

Psychological Distress among Foreign Born Americans: A Comparison among White, Chinese, Korean and Vietnamese Americans

Phu Phan, MSW, PhD

California State University Dominguez Hills
1000 E. Victoria St.
Carson, CA 90747 USA

Thanh V. Tran, PhD

Boston College
School of Social Work
McGuinn Hall 205,
Chestnut Hill, MA 02467 USA

Abstract

This study examines race/ethnic and age differences in psychological distress among foreign born Americans. We used the 2009 California Health Survey Interview (CHIS) that consisted of 5,573 foreign born older individuals aged 18 to 85 including 2,623 White, 792 Chinese, 829 Korean, and 1,329 Vietnamese respondents. Regression analysis was used via Stata 12.1. The results revealed that foreign born Americans aged 64 and under consistently reported a higher level of psychological distress than older respondents aged 65 and over across the four selected racial/ethnic groups. Marital status, education, income, and employment status had significant relationship with psychological distress. The findings suggest that both race/ethnicity and age should be taken into consideration in the understanding of psychological distress among immigrants.

Keywords: Immigrants, Mental Health, Aging, Depression, California Health Survey Interview, Asian Americans, White Immigrants

1. Introduction

Foreign born Americans made up 13% of the total U.S. population in the 2010 census. There were 28.2% of foreign born American from Asia and 12.1% from Europe, 2.0% from Northern America, and the remainders are from other continents. Immigrants from Europe and Northern America had a significantly greater advantage of English ability than those from Asia. They also had a lower poverty rate and were more likely to have health insurance than Asian immigrants (Hoeffel, Rastogi, Kim, & Shahid, 2012). Data from the National Health Statistics (NHS) indicated that as a group, Asian immigrants were less likely to suffer from serious psychological distress than White immigrants (cited by Dey & Lucas, 2006). Similarly a recent study found that older Asian Americans had a lower prevalence of serious psychological distress than older Whites (Kim, Bryan, & Parmelee, 2011). However, both studies categorized Asians into one group; thus the findings could be misleading because of the ethnic diversity within the Asian American population. Due to the lack of research comparing psychological distress between White and different groups of Asian immigrants, we examined race/ethnicity and age differences in psychological distress among adult White, Chinese, Korean, and Vietnamese immigrants drawing data from the 2009 California Health Interview Survey (CHIS), which is one of the largest health surveys in the United States with a diverse immigrant population (UCLA Center for Health Policy, n.d).

There is great diversity within Asian Americans. There are over 50 subgroups with different ethnicity, culture, English proficiency, religious traditions, histories, experience, and more than 100 languages (AAPCHO, 2009). The U.S. census data revealed that the Asian population has increased from 10,242,998 in 2000 to 14,674,252 in 2010. In 2010, there were 3,535,382 Chinese, 1,463,474 Korean, and 1,632,717 Vietnamese (Hoeffel, Rastogi, Kim, & Shahid, 2012). The three major ethnic Asian American groups selected for this study (Chinese, Korean, and Vietnamese) arrived in the U.S. with distinct culture, language, and history. Their differences warrant a comparison of their psychological distress between each other and with their White counterparts.

2. Literature Review

Race/Ethnicity and Mental Health Status

The Surgeon General's "A Supplement To Mental Health" emphasizes that culture and minority group status are important to consider not only in illness behavior, symptom expression, help-seeking patterns, and coping styles, but also risk and protective factors (U.S. Department of Health and Human Services, 2001). Asian-Americans are much less likely than Whites to report mental health problems to friends or relatives, psychiatrists, other mental health specialists, or physicians due to language and cultural barriers (Zhang, Snowden, & Sue, 1998; Abe-Kim et al, 2007). There have been inconclusive and conflicting findings on the status of mental health among different ethnic Asian groups. For example, some studies reported that Chinese Americans had low-to-moderate levels of depressive disorders but Koreans reported more depression (Takeuchi et al, 1998). Another study found Chinese-Americans slightly more depressed than Koreans (Ying, 1988). Among undergraduate students, Asian-Americans were more depressed than White Americans; however, Korean-Americans were significantly more depressed than Chinese-Americans, other Asian-Americans, and White Americans (Young, Fang, & Zisook, 2010). Older Korean-Americans were more distressed than non-Hispanic whites (Sorkin, Nguyen, & Ngo-Metzger, 2011). Within the Asian American population, older Korean manifested the highest level of psychological distress compared to Chinese, Japanese, Vietnamese, and Filipino (Kim et al, 2010).

