

## The association of cultural and environmental factors with mental health among Asian immigrants

By: Jaehyun Kim, Andrew Mowen, [Benjamin Hickerson](#), Alan Graefe and Melissa Bopp

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### **Abstract:**

**Purpose** – During exposure to new cultures, immigrants face numerous life changes and challenges, which negatively affect mental health, yet environmental supports may address these concerns. This study aims to examine how neighborhood quality, acculturation and acculturative stress are associated with immigrants' mental health.

**Design/methodology/approach** – The sample consisted of 511 Asian immigrants who were born in their country of origin and immigrated to the USA. Path analysis using analysis of moment structures (version 22.0) was conducted to test the hypothesized model.

**Findings** – The results from the path analysis indicated that perceived neighborhood quality and acculturative stress had direct effects on mental health among Asian immigrants. The study also found a significant indirect pathway to mental health where more favorable perceptions of neighborhood quality were associated with higher levels of acculturation and lower levels of acculturative stress, which, in turn, resulted in better mental health.

**Originality/value** – The results of the study highlight the importance of improving neighborhood quality as a means by which to facilitate cultural adjustment/adaptation to US culture and thus, improve mental health among Asian immigrants. In addition, the authors suggested considering cultural origin in designing health programs and/or policies for Asian immigrants, which could promote mental health among Asian immigrants. Based on the results of the model, this study produced insightful information and suggestions on how to improve Asian immigrants' mental health more effectively.

**Keywords:** Acculturation | Mental health | Acculturative stress | Asian immigrants | Neighborhood environment

## **Article:**

### **Background**

During exposure to a new culture, immigrants often face cultural changes that cause numerous life changes and challenges (Kim et al., 2012). Such challenging situations can cause increased levels of stress, which negatively affect mental health among immigrants (Chung and Epstein, 2014). Numerous studies have shown that Asian immigrant populations have higher prevalence rates of mental disorders than US-born Asians and non-Hispanic Whites (Shekunov, 2016; Sue et al., 1995). According to the 2014 US Census, by 2060, one in five members of the American population will be classified as foreign-born persons (Colby and Ortman, 2018). In particular, Asian immigrants already had become the fastest growing ethnic minority in the USA and this population will become the largest immigrant group in the USA, outnumbering Hispanic immigrants in 2055 (Lopez et al., 2019). Given their growing numbers and potential contribution to the health of the nation, it is important to understand the factors associated with mental health among Asian immigrants in the USA.

Prior studies that focused on immigrants have identified the correlates of mental health based on cultural variables, such as acculturation and acculturative stress. Acculturation is “a process of relinquishing the attitudes, values and behaviors of their culture of origin while simultaneously adopting those of the new society” (Ryder et al., 2000, p. 49). A number of studies have found significant relationships between acculturation level and mental health status across diverse immigrant populations, such as among Korean immigrants (Kim et al., 2012), Chinese immigrants (Chen et al., 2003) and Latino immigrants (Heilemann et al., 2004). However, no consistent pattern exists for the relationship. Yoon and colleagues (Yoon et al., 2013), for example, reviewed 325 studies on acculturation and its association with mental health and found that more acculturated people were more likely to report better mental health statuses. Wilton and colleagues (Wilton and Constantine, 2003) found that the prevalence of mental health problems increased among Asian women as the number of years, as immigration increased. However, other studies have found that immigrants with higher levels of acculturation were more likely to report interpersonal and job-related stress and depressive symptoms (Shen and Takeuchi, 2001; Torres, 2010).

It is also well-documented that, as immigrants have contact with the dominant culture of their new countries, they are exposed to a greater risk of acculturative stressors and mental health problems (Kirmayer et al., 2011; Singh et al., 2015). Acculturative stress refers to a reaction to the challenging situations caused by the cultural adaptation process (Berry, 2003). Williams et al.

(Williams et al., 2007) compared Black Caribbean immigrants with African Americans in terms of the risk of mental health problems and found that immigrant populations were more likely to report mental disorders than non-immigrants. They suggested that a higher risk of mental distress may be attributed to the acculturative stressors experienced by immigrants, such as being of minority status, experiencing discrimination and experiencing financial difficulty. A number of studies related to immigrant research have found that linguistic acculturation, such as English language competence, is influential on immigrants' mental health levels (Hovey and Magaña, 2000; Oh and Koeske, 2002).

