Acculturation and Perceived Stress in HIV+ Immigrants: Depression Symptomatology in Asian & Pacific Islanders

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Abstract

Asians and Pacific Islanders (API) are among the fastest growing minority groups within the United States, and this growth has been accompanied by an increase in HIV incidence. Between, 2000 and 2010, the API HIV infection rate increased from 4.5% to 8.7%; however, there is a paucity of HIV-related research for this group, and even less is known about the prevalence and correlates of antiretroviral therapy adherence behavior, quality of life, impact of stress, and efficacious self-management among HIV+ API Americans. This paper examines how acculturation and perceived stress affect depression symptomatology and treatment seeking in the HIV+ API population. A series of cross-sectional audio computer-assisted self-interviews (ACASI) were conducted with a convenience sample of 50 HIV+ API (29 in San Francisco and 21 in New York City). The relationship between acculturation and perceived stress was analyzed, and the results indicate that for those HIV+ API who reported low or moderate acculturation (as compared to those who reported high acculturation), stress was significantly mediated by depression symptomology. Interventions to address acculturation and reduce perceived stress among API generally and Asians specifically are therefore needed.

Keywords

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INTRODUCTION

Asians and Pacific Islanders (API) are among the fastest growing minority groups within the United States and by 2050 they are expected to increase nearly twofold from 5% to 9% (U.S. Census Bureau, 2010). Currently, Chinese comprise 23% of the Asian population, followed by Asian Indians (19%) and Filipinos (17%) (U.S. Census Bureau, 2011). API are the only racial/ethnic group with a significant increase in HIV diagnosis rate (Adih, Campsmith, Williams, Hardnett, & Hughes, 2011). The proportion of API diagnosed with AIDS increased from 4.5% of all AIDS cases in 2000 to 8.7% of all AIDS cases in 2010, a 93.3% increase (Asian & Pacific Islander Wellness Center, 2011). Among API in the U.S., the Chinese subpopulation represents 21% of AIDS cases diagnosed, which is the largest proportion (Asian & Pacific Islander Wellness Center, 2011).

Despite their increasing share of the total HIV+ population in the U.S., specific research on API with HIV infections is sparse. Not surprisingly, there is also a paucity of data about antiretroviral therapy (ART) adherence behavior within this group. HIV-related stressors were found to be positively related to depressive symptom severity in the HIV+ immigrant population which includes refugees and refugee claimants and students (Noh et al., 2012). In a study conducted on HIV-infected immigrant populations from Western European countries, it was shown that that as HIV stigma and depressive symptoms were reduced, antiretroviral therapy adherence and virological response was improved (Sumari-de Boer, Sprangers, Prins, & Nieuwkerk, 2012).

Many API immigrants suffer from mental illnesses, including depression and anxiety (Gong, Xu, Fujishiro, & Takeuchi, 2011). However, there is limited research on this subset of this group as well (Chin, Li, Kang, Behar, & Chen, 2011; Chng, Wong, Park, Edberg, & Lai, 2003). The current study has the potential to provide an initial understanding of the mental health issues and HIV+ treatment and adherence for API Americans.

Critical to U.S. API-related research is an understanding of immigration and acculturation history. Acculturation is defined as a process of change that occurs when individuals from different cultures interact and share a common geographical space following migration, political conquest, or forced relocation (Organista, Marin, & Chun, 2010). Acculturative stress is the stress an individual experiences resulting from the acculturation process. Research has shown that acculturative stress for is related to language ability, pressures to assimilate, and pressures against acculturation (e.g., family members resisting an individual's desire to adopt majority cultural values) (Chen, 2013). Acculturative research among U.S. Chinese immigrants also found that low levels of cohesion within the family, poor English language ability, and the length of residence in the United States were all related to acculturative stress (Chen, 2009; Chen & Bakken, 2004).

Existing studies on HIV within the API immigrant population have focused mainly on prevention. Without better knowledge of this rapidly growing subpopulation, healthcare services can be seriously compromised. Therefore, this paper, explores how acculturation and perceived stress affect depression symptomatology among the HIV+ API immigrant population.