Demographic Characteristics and Psychological Distress

The association between age and mental health is often related to how mental health is measured (US Dept. of Health and Human Services, 2001). Gouliou et al (2012) found that among healthy participants, symptoms of anxiety, depression, and somatization gradually increased with age, presenting their highest scores between the ages of 60-65 and after the age of 75. However, Kim & Choi (2010) found that the unadjusted 12-month prevalence rate of DSM-IV depressive, anxiety, or intermittent explosive disorder among older (60+) Asian-Americans was significantly lower than that among the younger cohorts. This suggests the older group had lower reactivity to physical health problems and better regulation of their emotions in the face of multiple life stressors. Jorm et al. (2005) found that psychological distress declined for women from 40 to 44 and for men from 60 to 64 years old.

A person's gender plays an important role in the understanding of psychological distress. Past research has found that women tend to exhibit greater levels of depression than men and symptoms of depression are about twice as high among older women than older men (Spence, Adkins, & Dupre, 2011). Marital status has been consistently demonstrated to be associated with psychological distress, with high levels of distress among the divorced and separated and low levels among the married (Kitson & Morgan, 1990; Spence, Adkins, & Dupre, 2011). Married individuals are better buffered psychologically than the unmarried individuals by virtue of the strong emotional attachments that develop between the spouses and/or children.

Individuals with higher education levels appear to experience less psychological distress (Miech, Power, & Eaton, 2007, Gavin et al, 2010). A meta-analysis of more than 50 studies showed that depression was inversely associated with socioeconomic status (SES) as defined by income or educational attainment (Lorant et al, 2003). Low income and low acculturated Asians were found to be at risk for undetected emotional or psychiatric problems (Chung et al, 2003). Employment status also has a significant relationship with psychological distress (Paul & Moser, 2009). Economic problems can have a debilitating effect on mental disorders including depression and suicides. For example, the recent Asian economic crisis led to a sharp increase in suicide mortality in East Asian countries (Uutela, 2010). Finally, length of residence tends to have an inverse or a U-shape association with psychological distress such that during the first few years of immigration, immigrants tend to experience higher levels of psychological distress, but after this initial stage, the longer the time immigrants live in the U.S., the lower their level of psychological distress (Wilton & Constantine, 2003; Tran, Manalo, & Nguyen, 2007).

This study addresses racial differences in psychological distress by comparing White immigrants and three selected groups of Asian immigrants. It also examines ethnic differences by comparing among three Asian immigrant groups. Finally, it explores how racial and ethnic differences vary between older and younger immigrants controlling for sex, marital status, education, income, and length of residence in the U.S.

3. Methods

Data Sources

The California Health Interview Survey (CHIS) from 2009 was used in this study. This is the fifth (5th) CHIS data collection cycle, which has been conducted every other year since 2001. This is one of the largest population-based telephone health surveys conducted in any state and in the U.S.

CHIS used Random Digit Dial (RDD) telephone survey to select and interview one adult aged 18 years old or older in each randomly sampled household. In households that have children under age 12 or adolescents age from 12 to 17, one child and one adolescent were also selected. Thus a maximum of three interviews could be conducted in each sampled household. The 2009 CHIS data consisted of 47,617 interviews conducted among adults aged 18 or older between September 2009 and April 2010. CHIS is also unique in that it is one of the largest health surveys that captures a rich and diverse sample of individuals from different races, ethnicities and language backgrounds.

Interviews were conducted in five languages: English, Spanish, Chinese (Mandarin and Cantonese dialects), Vietnamese, and Korean. Interviews in all languages were administered using Westat's computer-assisted telephone interviewing (CATI) system. The average length of an adult interview was 35 minutes. CHIS used both landline and cell-phone lists to select sampled households. In order to increase representatives of race ethnic subgroups, CHIS employed both disproportional stratified sampling and multiple frame sampling methods. Detailed description and discussion of CHIS sampling methods can be found online at the CHIS website (<http://www.chis.ucla.edu/>). CHIS center has not released its estimates of response rates for the 2009 survey yet. However, it will be available on its website.

Sample Size and Characteristics

The 2009 CHIS consisted of 5,573 older foreign born White, Chinese, Korean and Vietnamese respondent aged 18 to 85 including 2,623 White, 792 Chinese, 829 Korean, and 1,329 Vietnamese respondents. This selected sample made up by 59% of females. Seventy-two percent of respondents had some college education. Sixty seven percent were currently married. Fifty-three percent were employed. Seventy-eight percent were naturalized U.S. citizens and 79% have lived in the U.S. 15 or more years. Seventy-one percent spoke English "very well."

Measures

Dependent Variable

Psychological distress was measured by a six item-scale which was designed to detect serious mental illness in the past 30 day (Kessler et al, 2010). Respondents reported frequency of distress on a 4-point scale (0 = none of the time, 1 = a little of the time, 2 = some of the time, 3 = most of the time, and 4 = all of the time). Scores can range from 0 to 24. In this study, the scale's alpha reliability ranged from .79 for Vietnamese respondents, .80 for White respondents, .82 for Chinese respondents, and .84 for Korean respondents.