Caplan (2007) indicated that poor neighborhood features (e.g. unsafe) were major acculturative stressors among Latino immigrants. This finding points to the potential influence of neighborhood conditions on mental health through its effect on acculturative stress among Asian immigrants. To this end, researchers have provided evidence that individuals' mental health can be influenced by perceived neighborhood characteristics (Cho et al., 2005; Cutrona et al., 2000; Hadley-Ives et al., 2000; Hong et al., 2014). For example, Sooman and Macintyre (Sooman and Macintyre, 1995) examined the impact of perceived neighborhood characteristics on health outcomes based on six domains (i.e. local amenities, local problems, fear of crime, neighborliness, area reputation, satisfaction with the area). In this study, residents who perceived their neighborhood as an unpleasant or threatening environment lacking local amenities tended to report higher levels of both anxiety and depression. Some immigrant research has shown that those individuals who live in a safer neighborhood, with less traffic, better aesthetics and lower rates of criminal activity were more likely to report better mental health (Cho et al., 2005; Echeverría et al., 2008; Gale et al., 2011; Leslie and Cerin, 2008). These studies highlight the importance of neighborhood conditions as a means by which to improve the mental health of immigrants.

Based on the literature reviewed above, it is expected that perceived neighborhood quality, cross-cultural adaptation and acculturative stressors play a significant role in shaping the mental health of Asian immigrants. To date, however, few studies that focused on Asian immigrants have examined the relationship among perceived neighborhood environment, cultural factors and mental health. That is, a void exists in regard to information related to the impact of perceived neighborhood quality on acculturation and acculturative stress and, more importantly, how these three factors are linked to mental health among Asian immigrants. Thus, this study examined the extent to which perceived neighborhood quality, acculturation and acculturative stress are related to mental health among Asian immigrants. Specifically, we tested a potential pathway where perceived neighborhood quality has a direct effect on mental health through its positive effect on acculturation and negative effect on acculturative stress.

## **Methods**

## Sample and data collection

This study used a nationally representative panel sample purchased from Qualtrics, a Webbased survey software company. The online survey by Qualtrics was administered to a nation-wide convenience sample of adult Chinese, Japanese and Korean immigrants who were born in their country of origin and immigrated to the USA. Qualtrics initially recruited 828 Asian immigrants who were interested in participating in the survey. This online survey was conducted from February 1 to April 30, 2018. We excluded the respondents who did not meet the inclusion criteria as measured by a series of six screening questions at the beginning of the survey (e.g. please select the country you currently reside in) or did not answer more than 20% of the questions. Finally, 511 of the 828 surveys (i.e. completion rate = 61.7%) were included in the data analysis. The sample was comprising 177 Chinese immigrants (34.6%), 159 Japanese immigrants (31.2%) and 175 Korean immigrants (34.2%). As shown in Table 1, the largest household income group was US\$75,000 or more (58.5%), followed by 21.3% who reported an annual household income between US\$50,000 and US\$74,999. The mean age was 46 years and the most common educational level attained was a bachelor's degree (43.2%), followed by a master's degree (25.2%) and a doctorate degree (11.7%). Asian immigrants in the present study have lived in the USA for 18 years on average.

For the data collection procedures, Qualtrics implemented a double opt-in process to ensure data quality. The potential participants were initially recruited through a variety of methods, such as website advertisements, social media and referrals and asked to participate in the study. When they agreed to join the research study, they were then asked to complete the profile survey, which served to verify eligibility. Qualtrics used an additional confirmation step for the data quality, including email address verification, LinkedIn matching and phone calls to a potential participant. After launching an on-line survey, Qualtrics performed data scrubbing by inspecting the straight-lining and patterned response behaviors and also asking open-ended questions at the end of the survey questionnaire that required the respondents to enter specific words and phrases.

As for using an online sampling method, such as Qualtrics, Gosling and colleagues (Gosling et al., 2004) indicated that “the data provided by internet methods are of at least as good quality as those provided by traditional paper-and-pencil methods” (Gosling et al., 2004, p. 102). Moreover, it has been argued that online panels, especially Qualtrics, offer high quality and reliable data (Roulin, 2015). Approval for this study was obtained from Penn State University's Institutional Review Board (IRB).

## Measures

Perceived neighborhood quality was assessed based on the importance of neighborhood quality and the existence of certain characteristics in the respondents' neighborhoods (Li et al., 2012).