METHODS

Setting

The study was a collaboration among investigators at Yale University and three organizations that provide health services to API: the APICHA Community Health Center in New York, the Chinese-American Planning Council in New York, and the Asian & Pacific Islander Wellness Center in the San Francisco Bay area.

A cross-sectional quantitative study design was employed. Between January and June of 2013, a series of audio computer-assisted self-interviews (ACASI) were conducted with a convenience sample of 50 HIV+ API (29 in San Francisco and 21 in New York City). The inclusion criteria for the subjects included being (a) HIV+, (b) self-identified as API, (c) at least 18 years of age, and (d) willing to share their personal stories with the researchers. All participants received a small payment for participating.

Measures

Participants completed a 60-minute ACASI survey that consisted of standardized measures to assess demographics, HIV-related perceived stress, the Center for Epidemiologic Studies Depression Scale (CES-D) and acculturation. These measures have been used with API populations and the reported Cronbach's alpha ranged from 0.68-0.96. (Hamilton, Marshall, Rummens, Fenta, & Simich, 2011; Leung, Cheung, & Tsui, 2012).

Demographics—Participants' age, sex, marital/partner status, ethnicity, country of origin, education level, income, residency, sexual preferences, length of stay in the U.S., and employment status were collected via self-report.

Perceived Stress Scale in HIV (PSSHIV)—This 44-item scale measured perceived stress levels in the eight domains: social/psychological problems, sexual relationships, functional problems, social acceptance/rejection issues, work-related issues, family/ offspring issues, accessibility to treatment, and treatment outcomes. Score ranges were from 1-absolutely not stressful, to 5-extremely stressful. The Cronbach's alpha values ranged from 0.76 to 0.94 for the subscales (Su et al., 2008).

Epidemiologic Studies Depression Scale—A 20-item scale of the Center for Epidemiologic Studies Depression Scale (CES-D) measured depression symptomology. Cronbach's alpha was 0.77 (Rao et al., 2012).

Suinn-Lew Self-Identity Acculturation Scale—The 21-item Suinn-Lew Asian Self-Identity Acculturation Scale include (a) food preference, (b) social friends' ethnicity, (c) TV programs and language preference, (d) music selection, (e) length of residency in the US, and (f) age at arrival (Suinn, Rickard-Figueroa, Lew, & Vigil, 1987). The Suinn-Lew Asian self-identity acculturation scale is the most well-known and wildly used scale for the Asian immigrant population with an overall Cronbach's alpha of 0.83 (L. Chen, Juon, & Lee, 2012; Venkatesh, Weatherspoon, Kaplowitz, & Song, 2013; Yang & Wang, 2011).

Descriptive and bivariate statistics were employed to examine the relationships among perceived stress, CES-D, acculturation, and demographics. A multiple linear regression, controlling for potential correlates of ethnic background, was used to examine the relationship among depression, acculturation, and perceived stress. In addition, we would like to understand the directions of the relationships among "perceived stress", "CES-D" and "acculturation" in the HIV+ population; Mediation analysis was conducted to test whether the relationship between acculturation and depression is mediated by stress.

Ethical considerations

The study was approved by Yale University's Human Investigation Committee.

RESULTS

The range of the CD4 count was 295-895cells/mm3. Participants reported high depression symptomatology (range from 0-80, mean score=16.78, SD=9.83). (Note: People who have a CES-D score of at least 16 are considered to meet the threshold for depression.) Other demographic summary are presented in Table 1. Because the relationship between acculturation and perceived stress was curvilinear, a moderated mediation analysis was conducted. To calculate the relationship between perceived stress and depression, three acculturation levels were calculated. A level of 25% or lower was categorized as low, while a level between 25% and 75% was categorized as moderate, and a level greater than or equal to 75% was categorized as high. (See Figure 1, 2 and 3 for details.)