Independent Variables

Race/Ethnicity was self-reported and coded "1" for White, "2" for Chinese, "3" for Korean, and "4" for Vietnamese. Age was coded as "1" for 65 to 85 years old, and "0" for 64 years or under.

Demographic Covariates

Sex was coded "1" for female and "0" for male. Education was coded "1" for some college or higher and "0" for high school or less. Marital status was coded "1" for currently married or lived with partners, and "0" for otherwise. English was coded "1" for speaking well and very well, and "0" for some or poor. U.S. citizenship was coded "1" for yes and "0" for no. Years in the U.S. was coded for "1" year to 15 years or longer, and "0" for less than 15 years. Employment status was coded "1" for currently employed, and "0" for others. Income was measured as total annual household income in dollars. Due to its extreme variation, we used the log transformation of household incomes in our analyses.

Data Analysis

We used Stata 12.1 to analyze the data. Ordinary least squares regression (OLS) was used. First, we tested the unadjusted association of race with psychological distress (Model 1). Second, we tested the unadjusted association of age with psychological distress (Model 2).

Third, we tested the associations of race and age simultaneously to detect any mediation effect and possible sign of interaction (Model 3). Fourth, we tested the associations of race and age with the covariates (Model 4). Finally, we used the “PREDXCAT” procedure to test the interaction of effect of race and age with psychological distress. This procedure produces more meaningful and interpretable means and visual graphic of the interaction effect (<http://fmwww.bc.edu/repec/bocode/>).

4. Results

Table 1 describes descriptive statistics of the key variables in the analysis across four racial/ethnic groups. There are a few notable differences across the four groups. Foreign born Vietnamese Americans reported the lowest average of psychological distress followed by Chinese, White, and Koreans. However, foreign born Vietnamese American respondents had the lowest percentage of those who had some college education (51.39%) compared to foreign born White respondents (70.71%). Both foreign born Chinese respondents (76%) and foreign born Korean respondents (72%) had similar percent of people who had at least some college education. Foreign born White respondents (53%) and foreign born Vietnamese respondents (53%) had similar percent of employed respondents compared to 62% of foreign born Chinese Americans and 46% of foreign born Korean Americans. Foreign born Korean Americans reported the lowest percent of people who could speak English well (39%) compared to 96% of foreign born White, 65% Chinese, and 44% Vietnamese Americans. Overall, the data revealed some interesting differences in socioeconomic characteristics across four racial groups of foreign born Americans.

Table 1: Description of Variables Used In the Analysis (N = 5,573)

Variables	White (N = 2,623)	Chinese (N = 792)	Korean (N = 829)	Vietnamese (N = 1,329)
Race				
	Mean (S.E) or Percent			
Psychological Distress	3.44 (0.08)	3.22 (0.15)	4.63 (0.17)	3.32 (0.13)
Age (65 >)	40%	19.57%	33.78%	19.41%
Sex (Female)	60.92%	58.96%	62.93%	49.36%
Marital Status (Married/Lived with Partner)	60.16	73.36	74.19	72.99
Education ^a	6.15 (0.05)	6.29 (0.09)	5.82 (0.09)	4.48 (0.07)
Speak English Well	96.34%	64.77%	39.57%	44.39%
Employment Status (Employed)	53.22 %	61.74%	46.56%	53.20%
Income	85704.04 (1392.64)	81299.87 (2491.19)	64710.1 (2095.19)	52448.82 (1482.60)
U.S. Citizen	76.71%	78.03%	70.45%	87.74%
Years in US => 15 years	85.78%	70.71%	71.29%	77.13%

^a Education was coded from 1 to 10. No formal to Grade 8 =1, Grade 9-11 =2, Grade 12 or High School Diploma = 3, Some College = 4, Vocational = 5, AA Degree =6, BA/BS =7, Some Graduate School = 8, MA/MS =9, Ph.D. or equivalence =10.

Table 2: OLS Regression of Psychological Distress on Race, Age, and Control Variables

Psychological Distress	Model 1 Unadjusted Coef (S.E.) ^a	Model 2 Unadjusted Coef. (S.E.) ^a	Model 3 ^b Coef. (Se.E.)	Model 4 ^c Coef. (S.E.) ^a	95% Confidence Intervals
Race White=Reference					
Chinese	1.35 (.54)**		1.51(.52)**	1.54 (.51***)	.52, 2.55
Korean	-1.73 (.49)***		-1.64 (.50)***	-1.92 (.51)***	-2.94, -.90
Vietnamese	-1.38 (.38)***		-1.06 (.41)**	-1.89 (.40)**	-1.67, -.09
Income: 200 > Poverty Levels ^d		1.06 (.21)***	1.08 (.21)***	0.48 (.21)***	0 .05, 0.90
Sex (Female)				2.16 (.13)***	1.91, 2.42
Age				0.02 (.01)***	0 .01, 0 .02
Education				1.42 (.12)***	1.18, 1.67
Marital Status (Married)				1.22 (.14)***	0.93, 1.51
Employment Status (Employed)				0.13 .15)	-0.17, 0.44

