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A person-centered examination of acculturation and psychological functioning among immigrant
Chinese and Korean mothers

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Abstract

Objectives: The present research used a person-centered approach to examine the acculturation styles of Chinese and Korean immigrant mothers in the United States, and demographic characteristics and psychological functioning associated with each acculturation style. **Methods:** The sample comprised 240 first-generation Chinese immigrant mothers (CIMs; $M = 37.80$ years, $SD = 4.55$) and 222 first-generation Korean immigrant mothers (KIMs; $M = 36.00$ years, $SD = 3.69$) of preschool children. Latent Profile Analysis was used to identify latent acculturation styles among CIMs and KIMs. We further examined whether mothers' acculturation styles were associated with their socio-demographic characteristics and psychological functioning within each cultural group. **Results:** Four acculturation styles were revealed among CIMs: Behaviorally-Undifferentiated/Psychologically-Assimilated, Behaviorally-Marginalized/Psychologically-Separated, Behaviorally-Psychologically Assimilated, and Behaviorally-Integrated, Psychologically-Undifferentiated. Three acculturation styles were uncovered among KIMs: Behaviorally-Psychologically Separated, Behaviorally-Psychologically Assimilated, and Behaviorally-Psychologically Integrated. Chinese Behaviorally-Integrated/Psychologically-Undifferentiated mothers and Korean Behaviorally-Psychologically Separated perceived the highest levels of co-ethnic concentration in their communities. Chinese Behaviorally-Marginalized/Psychologically-Separated mothers reported poorer psychological functioning than other Chinese mothers. Korean Behaviorally-Psychologically Separated mothers had poorer psychological functioning than other Korean mothers. **Conclusions:** Findings revealed the significant role of participation in the American mainstream culture for Asian immigrant mothers' psychological adjustment. The heterogeneity in the acculturation experiences of Asian immigrants in the United States was highlighted.

Public Significance Statement: Korean and Chinese immigrants acculturate differently in American society despite some shared cultural roots. Efforts should be made to facilitate East Asian immigrants' behavioral participation in American society to promote their positive adjustment.

Keywords: acculturation, Chinese immigrants, Korean immigrants, mothers, co-ethnic concentration, psychological functioning

Introduction

Chinese and Korean immigrants are among the fastest-growing immigrant groups in the United States (Hoeffel, Rastogi, Kim, & Hasan, 2012), who face acculturative challenges and may be at risk for poor psychological outcomes (Park, Song, & Lee, 2014). There are inconsistencies in the literature about which acculturation style is most adaptive for immigrants' healthy psychological functioning (e.g., Schwartz et al., 2013; Zhang, Kim, Hou, & Shen, 2019). These inconsistencies may be due, in part, to the conceptualization and measurement of the acculturation construct (Berry, 2006; Bornstein, 2017). Researchers have recently shifted from a variable-centered approach (i.e., examining the associations between acculturation levels and other variables) to a person-centered approach (i.e., identifying subgroups with different acculturations styles in a sample and characteristics of these subgroups) to capture the multidimensional nature of the acculturation process (e.g., Choi, Tan, Yasui, & Hahm, 2016; Kim, Wang, Chen, Shen, & Hou, 2015; Salas-Wright, Clark, Vaughn, & Córdova, 2015; Syed & Juang, 2018; Zhang et al., 2019).

In the current study, we focused on the acculturation of Chinese immigrant mothers (CIMs) and Korean immigrant mothers (KIMs) of young children, and its associations with mothers' demographic characteristics and psychological adjustment. Chinese and Korean cultures share Confucian-based values of interdependence (Cheah et al., 2016), which are depicted to be at odds with the more independent-focused culture of the United States. The differences may present greater risks for acculturative stress and poorer adjustment among CIMs and KIMs (Lee & Woo, 2013). However, despite the cultural similarities and the treatment of East Asian Americans as a homogeneous group in past research, variations across East Asian ethnic subgroups have been found (Chae & Foley, 2010). Different pre- and post-migration

factors, such as levels of exposure to Western culture before migration, similarities between the home culture and the host culture, and the size of co-ethnic community in the migration destination, may create sociocultural contexts that result in unique acculturation experiences and different levels of psychological well-being for each immigrant group (Bornstein, 2017). Thus, grouping Chinese and Korean immigrants under the broad categorization of “Asian American” fails to capture specificity in the acculturation experiences and psychological functioning of each group (Bornstein, 2017).