DISCUSSION

Acculturation is one factor contributing to the complex, multi-causal nature of mental health problems (Schensul & Trickett, 2009). Studies have reported that immigrants often remain attached to their original culture even while developing connections with the host culture. On the other hand, in the current study of HIV+ API, for those who were highly acculturated to the U.S., perceived stress was not related to depression symptomatology. A possible reason for this is that highly acculturated immigrants may be better at navigating the U.S. healthcare system. The stressors were significantly correlated to depression symptomatology, which could also have contributed to HIV-related stress or other issues in the immigrants' lives. For those who had low-to-moderate U.S. acculturation, perceived stress significantly mediated depression symptomatology. These participants said that they had experienced difficulty not only in handling the acculturation process but in dealing with the extra problems HIV/AIDS had added to their lives. The effort needed to locate suitable resources for HIV support while concurrently attempting to fit into mainstream culture was associated with stress and depression.

The perceived stress of acculturation combined with HIV infection is rarely discussed in HIV-related studies, especially studies on the API population. Only two studies focusing on the needs and characteristics of API with HIV/AIDS were found (Chin, Kang, Kim, Martinez, & Eckholdt, 2006; Chin et al., 2007), and these studies both suggest that language skills are key to immigrants' abilities to seek out and utilize the host country's healthcare system resources (Chin et al., 2007). In the current study, participants stated that they were

sent to the emergency room when opportunistic diseases occurred and were quickly diagnosed with AIDS; however, since they did not know how to navigate the U.S. healthcare system, they usually waited until they were no longer able to work before seeking treatment.

Limitations

There are several limitations to this study. First, the study participants came from 11 different ethnic backgrounds and spoke a variety of languages. However, since HIV+ API are a hard to reach population, to obtain a critical sample size we decided to keep the sample broad, while controlling for ethnicity and study site. Second, the relatively small sample size of the cross-sectional survey limited our ability to use more powerful statistical techniques, such as structural equation modeling. Finally, causal inferences should be drawn cautiously due to the cross-sectional nature of the data.

CONCLUSION

In this study, it was found that acculturation levels influenced perceived stress and depression in the HIV+ API population. Future interventions should focus on enhancing acculturation and reducing the perceived stress that can prompt harmful coping behaviors, such as high-risk sex and substance abuse, in order to decrease depression. Clinicians and community-based organizations should develop HIV-related education and support groups to increase HIV testing in the immigrant population. Multilevel methods that incorporate psychological and physiological level approaches to the HIV+ API immigrant population are likely to yield more effective, longer lasting depression reduction interventions.