^a Jknife Standard Error. * p <.05, ** p< .01, *** p < .001

^b Complex sampling design information: Number of Observations = 34,926, Population size = 149,429,996, Replications =80,Design DF =79, F (9,71) =90.48, p < .001

^c Complex sampling design information: Number of Observations = 34,926, Population size = 149,429,996, Replications =80,Design DF =79, F (12,68) =71.81, p < .001

^d 2009 Federal Poverty Level (FPL): 200% FPL indicates household incomes from \$21,660 for a household of 1 person to \$74,020 for a household of 8 persons (Federal Register, No. 14, January 23, 2009, pp. 4199-4201).

The results of OLS regression of psychological distress are reported in Table 2. It's important to note that the association of race and psychological distress was mediated significantly by age (see Model 1 and Model 2). In Model 1, psychological distress only differed significantly between foreign born Korean Americans and foreign born White Americans. However, in Model 3 after adjusted for age, all three groups of foreign born Asian Americans differed significantly compared to foreign born White Americans suggesting possible interaction effect. The results in Model 4 revealed that the associations of race and age with psychological distress remain significantly after adjusted for socioeconomic covariates.

Table 2: Unadjusted and Adjusted Associations of Race and Age with Psychological Distress

Psychological Distress	Model 1 Unadjusted Coef (S.E.) ^a	Model 2 Unadjusted Coef. (S.E.) ^a	Model 3 Coef. (S.E.)	Model 4 Coef. (S.E.) ^a	95% Confidence Intervals
Race White=Reference					
Chinese	-0.22 (0.18)		-0.45 (0.18)**	-0.62 (0.19)***	-0.99, -0.25
Korean	1.20 (0.18)***		1.13 (0.18)***	0.84 (0.19)***	0.44, 1.23
Vietnamese	-0.12 (0.15)		-0.35 (0.15)***	-.82 (0.18)	-1.17, -0.47
Age 65 ^{>d}		-1.03 (.11)***	-1.16 (0.13)***	-1.93 (0.16)***	-2.24, -1.62
Sex (Female)				0.10 (0.12)	-0.14, 0.34
Marital Status Married				-0.66 (0.14)***	-0.93, -0.39
Education				0.01 (0.02)	-0.04, 0.06
English				-0.09 (0.17)	-0.44, 0.24
Employment Status (Employed)				-0.61 (0.14)***	-0.89, -0.34
Income				-0.54 (0.07)***	-0.69, -0.39
U.S. Citizenship				0.19 (0.17)	-0.14, 0.53
Length in U.S.				-0.42 (0.17)**	-0.76, -0.08)

* p <.05, ** p< .01, *** p < .001

^e Ordinary Least Square Regression Coefficient

The results of the interaction effect of race and age are reported in Table 3 and further illustrated in Figure 1. The findings indicate that, overall, the means of psychological distress among eight (8) categories race and age were statistically significant ($F_{7/5533} = 29.57, p < .001$), and the interaction effect of race and age with psychological distress was also statistically significant ($F_{3/5533} = 2.77, p < .04$). Interestingly, older foreign born Chinese Americans aged 65 and older had a similar level of psychological distress (Adjusted mean = 2.30, 95% C.I. = 1.59, 3.00) to older foreign born White Americans (Adjusted Mean = 2.29, 95% C.I. = 1.99, 2.60) and lower than that of older foreign born Korean Americans (Adjusted mean = 3.57, 95% C.I. = 3.02, 4.12). Older foreign born Vietnamese Americans had the lowest level psychological distress (Adjusted mean = 1.21, 95% C.I. = 0.63, 1.79) compared to older White, Chinese and Korean respondents. The results in Table 3 also revealed that the younger age groups (under sixty five years old) consistently reported higher levels of psychological distress than the older groups (65 years old and older) across racial and ethnic groups. Among under 65 years old respondents, foreign born Korean Americans had the highest level of psychological distress (Adjusted mean = 4.97, 95% C.I. = 4.59, 5.36) compared to that of foreign born White Americans (Adjusted mean = 4.35, 95% C.I. = 4.11, 4.58), foreign born Chinese Americans (Adjusted mean = 3.55, 95% C.I. = 3.20, 3.90), and foreign born Vietnamese Americans (Adjusted mean = 3.59, 95% C.I. = 3.32, 3.87).