The bulk of existing literature examined acculturation in second or later generation children and adults in an effort to guide their adjustment (Yoon, Langrehr, & Ong 2011), whereas the acculturation of first-generation immigrant parents has not received sufficient attention. Indeed, first-generation immigrant parents are important socialization agents for ethnic minority children and these parents' levels of acculturation may significantly impact their children's acculturation, ethnic identity, and parent-child relationships (Huq, Stein, & Gonzalez, 2016; Kim, Chen, Wang, Shen, & Orozco-Lapray, 2013). Moreover, immigrant men and women have different acculturation experiences due to gender role socialization and expectations (Leu, Walton, & Takeuchi, 2011). A focus on immigrant mothers is warranted because mothers' greater caregiver role restrictions may place an additional burden on their acculturation and well-being (Chuang & Tamis-LeMonda, 2013). Chinese and Korean immigrant mothers usually bear more childrearing and household responsibilities and are therefore less exposed to the mainstream U.S. culture in daily work settings than their husbands (Chuang & Tamis-LeMonda, 2013; Cote, Kwak, Putnick, Chung, & Bornstein, 2015; Seo, Cheah, & Cho, 2020). However, during the preschool developmental period, mothers begin to interact with the larger mainstream American community (i.e. school, children's peers and their parents), and experience a

heightened and self-conscious period of parental socialization (Yu, Cheah, & Calvin, 2016). Thus, East Asian mothers with young children may face greater pressure to reconcile the values of their heritage and host cultures, which can significantly impact their psychological functioning (Kim, Shen, Huang, Wang, & Orozco-Lapray, 2014).

The present research had three goals. First, we examined Chinese and Korean immigrant mothers' acculturation from a person-centered, multidimensional approach with Latent Profile Analysis (LPA; Muthén, 2004), which used mothers' responses to four acculturation measures to determine the acculturation profiles in both samples. Second, we explored whether specific socio-demographic characteristics (age at immigration, length of residence, educational attainment, and perceived neighborhood co-ethnic concentration) were associated with these mothers' membership in each acculturation profile within each cultural group. Finally, we assessed potential differences in the psychological functioning of the profiles within each cultural group.

Acculturation

Most early acculturation research has been guided by Berry's model, which describes four acculturation styles based on how immigrants balance the heritage and the host culture orientations (Berry, 1980). *Integrated* immigrants participate in both heritage and host cultures, whereas *marginalized* immigrants reject both cultures. *Assimilated* immigrants seek out the host culture, leaving their heritage culture behind, whereas *separated* immigrants maintain their heritage culture and disregard the host culture (Berry, 2006). In a meta-analysis, Yoon et al. (2011) highlighted that researchers now tend to consider acculturation as a continuous, multidimensional process that interacts with social contexts. Indeed, researchers increasingly call for person-centered examinations of acculturation to reveal unique acculturation patterns that

may not be captured by Berry's (1980) theoretical framework and the variance that may exist within a sample (e.g., Zhang et al., 2019). For example, Choi et al. (2016) identified a modest bicultural subgroup within a Korean American sample whose identification towards their heritage culture was lower than the integrated subgroup but comparable to their identification towards the host culture. Salas-Wright et al. (2015) combined language proficiency with cultural identity and identified five acculturation profiles in a Hispanic American sample and found that many of the subgroups identified did not fit any of the four styles proposed in Berry's (1980) model. Thus, the present study adopted a person-centered approach and examined acculturation as a continuous and multidimensional process in our two samples.

Acculturation components. *Behavioral* acculturation refers to immigrants' active participation in the visible aspects of their host and heritage cultures, whereas *psychological* acculturation refers to immigrants' identification with the values of either culture (Berry, 1992). Although sometimes related, behavioral and psychological acculturation are distinct processes, and are associated with different socio-demographic characteristics and adjustment outcomes (Ward & Kus, 2012). Indeed, individuals' ethnic identity and identifications of cultural values (i.e., psychological acculturation) are primarily influenced by family environments and upbringing experiences (Geeraert 2016; Huq et al., 2016), whereas environmental factors such as community members and opportunities to interact with the context may contribute to individuals' engagement in cultural practices (i.e., behavioral acculturation; Schwartz, Vignoles, Brown, & Zagefka, 2014). Further, the change of cultural values is also proposed as an important factor underlying individuals' variations in behavioral acculturation (Gonzales, Fabrett, & Knight, 2009). However, the different roles and correlates of psychological and behavioral acculturation

in the psychological functioning of Asian immigrant mothers have not received sufficient attention, and therefore were assessed in the current study.