**Table 1** Socio-demographics of the sample of Asian immigrants

Variable	% or Mean
	Overall (N = 511)
Income	
US \$14,999 or less	4.1
US \$15,000 to US \$29,999	5.3
US \$30,000 to US \$49,999	10.8
US \$50,000 to US \$74,999	21.3
US \$75,000 or more	58.5
Age	46 years
18-35	24
36-50	42
51-64	21
65 and older	13
Education	
Middle school	1
High school	18
Bachelor's degree	43.2
Master's degree	25.2
PhD	11.7
Not sure	<1
Gender	
Male	32.7
Female	67.3
Length of residence in the USA (years)	18

Seven neighborhood characteristics (i.e. well-maintained sidewalks, enjoyable scenery, smooth traffic, street lights, dogs on leashes, good air quality, low neighborhood crime activity) were derived from Brownson et al. (Brownson et al., 2001). Importance was measured by asking the participants to answer the following question “Please rate the importance of the listed neighborhood characteristics in your living environment, regardless of whether your neighborhood has them” with the response options ranging from “(1) not at all important” to “(5) very important.” Existence was assessed through the following question “Does your neighborhood have the listed characteristics?” with dichotomous response options of (1) yes and (2) no. The values for importance were then multiplied by the existence (1 = yes to 1 = no); thus, respondents with higher scores may be referred to as those individuals who rated the importance of having the listed neighborhood characteristics in their living environment and who indicated they actually have those characteristics in their neighborhood. In the present study, the scale of importance yielded a Cronbach’s  $\alpha$  of 0.83.

To assess Asian immigrants’ levels of acculturation into the culture of the USA, 10 items were derived from the Vancouver Index of Acculturation developed by Ryder, Alden and Paulhus (Ryder et al., 2000). A sample item is “I enjoy social activities with typical American people.” The items were assessed on a nine-point Likert-type scale (1 = disagree to 9 = agree). The items were summed and divided by the total number of items; thus, higher scores indicated those individuals who were more acculturated into the mainstream culture (i.e. American culture). In the present study, the acculturation scale yielded a Cronbach’s  $\alpha$  of 0.85.

Asian immigrants’ acculturative stress was measured using the Demands of Immigration (DI) scale, which includes 17 items. The DI scale originally included six domains, namely, language barriers, sense of loss, not feeling at home, perceived discrimination, novelty and occupation (Ding et al., 2011). Only five of the six factors were used because the occupation items (e.g. I cannot compete with Americans for work in my fields) were not applicable to homemakers and retirees. The items were assessed on a five-point Likert-type scale (1 = strongly disagree to 5 = strongly agree). The DI scale yielded a Cronbach’s  $\alpha$  of 0.91.

Mental health status was measured using the Kessler Psychological Distress Scale, which includes 10 items (Kessler et al., 2002). The participants were asked to rate the amount of mental distress they had experienced in the past four weeks. The items were assessed on a five-point Likert-type scale (1 = never to 5 = almost always). All of the items were also reverse coded to represent self-reported mental health in the study model; thus higher scores indicated better mental health statuses. In the present study, the scale yielded a Cronbach’s  $\alpha$  of 0.92.

The demographic factors included personal information about age, gender, annual household income and length of residence in the USA. As evidenced in previous research, the aforementioned demographic factors have been shown to affect mental health among immigrant

populations (Wilton and Constantine, 2003; Ritsner et al., 2001; Yeh, 2003; Shen and Takeuchi, 2001), and therefore, were considered to be the individual-level control variables for this study.