Table 3: Interaction Effect of Race * Age with Psychological Distress

White	Age ^a	N	Adj. Means ^b Of Psychological Distress	S.E.	Lower ^c	Upper ^c
White	< 65	1579	4.35	0.12	4.11	4.58
White	65 >	1023	2.29	0.15	1.99	2.60
Chinese	< 65	637	3.55	0.17	3.20	3.90
Chinese	65 >	153	2.30	0.36	1.59	3.00
Korean	< 65	549	4.97	0.19	4.59	5.36
Korean	65 >	280	3.57	0.27	3.02	4.12
Vietnamese	< 65	1071	3.59	0.14	3.32	3.87
Vietnamese	65 >	275	1.21	0.29	0.63	1.79

^aAge was coded as under 65 years old and 65 and older

^bAdjusted means after controlled for sex, marital status, Education, English, Employment Status, Income, U.S. Citizenship, and Length of residence in U.S.

^cLower and Upper Bounds of 95% Confidence Intervals

Test for Difference of 8 means of Psychological Distress:

F (7, 5533) = 29.57, P < .001

Test for Interaction of Race * Age:

F (3, 5533) = 2.77, P < .04

Finally, the results in Table 2 indicate that married foreign born respondents reported a statistically significant lower level of psychological distress than non-married respondents ($b = -0.66$, $p < .001$). Employed respondents reported a lower level of psychological distress than non-employed respondents ($b = -0.61$, $p < .001$). Respondents with higher income reported a lower level of psychological distress ($b = -0.54$, $p < .001$) than lower income respondents. Respondents who have lived in the U.S. 15 years or longer reported a lower level of psychological distress ($b = -0.42$, $p < .01$) than those who had lived in the U.S. less than 15 years.

In summary, this study revealed racial/ethnic and age differences in psychological distress between foreign born White and foreign Asian Americans. Both older and younger foreign born Korean Americans had higher levels of psychological distress than foreign born Chinese, White, and Vietnamese Americans. Furthermore, older foreign born Chinese Americans had a similar level of psychological distress to older foreign born White Americans and older Vietnamese Americans had the lowest level of psychological distress.

5. Discussion & Conclusion

The significant interaction effect of race/ethnic and age on psychological distress found in this study after controlling for key demographic characteristics such as sex, marital status, education, income, English ability, and length of residence in the U.S. suggests that the Asian population in the U.S. is heterogeneous and must be addressed appropriately in both research and practice. The results from this study revealed not only racial differences between White and three selected Asian groups but also within ethnic differences among Chinese, Korean, and Vietnamese immigrants.

Social norms from different racial/ethnic groups might influence how people react to daily stressors and how they manifest their emotions (Eid & Diener, 2001; Tsai, Chentsova-Dutton, Freire-Bebeau, & Przymus, 2002; Tsai, Levenson, & McCoy, 2006; Marsella & Yamada, 2000). The joint association of race/ethnicity and age on psychological distress among foreign born Americans can be explained partially by culture and partially by nature (Cohen, Arad, Lorbe & Pollack, 2007; Jorm, 2000; Gouliat. al, 2012). It's obvious that foreign born Americans inherited the social norms from their countries or origin. These unique social norms or cultural characteristics are determinants of their psychological status in the United States. Although it's difficult to identify the ethnic origins of foreign born White Americans in this study due to the lack of ethnic information, foreign born White Americans apparently share the same biological characteristic of their skin color and language ability. For example, 96% of White respondents in this study speak English well compared to 64.77% Chinese, 39.57% Korean, and 44.39% Vietnamese. As a group, White European immigrants might share more similarities in culture and economic developments than Asian immigrants. Each of the three selected foreign born Asian American groups has its own distinct language, cultural values and history.

Chinese Americans arrived in the U.S. since the California Gold Rush of 1848. Followed by the Korean Americans who arrived in the U.S. at the dawn of the 20th century, Vietnamese Americans arrived in the U.S. at the end of the Vietnam War in 1975. Each group arrived in the U.S. with unique history and experiences. Their pre-migration experiences might be a buffer or a risk for their psychological distress (Liebkind, 2000). As found in this study, older foreign born Vietnamese Americans manifested the lowest level of psychological distress compared to other older foreign born groups. This phenomenon could be attributed to the resilience developed among older Vietnamese Americans who had experienced devastating effects of war and the hardship and uncertainty of their refugee journey to the United States (Southwick, Vythilingam, & Charney, 2005).