Variations between Chinese and Korean immigrants in the United States. Despite similar Confucian-based cultural backgrounds, Chinese and Korean immigrant mothers' different pre- and post-migration experiences may lead to unique acculturation styles, even when residing in the same region. For example, Chinese immigrants, particularly those from mainland China, may be socialized with different sociopolitical ideologies and have low levels of exposure to U.S. culture before migration (Dong, Bergren, & Chang, 2015). Chinese immigrants with such experiences may experience report more conflict and inconsistencies in their psychological and behavioral acculturation processes. Indeed, Chinese immigrants were found to report poorer psychological adjustment and more difficulties adapting to the U.S. society than other East Asian immigrants (Chae & Foley, 2010; Ho, 2014). In contrast, Korean immigrants tend to arrive with stronger Westernized or Christian values due to a longer history of exposure to American culture in Korea (Cheah et al., 2016). A study of Korean immigrants in Los Angeles found that they reported maintaining greater ethnic pride and residing in closer-knit Korean communities than other Asian immigrant groups (Min, 2017). Thus, KIMs may have more consistencies in their psychological and behavioral acculturation than other Asian groups. Though no study has systematically examined experiences of Chinese and Korean immigrants with a nationally-representative sample, the existing evidence implies potential differences in the two immigrant groups. However, few researchers have examined the unique acculturation processes within these two ethnic groups.

The first goal of the present research was to adopt a person-centered approach to examine the behavioral and psychological acculturation of first-generation CIMs and KIMs. We utilized

the LPA method (Hagenaars & McCutcheon, 2002) to derive different acculturation profiles based on mothers' patterns of behavioral and psychological acculturation to both their heritage and the host cultures. The profiles identified served as the acculturation styles in subsequent analyses. Tahseen and Cheah (2012) found four acculturation styles (i.e., psychologically-behaviorally integrated, assimilated, undifferentiated, and separated) in CIMs. There were notable consistencies among CIMs' behavioral and psychological acculturation. This consistency was surprising given the distinction between behavioral and psychological acculturation processes (Ward & Kus, 2012), but may have been due to the lack of statistical power and representation of the local CIM group with its small sample size (83 CIMs). We expected to find similar acculturation components (e.g., undifferentiated) in CIMs as those previously uncovered by Tahseen and Cheah (2012) because the study sampled CIMs from a similar geographic area as the current study, but also anticipated more differences between CIMs' behavioral and psychological acculturation to emerge with a larger sample in the current study.

Choi et al. (2016) identified three acculturation profiles and found that the integrated style was most prevalent in a sample comprised mostly of second-generation Korean American adolescents in Chicago. However, there has been limited examination of acculturation utilizing the person-centered method among first-generation Korean immigrant adults, particularly mothers. Given that Korean first-generation immigrants tend to maintain strong ethnic pride and connection within their co-ethnic Korean communities (Choi, Park, Lee, Yasui, & Kim, 2018; Min, 2017), we anticipated a larger proportion of mothers reporting separated acculturation styles within the first-generation KIM sample. Moreover, due to the varying socio-cultural experiences between CIMs and KIMs discussed above, we expected to identify different acculturation patterns for the two groups.

Demographic Profiles of Acculturation Styles

The second aim of the present research was to better contextualize the acculturation styles among CIMs and KIMs with an array of associated demographic variables. Ward and Geeraert (2016) highlighted that first-generation immigrants' acculturation is influenced by the starting age of the process, contexts (i.e., school, work, society), and individuals' opportunities to interact with these contexts. We examined age at immigration and length of residence as potential correlates of acculturation because these two variables indicate the onset of the acculturation process and individuals' length of exposure to the host culture (Schwartz, Birman, Benet-Martínez, & Unger, 2017). Education attainment was examined as a correlate because school and educational settings are major contexts for first-generation immigrants to interact with the host culture. Further, we considered mothers' perceived concentration of co-ethnics in their neighborhoods as acculturation is emphasized to not only happen intrapersonally but also during interpersonal interactions within daily social contexts (Schwartz et al., 2014).

