.245***
U.S. Born ^c	6.695**	4.614	1.384*
Female	1.913***	1.889***	1.887***
Never Married ^a	1.735**	1.824***	1.794***
Previously Married ^a	2.542***	2.598***	2.623***
Employment	-1.965***	-1.934***	-1.944***
San Francisco ^b	5.523***	5.512***	5.555***
Lifetime Discrimination	3.811***	3.742***	3.729***
Ethnic Identification	-.574	-1.035	-1.000*
Language Scale ^d	-.140*	-1.290**	-1.029***
Ethnic Identification X U.S. Born	-2.154*	-1.221	
Ethnic Identification X Child Immigrant		-3.612	-3.642
Ethnic Identification X Language Scale		.461*	.366**
Language Scale X Child Immigrant		4.923**	4.668**
Language Scale X U.S. Born		.922	
Ethnic Identification X Language Scale X Child Immigrant		-1.860**	-1.766**
Ethnic Identification X Language Scale X U.S. Born		-.338	
Intercept	97.388***	98.308***	98.394***
Adjusted R ²	.177	.178	.181

*p < .05; ** p < .01; *** p < .001 (two-tailed tests)

*p < .05 (one-tailed tests)

^aMarried is the reference category.

^bHonolulu is the reference category.

^cAdult Immigrants are the reference category.

^dA one-tailed test for significance is used for Language as a main effect (Model 1), and a two-tailed test is used in subsequent models (Model 2 and Model 3).