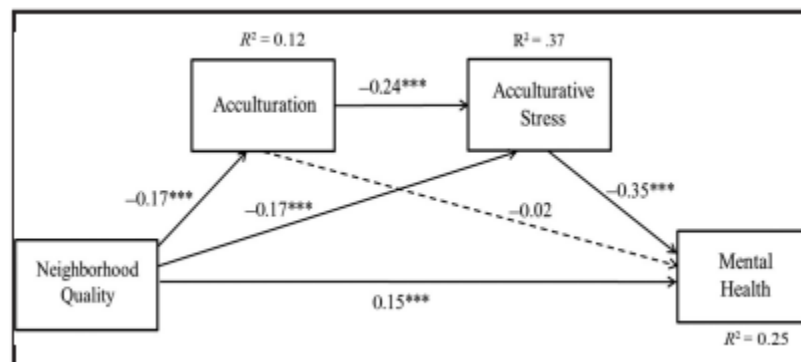
## Data analysis

All of the analyzes were conducted using analysis of moment structures (AMOS) (version 22.0) and statistical package for the social sciences (SPSS) (version 18.0). First, the SPSS software was used to generate the descriptive statistics for demographic variables (Table 1). Second, Cronbach's alpha reliability coefficients with SPSS were used to measure the internal consistency of the observed variables. A path analysis using AMOS was conducted to test the relationship among perceived neighborhood quality, acculturation, acculturative stress and mental health among Asian immigrants. The model fit was assessed using five fit indices [i.e.  $\chi^2$ -statistic, standardized root mean square residual (SRMR), RMSEA, comparative fit index (CFI), goodness of fit index (GFI)].

## Results

The hypothesized model (Figure 1) provided an acceptable fit to the data ( $\chi^2$  (df = 3) = 1.470,  $p$  = 0.220; RMSEA = 0.030; SRMR = 0.013; CFI = 0.998; GFI = 0.998). The results from the path analysis (Table 2) indicated that perceived neighborhood quality ( $b$  = 0.15,  $p$  < 0.001) and acculturative stress ( $b$  = 0.35,  $p$  < 0.001) had direct effects on mental health among Asians immigrants. The study also found a significant indirect pathway to mental health where more favorable perceptions of neighborhood quality were associated with higher levels of acculturation ( $b$  = 0.17,  $p$  < 0.001) and lower levels of acculturative stress ( $b$  = 0.17,  $p$  < 0.001), which, in turn, resulted in better mental health. In this study, no significant relationship was found between acculturation and mental health ( $b$  = 0.04,  $p$  > 0.05). Overall, the model explained 25% of the variance in mental health. Figure 1 shows a final path model with the standardized coefficients and the square root ( $R^2$ ) while controlling for age, gender, annual household income and length of residence in the USA.

**Figure 1.** Final path model of mental health among Asian immigrants



**Table 2** Direct effects on mental health among Asian immigrants

Dependent variable and path			$\beta$ (SE)	t-value	R <sup>2</sup>
Mental health					0.25
Neighborhood quality	→	Mental health	0.15(0.02)	3.60***	–
Acculturation	→	Mental health	0.02(0.03)	0.04	–
Acculturative stress	→	Mental health	-0.35(0.04)	-7.30***	–
Acculturative stress					0.37
Neighborhood quality	→	Acculturative stress	-0.17(0.02)	-4.63***	–
Acculturation	→	Acculturative stress	-.024(0.03)	-6.34***	–
Acculturation					0.12
Neighborhood quality	→	Acculturation	0.17(0.03)	3.98***	–

Notes:  $p < 0.05$ ;  $p < 0.01$ ;  $p < 0.001$

## Discussion

This study examined how perceived neighborhood quality, acculturation and acculturative stress are associated with mental health among Asian immigrants. The results of our study indicated that the more Asian immigrants perceived their neighborhood favorably, the more they reported better mental health. This finding fully supports previous literature that has revealed that those individuals who live in safer neighborhoods with less traffic, better aesthetics and lower criminal rates are more likely to report better mental health (Cho et al., 2005; Gale et al., 2011; Leslie and Cerin, 2008). Moreover, prior studies have found that certain environmental features could be considered conducive to mental health, such as green and blue spaces in neighborhoods (Gascon et al., 2015) and safe neighborhoods (Meyer et al., 2014). In this regard, we suggest that preventive interventions for Asian immigrants' mental health may benefit from policies and community efforts to improve neighborhood conditions, such as through reducing neighborhood crime.

Moreover, our study found that perceived neighborhood quality was related to mental health through acculturation and acculturative stress. That is, Asian immigrants who rated the importance of having enough sidewalks, street lights, less traffic and low crime rates in their neighborhoods and who indicated that they had those characteristics in their neighborhoods tended to be more acculturated to the mainstream culture and have overcome their acculturative stress. In turn, they reported better mental health. This finding demonstrates the need for public



policies and resources conducive to improving the environmental quality of neighborhoods (e.g. favorable neighborhood safety, well maintained pedestrian infrastructures, increased aesthetic appeal), which, in turn, could result in facilitating cultural adjustments and minimizing acculturative stress among Asian immigrants.