Specifically, younger age at immigration may lead to lower levels of enculturation of the heritage culture and more openness and opportunities to interact with the host culture, which contribute to immigrants' endorsement of the assimilated acculturation style (Cheung, Chudek, & Heine, 2011). Greater length of residence in the host country may result in longer exposure to the values and behaviors of the host culture over time and lead to immigrants' development of an assimilated or integrated acculturation style (Schwartz et al., 2017). Moreover, immigrants with higher education levels (either completed in the home culture or the host culture) may have a greater likelihood of interacting with both home and host cultures in educational or work contexts, which render them more likely to develop an integrated acculturation style (Garcia Coll et al., 2002). Indeed, research has consistently revealed that higher education is associated with

more harmonious bicultural integration and a more integrated acculturation style (Dow, 2011; Sheikh & Anderson, 2018). Further, perceived co-ethnic neighborhood concentration has been found to be inversely related to acculturation to the host culture (Kwag, Jang, & Chiriboga, 2012) and predicted fewer consequences associated with acculturation such as weight gain (Lê-Scherban et al., 2014).

However, few researchers have examined the associations between these demographic variables and the different acculturation styles that may emerge among Korean and Chinese immigrant mothers. Based on previous research, we expected that younger age at immigration, greater length of residence in the United States, higher levels of maternal education, and lower levels of co-ethnic concentration would be associated with the integrated and assimilated acculturative styles in both cultural groups.

Psychological Functioning

The third goal was to explore the psychological functioning of CIMs and KIMs with the different acculturation styles. Berry (2006) asserted that the integrated acculturation style is the most optimal for immigrants' overall health compared to other acculturation styles. However, studies using person-centered approach revealed that the benefits of the integrated style may not be absolute (Kim et al., 2015; Syed & Juang, 2018), but instead depend on the combination of both behavioral and psychological components of acculturation (Salas-Wright et al., 2015).

Specifically, research with Chinese and Korean immigrants highlighted the importance of behavioral integration for their psychological functioning (Choi et al., 2016; Yoon et al., 2013). Korean immigrants with an integrated acculturation profile reported better relationships with peers and parents than those who were less integrated (Choi et al., 2016). Moreover, CIMs who were behaviorally integrated but did not strongly identify with either American or Chinese

values reported similar adjustment outcomes as behaviorally and psychologically integrated mothers, and greater well-being than behaviorally and psychologically separated mothers (Tahseen & Cheah, 2012). Thus, for some immigrant mothers, behavioral integration may serve as a buffer against the potentially adverse effects of psychological marginalization. Given the robust associations between identification with one's ethnic group and psychological well-being for both Chinese and Korean immigrants (Choi, Tan, Yasui, & Pekelnicky, 2014; Yu et al., 2016), it is imperative to examine the associations between their psychological and behavioral acculturation to both heritage and host cultures and their psychological functioning.

Finally, researchers have predominantly focused on negative outcomes associated with acculturation, such as acculturative stress and depression. However, acculturative experiences can also have benefits for psychological well-being. In particular, the assimilated and integrated acculturation styles are predictive of greater life satisfaction and better mental health (Berry & Hou, 2016). Moreover, CIMs with a behavioral and psychological integration style reported greater psychological well-being than those with a separated acculturation style (Tahseen & Cheah, 2012). Thus, the current study examined both positive (i.e. psychological well-being) and negative (i.e. depressive symptoms) indicators of psychological functioning. Given past findings in Chinese and Korean immigrant samples, we generally expected that CIMs and KIMs with a more integrated style would report greater psychological well-being and fewer depressive symptoms than their counterparts with a more separated style.

Method

Participants

Chinese immigrant sample. The Chinese sample consisted of 240 Chinese immigrant mothers ($M = 37.80$ years, $SD = 4.55$) of preschool-aged children ($M = 4.60$ years, $SD = 1.15$,

52.50% males). On average, Chinese mothers had been in the United States for 10.86 years ($SD = 5.82$), ranging from 3 months to 31 years. Almost all mothers had at least a college degree (92.91%). The mothers were from Mainland China (80.42%), Taiwan (14.17%), Hong Kong (1.25%), the U.S. (2.92%), or other countries (1.25%). All of the children were from two-parent families and most had at least one sibling (65.83%).

Korean immigrant sample. The Korean sample consisted of 222 Korean immigrant mothers ($M = 36.00$ years, $SD = 3.69$) of preschool-aged children ($M = 4.30$ years, $SD = 1.02$, 44.60% males). On average, Korean mothers had been in the United States for 11.74 years ($SD = 8.40$), ranging from 2 months to 37 years and 9 months. The majority of the mothers had at least a college degree (74.77%). The mothers' countries of origin were either Korea (92.34%) or the U.S. (7.66%). All of the children were from two-parent families (100%) and most had at least one sibling (79.28%).