Figure 1. Psychological Distress by Level of Ethnic Identification by Nativity

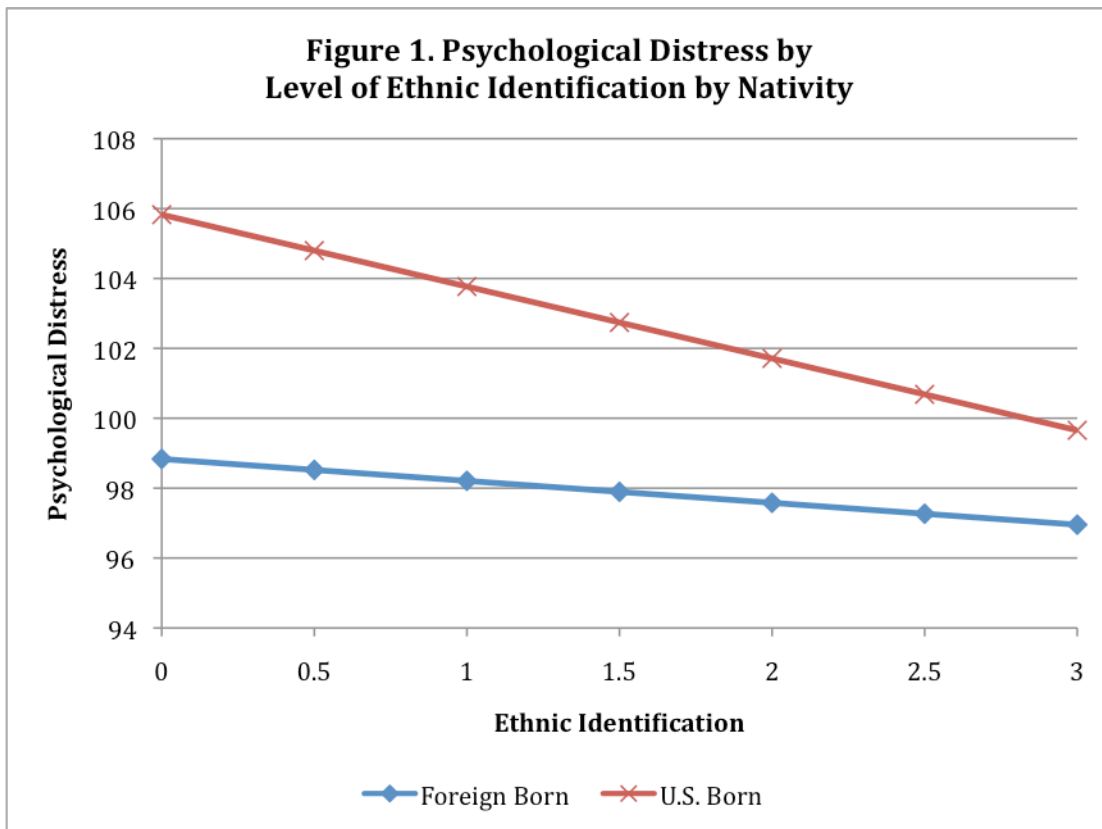


Figure 2 Part A. Psychological Distress by Level of Ethnic Identification for Filipino Adult Immigrants