Acknowledgments

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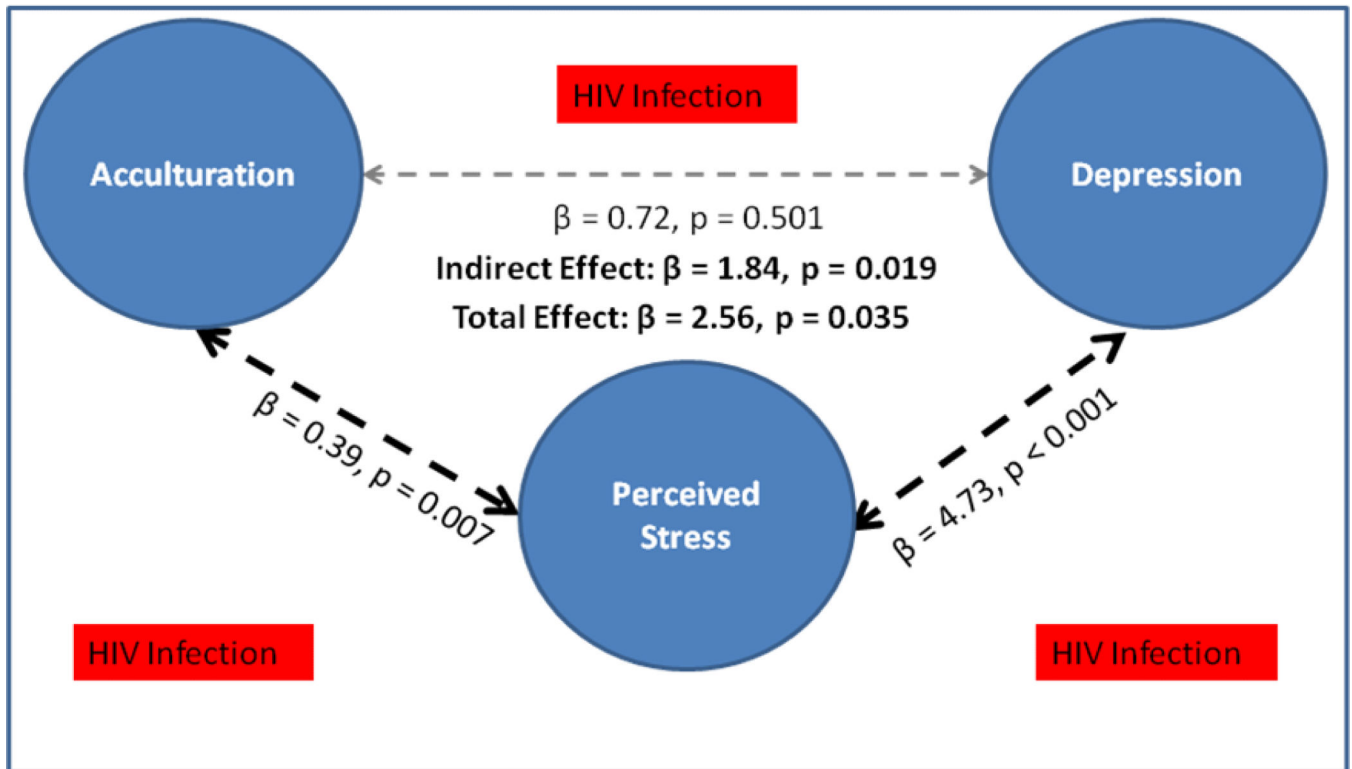
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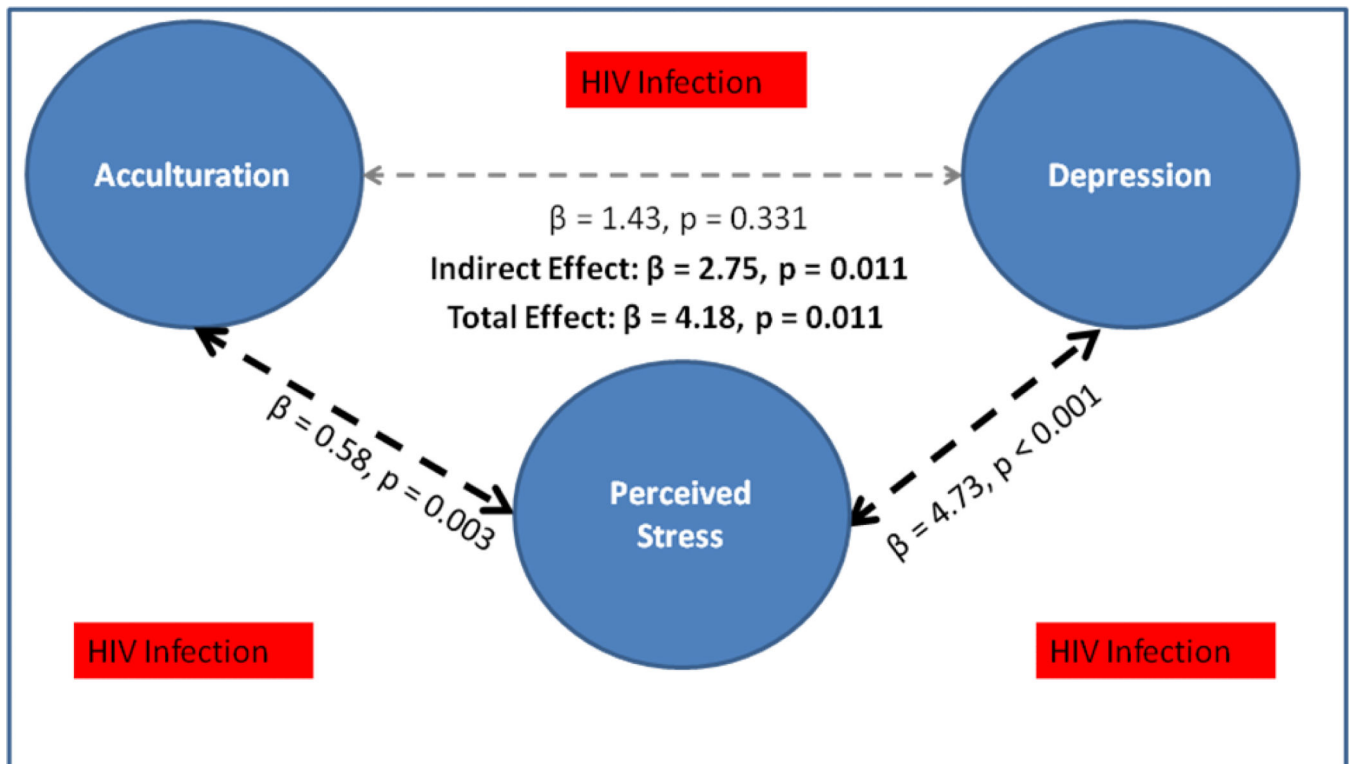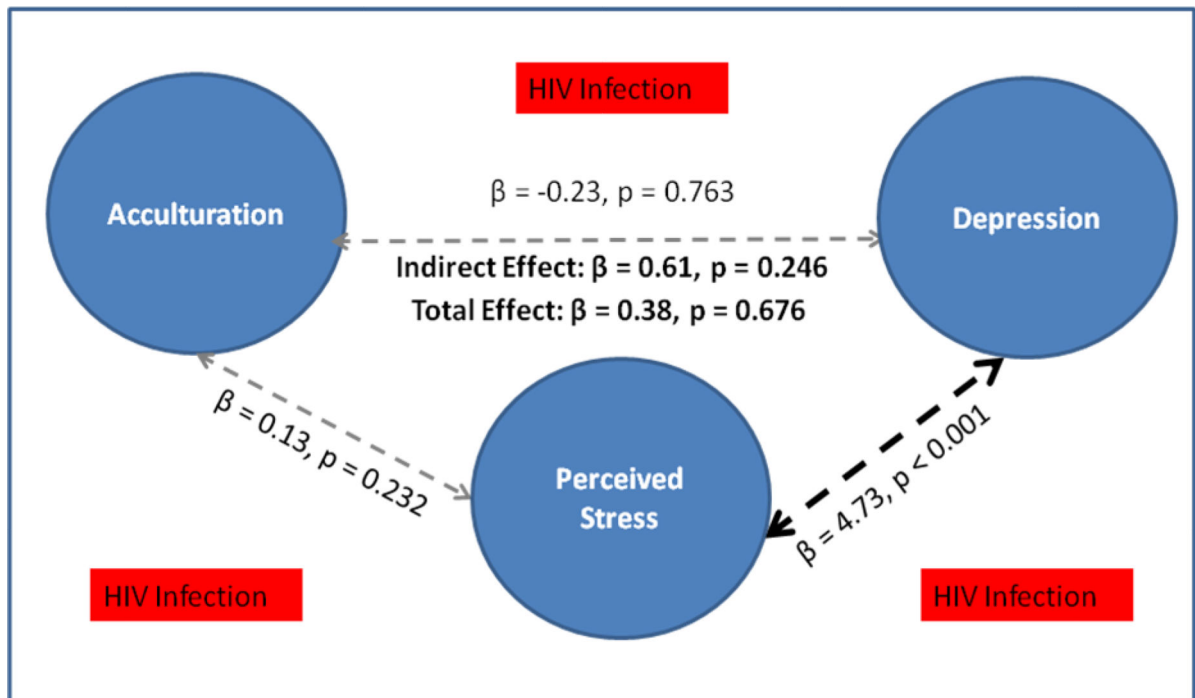
Figure 1. Low (25%) Acculturation
Notes : The direct relationship between acculturation and depression was nonsignificant, as were both of the indirect relationships with stress (β= 0.58; p = 0.003 & β = 0.39; p = 0.007). Participants with low acculturation had a total relationship between stress and depression that summed up both direct and indirect relationships (β = 4.73, p < 0.001& β = 4.73; p <0.001) which was significant at a level of 0.05 level, even after controlling for gender, ethnicity, education level, age, and health status. However, for highly acculturated study participants, the direct relationship between acculturation and depression was nonsignificant, as was the relationship between acculturation and stress. Only stress was significantly related to depression (β= 4.73; p < 0.001). This suggests that the relationship between acculturation and depression, at 66% and 72%, was mediated by stress in low-to-moderately acculturated study participants. In other words, the relationship between acculturation and depression is not mediated by stress in highly acculturated participants.