In the present study, acculturative stress was most strongly and negatively associated with mental health. This finding further corroborates the existing evidence that cultural stress often causes mental illness among immigrant populations (Hovey and Magaña, 2000; Oh and Koeske, 2002; Smokowski and Bacallao, 2007; Sirin et al., 2013). In this sense, we suggest that educational programs that address acculturative stress would be useful for public health outcomes – particularly mental health – of Asian immigrants. As a leader in best practices, the Immigrant Learning Center (ILC), a non-profit organization located in Malden, MA, has offered English language programs and hosted special cultural events, which has helped more than 1,000 immigrants from different countries adjust to their new environments in the USA. Beyond the English language program, the ILC has also provided advising programs designed to help immigrants with skills to find better jobs, be promoted in their jobs, be accepted into colleges and start businesses. Public health professionals could consider including such programs as a part of their mental health programs and services for Asian immigrants. This effort will help Asian immigrants cope more effectively with acculturative stress, and thus improve their mental health.

Considering the significant relationship of acculturation and acculturative stress with mental health, it is important to develop preventive interventions that could help facilitate cultural adjustment/adaptation to US culture and reduce cultural stress for immigrants. In this regard, researchers have emphasized a need for considering cultural origin in designing health promotion programs and policies for ethnic minority groups (Gushulak and MacPherson, 2006; Netto et al., 2010; Wilbur et al., 2002). For example, Mier, Ory and Medina (Mier et al., 2010) reviewed 18 health interventions for Hispanics and revealed that culturally sensitive intervention components commonly addressed the issues of bilingual and bicultural materials, family and social support, literacy-level appropriateness and cultural values (e.g. familism). Further research could systematically review the effectiveness of previous health interventions tailored for immigrants. The findings from such review studies could help inform policymakers and public health professionals about how to develop culturally appropriate interventions to promote mental health among Asian immigrants.

While acculturative stress had a direct effect on mental health, no direct effect was found between acculturation and mental health. That is, when it comes to mental health, acculturative stress was found to be a better predictor than acculturation. The most likely explanation for this finding is that the scale for acculturation mainly addressed various cultural aspects, such as perceptions of American cultural values, social relationships with typical American people and participation in American cultural traditions. Perhaps one's view on mainstream culture was not

enough in itself to directly relate to mental health outcomes. As such, acculturative stress sub-domains (e.g. language barriers, sense of loss, not feeling at home, perceived discrimination) might have better reflected mental health-related aspects of Asian immigrants.

Several limitations of this study should be noted. First, this study was cross-sectional, and thus the relationships among the study variables could be considered reciprocal. For example, this study found that perceived neighborhood quality had a direct positive effect on acculturation levels. However, it is also possible that acculturation could shape perceptions of neighborhood quality. Given this limitation, the study findings should be interpreted with caution. Second, the questionnaires used in this study were written in English and, as such, this study might have excluded Asian immigrants who were not proficient in English. Future immigrant research could use translated survey instruments to address this issue and forward- and back-translation procedures should be considered to ensure that cross-cultural and conceptual equivalence is maintained across different languages. Finally, the majority of the Asian immigrants in this study were characterized as having adequate income, being well-educated and having immigrated to the USA more than 10 years ago. Therefore, this sample may not be representative of all Asian immigrants living in the USA.

## **Conclusion**

Although some of the issues discussed in this study were examined in previous studies, our study is unique because as follows:

- We specifically focused on Asian immigrants, who have become the fastest growing ethnic minority group in the USA and who have a relatively high prevalence of mental health problems; and
- This is the first study to assess both perceived neighborhood quality and cultural factors (i.e. acculturation, acculturative stress) in a single study as potential predictors of mental health among Asian immigrants

Path analysis indicated that perceived neighborhood quality played a significant role in relating to mental health through acculturation and acculturative stress. That is, the findings from this study highlight the importance of improving neighborhood quality (e.g. safer neighborhoods with less traffic, better aesthetics and lower criminal rates) as a means by which to facilitate cultural adjustment/adaptation to US culture, and thus improve mental health. In addition, we suggested considering cultural origin in designing health programs and/or policies for Asian immigrants, which could promote mental health among Asian immigrants. Based on the results of our model, this study produced insightful information and suggestions on how to improve Asian immigrants' mental health more effectively.

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### **Corresponding author**

Jaehyun Kim can be contacted at: [jakim@brockport.edu](mailto:jakim@brockport.edu)