There have been inconclusive results on the relationship of cultural/ethnic values and psychological distress. Some studies found strong cultural/ethnic values associated with higher psychological distress, other studies found no significant association (Hovey, Kim, & Seligman, 2006). But the high levels of psychological distress reported by foreign born Korean Americans in both young and older age groups compared to foreign White respondents and foreign born Chinese respondents and foreign born Vietnamese respondents in this study suggest both racial and ethnic differences. Racial difference manifested in the differences between foreign born Korean respondents and foreign born White respondents. Ethnic difference manifested in the differences between foreign born Korean respondents and foreign born Chinese respondents and foreign born Vietnamese respondents. Both racial and ethnic differences in psychological distress or depression between Korean Americans and White and other Asian groups were also found in previous research (Min, Moon & Lubben, 2005; Young, Fang, & Zisook, 2010). Moreover, the differences in the levels of psychological distress between foreign born White Americans and foreign born Chinese and foreign born Vietnamese Americans raise an interesting issue. That is: researchers and clinicians cannot make an assumption that White immigrants might have an easier process of acculturation than non-White immigrants. As found in this study, although foreign born White respondents had more advantages than the three Asian groups with respect to income, education, and English language ability, they still experienced higher psychological distress than both foreign born Chinese and Vietnamese respondents. It is interesting to note that compared to foreign born Chinese and foreign born Vietnamese respondents, foreign born Korean Americans have more comparable social values such with the mainstream of American society than foreign born Chinese and Vietnamese respondents. In fact, 75% of recent Korean immigrants in the United States considered themselves as Christians and 65% attended Christian church regularly. Thus foreign born Korean Americans have more cultural advantages in term of religion and social support systems. Korean Christian churches are more than a place of worship. It is also a social institution where members find fellowship and support. Given these two important social factors, why do foreign born Korean Americans reported higher levels of psychological distress than foreign born White respondents and foreign born Chinese and Vietnamese respondents? Could this phenomenon be explained by cultural and ethnic differences? Recent research has found that genes and culture may interact in the ways people express their psychological behaviors such as psychological distress (Kim et al, 2010).

This study has a few limitations, first although ethnicity is well defined and identified for three Asian groups, ethnic group membership of White respondents was unclear from both linguistic and countries of origin. Foreign born white respondents in this study could have arrived in the United States from different European nations that have different cultures and languages. Thus racial differences between foreign born Asian respondents and foreign born White respondents found in this study could be biased by the diversity among foreign born White respondent sample. Second, the data used in this study were collected in California thus limiting the ability to generalize the results to a broader population.

Given its limitations, the study's findings of racial and ethnic differences in psychological distress could provide insightful information to mental health research and services. Cross-cultural research in psychological distress or mental health status should continue to investigate the interaction effect of race/ethnicity with biological markers such as age and sex. Community-based mental health services should address racial and cultural differences in both intervention approaches and outcome evaluations. Culturally appropriate outreach programs and mental health education programs should take cultural values of various racial and ethnic groups into the design and implementation of prevention and treatment services for mentally ill patients. Due to the diversity among Asian-Americans, each group might have its own mental health experiences and needs.

Clinicians can better serve their Asian immigrant clients by recognizing their differences in mental health characteristics and difficulties so that appropriate treatments and services can be provided to each group effectively (Sue & Chu, 2003, Marcus & Kitayama, 1991).