Procedure

The participants were recruited from Chinese and Korean organizations, language schools, supermarkets, churches, and libraries throughout Maryland, Washington D.C., and Virginia. Data collection was conducted during a home visitation by two research assistants who were fluent in the preferred language or dialect (English, Mandarin, Cantonese, or Korean). After providing written consent, mothers completed the questionnaires in their preferred language (English, simplified Chinese, traditional Chinese, or Korean). Participants received \$40 and project newsletters as compensation. The University Institutional Review Board provided ethical approval for the study [# blinded].

Measures

The measures were translated from English to Chinese and Korean using an extensive translation and back-translation process as recommended by Pena (2007). Measures used in the present study have demonstrated good psychometric properties with Asian American samples (e.g., Cheah et al., 2016; Park & Kim, 2008; Seo et al., 2018; Yu et al., 2016).

Demographics. The *Family Description Measure* (Bornstein, 1991) was used to obtain detailed demographic information including the mother's age, education, nationality, perceived co-ethnic concentration in their communities, and *length of residence* in the United States. Mothers' *age at immigration* was calculated from their age and length of residence.

Psychological acculturation to American culture. The *European-American Values Scale for Asian-Americans-Revised* (EAVS-AA-R; Hong, Kim, & Wolfe, 2005) assessed mothers' identification with European-American values, across areas of childrearing, autonomous functioning, and friendships on a scale of 1 (*strongly disagree*) to 4 (*strongly agree*). The 25 items were summed to create an overall score of psychological acculturation to American values. An example item includes, "I do not like to serve as a model for others". For the present sample, $\alpha = .65$ for the Chinese and $.62$ for the Korean sub-samples. Though the reliability scores did not meet the $.70$ guideline, they were consistent with the levels reported in previous studies (e.g., Cheah, Zhou, Leung, & Vu, 2018; Choi & Miller, 2014; Park & Kim, 2008). Because psychological acculturation to the U.S. culture is a key construct for our research question and the EAVS-AA-R is the most frequently used measure, it is retained in the analyses.

Psychological acculturation to Chinese or Korean culture. The *Asian-American Values Scale-Revised* (AAVS-R; Kim & Hong, 2004) assessed participants' identification with Chinese and Korean values, such as filial piety, conformity, and humility using a scale of 1 (*strongly disagree*) to 4 (*strongly agree*). The 25 items in the scale were summed to create an

overall score of psychological acculturation to Chinese or Korean values. A sample item includes, “*One should be humble and modest*”. For the present sample, $\alpha = .70$ for the Chinese sub-sample and $.75$ for the Korean sub-sample.

Behavioral acculturation to heritage and American cultures. Mothers' behavioral acculturation was measured using the *Cultural and Social Acculturation Scale* (CSAS; Lee, 1996). The scale comprised items regarding mothers' *participation* in their heritage (i.e. Chinese or Korean) and American cultures across several domains, such as social activities, language proficiency, and lifestyle. Sample items include, “*How often do you spend time with your Chinese/Korean (Non-Chinese/Non-Korean) friends?*” (1 (*almost never*) to 5 (*more than once a week*)) and “*How well do you speak Chinese/Korean (English)?*” (1 (*extremely poor*) to 5 (*extremely well*)). For the present sample of CIMs, $\alpha = .67$ for the Heritage factor and $.72$ for the American factor. For the sample of KIMs, $\alpha = .77$ for the Heritage factor and $.80$ for the American factor.

Psychological Functioning

Depressive symptoms. The Beck Depression Inventory (BDI-II; Beck, Steer & Brown, 1996) comprised 21 items assessing somatic, affective, and behavioral aspects of depression using a 4-point scale. A sample item includes “*I feel sad*”. For the present sample, $\alpha = .87$ for the Chinese sub-sample and $.81$ for the Korean sub-sample.

Positive psychological functioning. The *Psychological Well-Being Scale* (PWBS; Ryff, 1995) was used to assess mothers' positive psychological functioning using a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). An example item includes “*I am quite good at mastering the many responsibilities of my daily life*”. An overall psychological well-being score was created by

summing mothers' scores on all of the subscales. For the present sample, $\alpha = .79$ for the Chinese sub-sample and .80 for the Korean sub-sample.