by Level of Filipino Language Use

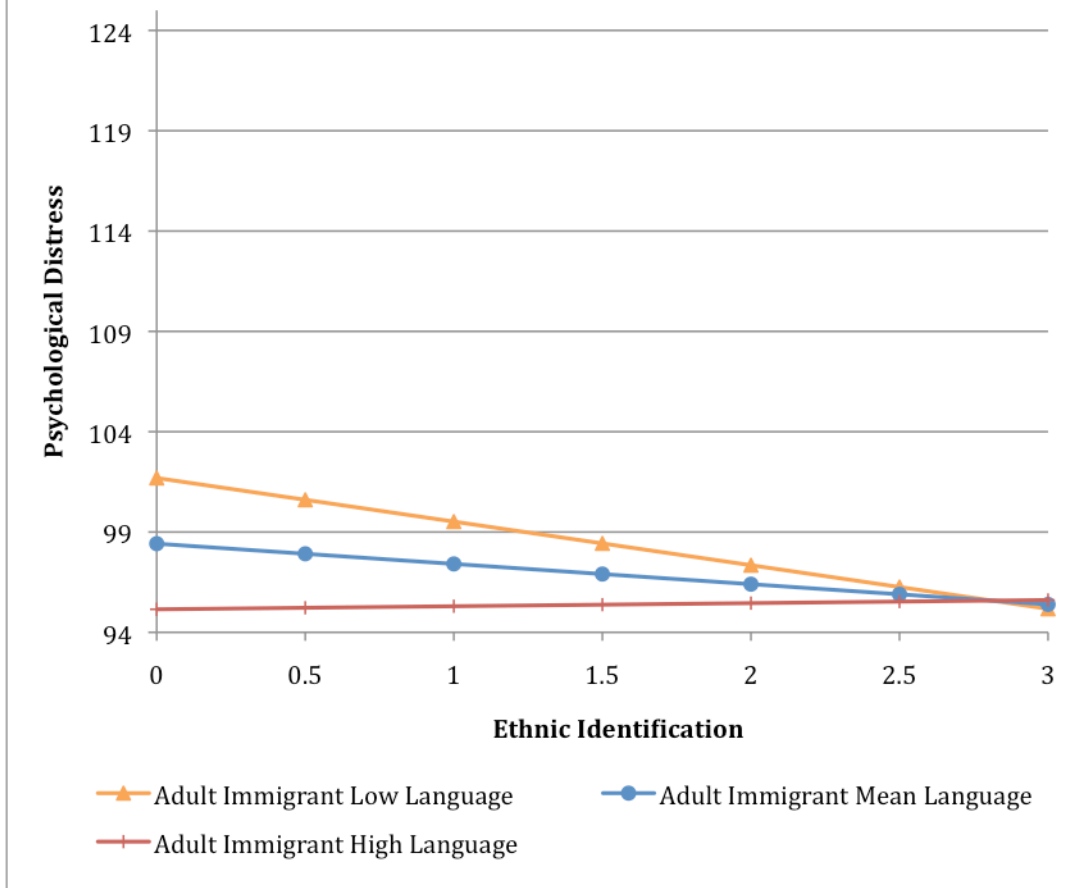


Figure 2 Part B. Psychological Distress by Level of Ethnic Identification for Filipino Child Immigrants by Level of Filipino Language Use