Figure 2. Moderate (50%) Acculturation

Notes : The direct relationship between acculturation and depression was nonsignificant, as were both of the indirect relationships with stress (β= 0.58; p = 0.003 & β = 0.39; p = 0.007). Participants with low acculturation had a total relationship between stress and depression that summed up both direct and indirect relationships (β = 4.73, p < 0.001 & β = 4.73; p <0.001) which was significant at a level of 0.05 level, even after controlling for gender, ethnicity, education level, age, and health status. However, for highly acculturated study participants, the direct relationship between acculturation and depression was nonsignificant, as was the relationship between acculturation and stress. Only stress was significantly related to depression (β= 4.73; p < 0.001). This suggests that the relationship between acculturation and depression, at 66% and 72%, was mediated by stress in low-to-moderately acculturated study participants. In other words, the relationship between acculturation and depression is not mediated by stress in highly acculturated participants.

Figure 3. High (75%) Acculturation

Notes : The direct relationship between acculturation and depression was nonsignificant, as were both of the indirect relationships with stress (β= 0.58; p = 0.003 & β = 0.39; p = 0.007). Participants with low acculturation had a total relationship between stress and depression that summed up both direct and indirect relationships (β = 4.73, p < 0.001& β = 4.73; p <0.001) which was significant at a level of 0.05 level, even after controlling for gender, ethnicity, education level, age, and health status. However, for highly acculturated study participants, the direct relationship between acculturation and depression was nonsignificant, as was the relationship between acculturation and stress. Only stress was significantly related to depression (β= 4.73; p < 0.001). This suggests that the relationship between acculturation and depression, at 66% and 72%, was mediated by stress in low-to-moderately acculturated study participants. In other words, the relationship between acculturation and depression is not mediated by stress in highly acculturated participants.

Table 1

New York and San Francisco Participants, Comparative Site Demographics

	Total	New York	San Francisco
	N = 50	N = 21	N = 29
Gender			
Male	84.00	81	86
Ethnicity **			
Chinese	38.00	86	3
South East Asians†	30.00	14	41
Pilipino	22.00	0	38
Others‡	10.00	0	17
Education **			
< HS	38.00	76	10
HS	32.00	14	45
Associate Degree	20.00	5	31
College or Higher	10.00	5	14
Immigrants			
Yes	76.00	76	76

	Mean	SD	Mean	SD	Mean	SD
Age	48.86	9.35	50.86	9.57	47.41	9.08
Acculturation **	1.20	0.91	0.51	0.44	1.70	0.83
Stress	2.19	1.01	2.21	1.06	2.16	0.98
CES-D *	16.78	9.83	12.71	8.10	19.72	10.04
General Health	2.72	1.03	2.86	1.06	2.62	1.01

Note

HS: High School

CES-D: Center for Epidemiologic Studies Depression Scale. Score higher than 16 shown the possible depression symptomology

General health score range from 0- not good to 4- very good

Acculturation score range from 0-none acculturated to 4-highly acculturated

†Southeast Asian: Vietnamese, Malaysian, Burma, Cambodia, Indonesian, Lao

‡Others: Japanese, Pacific Islander

*$p < 0.05$

**$p < 0.01$