References

- Abe-Kim, J., Takeuchi, D.T., Hong, S., Zane, N., Sue, S., Spencer, M., ...Alegria, M. (2007). Use of mental health-related services among immigrant and US-born Asian Americans: Results from the national Latino and Asian American study. *American Journal of Public Health, 97*(1), 91-98.
- Association of Asian Pacific Community Health Organizations (AAPCHO). (2009). 2010 fact sheet: Asian Americans, Native Hawaiians, Pacific Islanders in the United States. Available at: www.aapcho.org/site/aapcho/section.php?id=10950.
- Chung, H., Teresi, J., Guarnaccia, P., Meyers, B., Holmes, D., Bobrowitz, T., ...Ferran, E. (2003). Depressive symptoms and psychiatric distress in low income Asian and Latino primary care patients: Prevalence and recognition. *Community Mental Health Journal, 39*(1), 33-46.
- Cohen, M., Arad, S., Lorber, M., Pollack, S. (2007). Psychological distress, life stressors, and social support in new immigrants with HIV. *Behavioral Medicine, 2007, 33*(2), 45-54
- Dey A.N., Lucas J.W. (2006). Physical and mental health characteristics of U.S.-and foreign-born adults: United States, 1998–2003. *Advanced data from vital and health statistics; no 369*. Hyattsville, MD: National Center for Health Statistics.
- Eid, M., & Diener, E. (2001). Norms for experiencing emotions in different cultures: Inter- and intranational differences. *Journal of Personality and Social Psychology, 81*, 869–885.
- Gavin, A., Walton, E., Chae, D., Alegria, M., Jackson, J., & Takeuchi, D. (2010). The associations between socioeconomic status and major depressive disorder among Blacks, Latinos, Asians and non-Hispanic Whites: Findings from the collaborative psychiatric epidemiology studies. *Psychological Medicine, 40*(1), 51-61.
- Goulia P, Papadimitriou, I., Machado, M, Mantas, C., Pappa, C., Tsianos, E., ...Hyphantis, T. (2012). Does psychological distress vary between younger and older adults in health and disease? *Journal of Psychosomatic Research, 72*, 120-128.
- Hoeffel, E.M., Rastogi, S., Kim, M.O., & Shahid, H. (2012). The Asian population: 2010. U.S. Census Bureau.
- Hovey, J. D., Kim, S. E., & Seligman, L. D. (2006). The Influences of Cultural Values, Ethnic Identity, and Language Use on the Mental Health of Korean American College Students. *Journal of Psychology, 140*(5), 499-511.
- Jorm, A. F. (2000). Does old age reduce the risk of anxiety and depression? A review of epidemiological studies across the adult life span. *Psychological Medicine, 2000*(30), 11–22.
- Jorm, A.F., Windsor, T.D., Dear, K.B.G., Anstey, K.J., Christensen, H., & Rodgers, B. (2005). Age group differences in psychological distress: the role of psychosocial riskfactors that vary with age. *Psychological Medicine, 35*, 1253–1263.
- Kessler, R.C., Green, J.G., Gruber, M.J., Sampson, N.A., Bromet, E., Cuitan, M., ...Zaslavsky, A.M. (2010). Screening for serious mental illness in the general population with the K6 screening scale: results from the WHO World Mental Health (WMH) survey initiative. *International Journal of Methods in Psychiatric Research, 19*(S1), 4-22.
- Kim, G., Chiriboga, D., Jang, Y., Lee, S., Huang, C. & Parmelee, P. (2010). Health status of older Asian Americans in California, *Journal of American Geriatrics Am Geriatric Society, 58*, 2003-2008.
- Kim, G., Bryan, A.N., & Parmelee, P. (2011). Racial/ethnic differences in serious psychological distress among older adults in California. *International Journal of Geriatric Psychiatry, 27*, 1070-1077.
- Kim, H. S, Sherman, D. K., Sasaki, J. Y., Xu, J., Chu, T. Q. Ryu, C., ...Taylor, S. E. (2011). Culture, distress, and oxytocin receptor polymorphism (OXTR) interact to influence emotional support seeking. *Psychological and Cognitive Sciences (PNAs Early Edition)*. Available: <http://www.pnas.org/content/107/36/15717.full>
- Kim, J. & Choi, N. (2010). Twelve-month prevalence of DSM-IV mental disorders among Asian Americans: Comparisons with younger groups. *Aging & Mental Health, 14*(1), 90-99.
- Kitson, G. C. & Morgan, L. A. (1990). The multiple consequences of divorce: A decade review. *Journal of Marriage and the Family, 52*, 913-924.

- Liebkind, K. (2000). Acculturation and psychological well-being among immigrant adolescents in Finland: A comparative study of adolescents from different cultural backgrounds. *Journal of Adolescent Research*, 15, 446-469.
- Lorant, V., Kampfl, D., Seghers, A., Deliege, D., Closon, M.C., Ansseau, M. (2003). Socio-economic differences in psychiatric in-patient care. *Acta Psychiatrica Scandinavica*, 107 (3), 170-177.
- Markus, H. & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98, 224-53.
- Marsella, A. J., & Yamada, A. M. (2000). Culture and mental health: An introduction and overview of foundations, concepts, and issues. In I.Cuellar & F. A. Paniagua (Eds.), *Handbook of multicultural mentalhealth* (pp. 3–24). London: Academic Press.
- Miech, R., Power, R., Eaton, W. (2007). Disparities in psychological distress across education and sex: A longitudinal analysis of their persistence within a cohort over 19 years. *Annals of Epidemiology*, 17, 289–295.
- Min, J. W., Moon, A., Lubben, J. E. (2005). Determinants of psychological distress over time among older Korean immigrants and Non-Hispanic White elders: evidence from a two-wave panel study. *Aging & Mental Health*, 9(3), 210-222.
- Paul, K. & Moser, K. (2009). Unemployment impairs mental health: Meta-analyses. *Journal of Vocational Behavior*, 74, 264-282.
- Sorkin, D, Nguyen, H, & Ngo-Metzger, Q. (2011). Assessing the mental health needs and barriers to care among a diverse sample of Asian American older adults. *Journal of General Internal Medicine*, 26(6), 595-602.
- Southwick, S.M., Vythilingam, M., & Charney, D.S. (2005). The psychobiology of depression and resilience to stress: Implications for prevention and treatment. *Annual Review of Clinical Psychology*, 1, 255-291
- Spence, N., Adkins, D., Dupre, M. (2011). Racial differences in depression trajectories among older women: Socioeconomic, family, and health influences. *Journal of Health and Social Behavior*, 52(4), 444-459.
- Sue, S. & Chu, J. (2003) The mental health of ethnic minority groups: Challenges posed by the supplement to the surgeon general's report on mental health. *Culture, Medicine, and Psychiatry*, 27, 447-465.
- Uutela, A. (2010). Economic crisis and mental health. *Current Opinion in Psychiatry*, 23, 127-130.
- Takeuchi, D. T., Chung, R. C., Lin, K., Shen, H., Kurasaki, K., Chun, C., Sue, S. (1998). Lifetime and twelve-month prevalence rates of major depressive episodes and dysthymia among Chinese Americans in Los Angeles. *American Journal of Psychiatry*, 155(10), 1407-1414.
- Tran, T.V., Manalo, V., & Nguyen, V.T.D. (2007). Nonlinear relationship between length of residence and depression in a sample of Vietnamese Americans. *International Journal of Psychiatry*, 53, 85-94.
- Tsai, J. L., Chentsova-Dutton, Y., Freire-Bebeau, L., & Przymus, D. E. (2002). Emotional expression and physiology in European Americans and Hmong Americans. *Emotion*, 2, 380–397.
- Tsai, J. L., Levenson, R. W., & McCoy, K. (2006). Cultural and temperamental variation in emotional response. *Emotion*, 6, 484–497.
- UCLA Center for Health Policy. (n.d.). California health interview survey. Available at: <http://healthpolicy.ucla.edu/chis/Pages/default.aspx>
- U.S. Department of Health and Human Services. (2001). *Mental Health: Culture, race, and ethnicity – A supplement to mental health: A report of the surgeon general*. U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services.
- Wilton, L., & Constantine, M.G. (2003). Length of residence, cultural adjustment difficulties, and psychological distress symptoms in Asian and Latin American international college students. *Journal of College Counseling*, 6, 2, 177-186.
- Ying, Y. (1988). Depressive symptomatology among Chinese Americans as measured by the CES-D. *Journal of Clinical Psychology*, 44, 739-746.
- Young, C., Fang, D., & Zisook, S. (2010). Depression in Asian-American and Caucasian undergraduate students. *Journal of Affective Disorders*, 125, 379-382.
- Zhang, A. W., Snowden, L., Sue, S.. (1998). Differences between Asian and White Americans' help-seeking and utilization patterns in the Los Angeles area. *Journal of Community Psychology*, 26, 317-326.