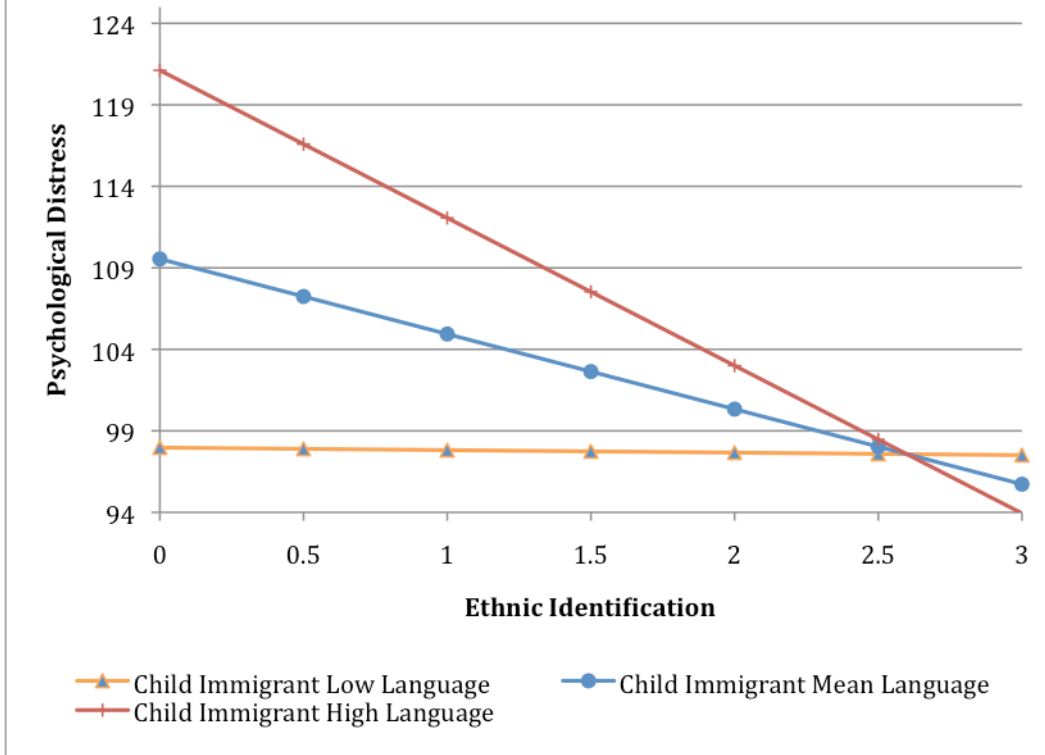
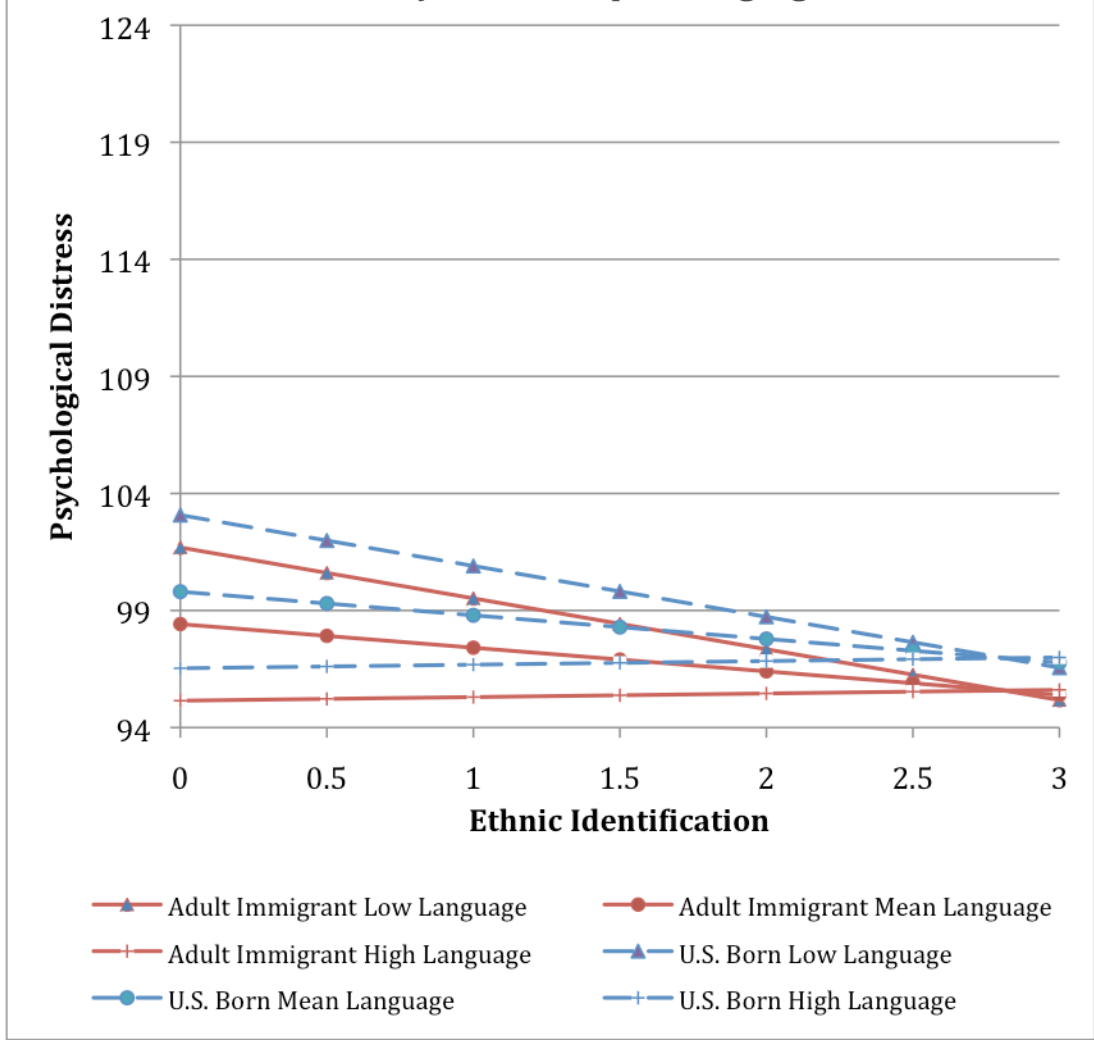


Figure 2 Part C. Psychological Distress by Level of Ethnic Identification for Adult Immigrant and U.S. Born Filipinos by Level of Filipino Language Use



APPENDIX A: DETAILED MEASURES.

Psychological Distress

During the past 30 thirty days including today, how much have you been bothered by this symptom? Extremely (4), Quite a Bit (3), Moderately (2), A Little (1) Not at All (0).

1. Feeling blue.
2. Heart pounding or racing.
3. Worrying too much about things.
4. Feeling hopeless about the future.
5. Feeling So restless you couldn't sit still.
6. Blaming yourself for things.
7. Feeling no interest in things.
8. Feeling tense or keyed up.
9. Feeling everything is an effort.
10. Feelings of worthlessness
11. Feeling low in energy or slowed down.
12. Feelings of being trapped or caught.
13. Feeling lonely.
14. Feeling fearful.

Relative Deprivation

“Where were you born? Please indicate city, province, region, state, and country.
City of birth was coded to one of the 16 administrative regions of the Philippines.

Ilocos Norte and Ilocos Sur (31.4), Cagayan (27.1), Luzon (13.9), Calabarazon and Mimaropa (22.8), Bicol (46.9), West Visayas (37.2), Central Visayas (29.8), East Visayas (39.9), Zamboanga (31.9), North Mindanao (37.8), Davao (31.1), Soccsksargen (45.3), Caraga (35.9), National Capitol Region and Manila (4.8), ARMM – Autonomous Republic of Muslim Mindanao (50.0), CAR – Cordillero Administrative Region (35.9), Philippines Other (28.1), Hawaii (12.7), California (17.7), U.S. Other (11.3).

Language

Language is measured by among two constructs, receptive Filipino language and cognitive Filipino usage. Both constructs are summed to create a balance scale with higher levels indicating more Filipino language use, zero scores indicating a balance between English and Filipino, and a negative score indicated more English language use.

Receptive Filipino Language is the sum of the following two questions: How well can you understand Filipino when it is spoken? Very well (3), Some (2), Not much (1), Not at all (0) and How well can you understand English when it is spoken? Very well (-3), Some (-2), Not much (-1), Not at all (0).

Filipino cognition is sum of the measure of agreement to the following statements. My thinking is done in Filipino language: Extremely often or almost always (4), Much or Very often (3), Moderately (2), Very little or not very often (1), Not at all (0). My thinking is done in the English language: (-4), Much or Very often (-3), Moderately (-2), Very little or not very often (-1), Not at all (0).

Income

What income category does the total annual HH income fall under? Please consider all sources of revenue, including income from your jobs or businesses, income from other members of this household, social security, retirement, public assistance, child support, or other benefits or pensions. <\$25,000 (1), \$25,000-\$49,999 (2), \$50,000-\$99,999 (3), \$100,000-199,999 (4), \$200,000 or more (5).

Education

What is the highest level of education [by year of schooling] you have completed? None (0), Elementary & Jr. High (1-8), Some High School (9-10), High School Diploma or GED (12), Some College (13-15), Vocational/Technical (23) College Graduate (17), or Graduate/Professional (18).

Ethnic Identification

To what extent do you agree or disagree with the following statements? Strongly Agree (3) Somewhat agree (2), Somewhat disagree (1), or Strongly disagree (0).

1. I have spent time trying to learn more about Filipino history, traditions, and cultures.
2. I am active in Filipino organizations and/or social groups.
3. I have a clear sense of my Filipino background and what it means to me.
4. I am happy that I am Filipino.
5. I have a strong sense of belonging to the Filipino community.
6. I understand what being Filipino means to me, in terms of how I relate to Filipinos and other ethnic groups.
7. In order to learn more about my Filipino background, I have often talked to other people about my Filipino culture and history.
8. I have a lot of pride in Filipinos and their accomplishments.
9. I participate in Filipino practices, such as special food, music, or customs.
10. I feel a strong attachment towards the Filipino community.
11. I feel good about my Filipino cultural and ethnic background.

Lifetime Racial Discrimination

Please tell us if any of these things have happened. Yes (1) or No (0).

1. Have you ever been treated unfairly or badly because of your race or ethnicity?
2. Have you ever been treated badly because you speak a different language?
3. Have you ever been treated unfairly or badly because you speak with an accent?

APPENDIX B: POVERTY INCIDENCE BY REGION IN THE PHILIPPINES IN 1997

Poverty Incidence by Region in the Philippines in 1997*	
Nation Wide	28.1
Region I	31.4
Region II	27.1
Region III	13.9
Region IV	22.8
Region V	46.9
Region VI	37.2
Region VII	29.8
Region VIII	39.9
Region IX	31.9
Region X	37.8
Region XI	31.1
Region XII	45.3
Region XIII (Caraga)	44.7
National Capitol Region (NCR)	4.8
Autonomous Republic of Muslim Mindanao (ARMM)	50.0
Cordillero Administrative Region (CAR)	35.9

*Poverty incidences refer to the proportion of families (or population) with per capita income less than the per capita poverty threshold to the total number of families (population).