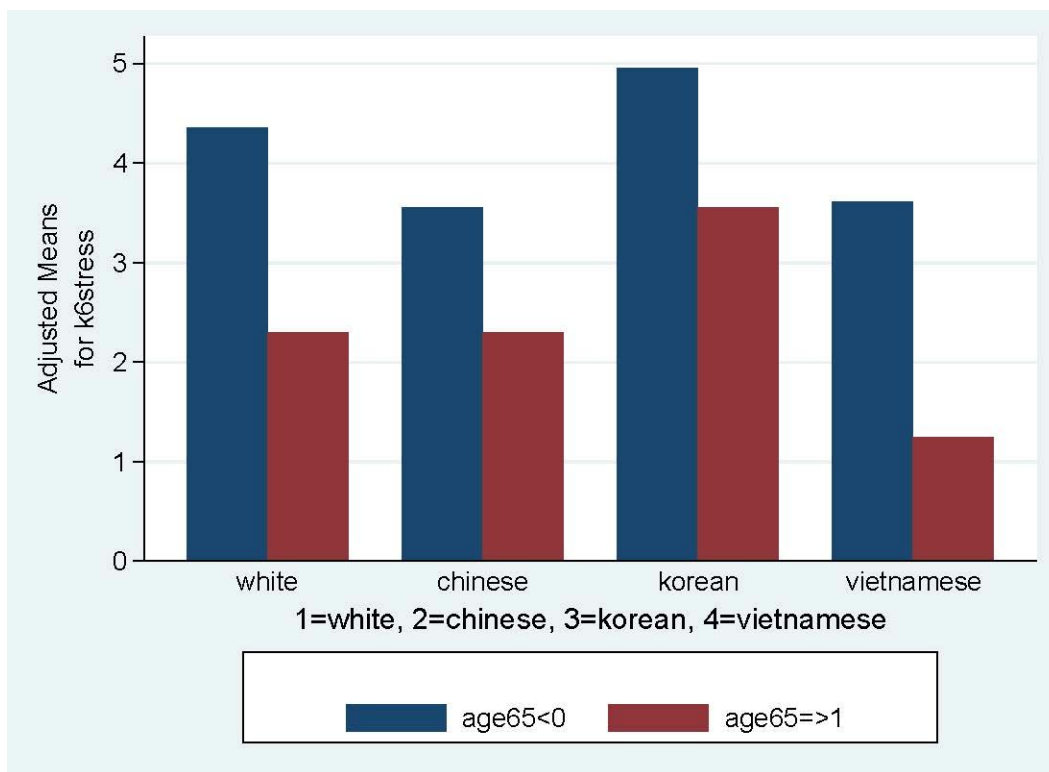


Figure 1. Interaction Effect of Race and Age on Psychological Distress