Analytic Plan

The Latent Profile Analysis (LPA) was conducted separately for CIMs and KIMs. LPA is a widely applied mixture modeling technique to identify unobserved heterogeneous subgroups in a sample (Muthén, 2004). The following acculturation variables were submitted as predictors to the LPA models: (1) behavioral acculturation to American culture (Behavioral-American) and to (2) heritage culture (Behavioral-Chinese or Behavioral-Korean), (3) psychological acculturation to American culture (Psychological-American) and (4) to heritage culture (Psychological-Chinese or Psychological-Korean).

The following fit indexes were used to evaluate the models: Akaike's Information Criterion (AIC), Bayesian Information Criterion (BIC), sample-size-adjusted Bayesian Information Criterion (SSA-BIC), Lo-Mendell-Rubin likelihood ratio test (LMR), bootstrap likelihood ratio test (BLRT), and the entropy. The best model is indicated by: (1) Lower values of AIC, BIC, and SSA-BIC compared to other profile solutions, (2) larger entropy in comparison to other profile solutions, and (3) significant LMR and BLRT ($p < .05$). Specifically, BIC and BLRT more consistently identify the correct model in a smaller sample size compared to other fit indexes (Nylund, Asparouhov, & Muthén, 2007), and thus considered the favorable indicators for profile solutions in the present study.

After identifying the latent profiles, two strategies were used to describe the profiles. First, a set of one-way between-group (BG) ANOVAs and multiple regressions were utilized to examine whether the mean of a profile differed from the means of other profiles and the sample mean on each of the four acculturation factors (weighted effect code was used to recode the

profile variable for regression analysis). Second, BG-ANOVAs were used to examine the demographic profiles and psychological functioning of mothers in each profile (chi-square analyses were used for analyses of educational attainment only).

Results

First, we compared CIMs and KIMs on the demographic and study variables. On average, CIMs immigrated to the U.S. at older ages ($M_{\text{diff}} = 3.23$, $t(460) = 4.51$, $p < .001$, $d = 0.45$), had higher levels of education ($M_{\text{diff}} = 0.61$, $t(460) = 7.67$, $p < .001$, $d = 0.74$), were less acculturated towards their heritage culture behaviorally ($M_{\text{diff}} = -1.99$, $t(460) = -3.42$, $p < .001$, $d = 0.32$) and psychologically ($M_{\text{diff}} = -2.11$, $t(460) = -3.86$, $p < .001$, $d = 0.36$), and reported better psychological well-being ($M_{\text{diff}} = 3.48$, $t(460) = 3.13$, $p < .01$, $d = 0.29$) compared to KIMs. CIMs and KIMs did not differ on length of residence in the U.S. ($M_{\text{diff}} = -1.78$, $t(460) = -1.69$, $p = .10$, $d = 0.16$), perceived co-ethnic concentration ($M_{\text{diff}} = -0.11$, $t(460) = -1.28$, $p = .20$, $d = 0.12$), behavioral ($M_{\text{diff}} = 1.27$, $t(460) = 1.82$, $p = .07$, $d = 0.17$) and psychological ($M_{\text{diff}} = -0.53$, $t(460) = -1.18$, $p = .24$, $d = 0.11$) acculturation towards the U.S. culture, and depressive symptoms ($M_{\text{diff}} = -0.34$, $t(460) = -0.54$, $p = .59$, $d = 0.05$).

Aims One and Two: Identifying Acculturation Profiles and Associated Demographic Profiles

Table 1 provided the fit indexes for possible latent profile structures in Chinese and Korean samples. We retained the four-profile solution for Chinese sample and the three-profile solution for Korean sample because they exhibited lower BIC values, larger entropy, as well as significant BLRT and LMR values in comparison to other profile solutions.

Importantly, Profile 3 in the Chinese sample contained only thirteen participants, which might have limited our statistical power to detect its differences from other profiles in Chinese

sample. However, given the limited amount of person-centered research on acculturation in this sample of mothers, Chinese Profile 3 was retained for follow-up analyses. The results of CIMs were presented in Table 2 and Figure 1, and the results of KIMs were presented in Table 3 and Figure 2. The description of each of the profiles was presented below, separately for Chinese and Korean mothers.

Four-Profile Solution of Acculturation among Chinese Immigrant Mothers

Chinese Profile 1 (N = 107; 44.6% of the sample). Profile 1 comprised the largest group in the sample. Profile 1 mothers reported average levels of engagement in both the Chinese and American behavioral dimensions, and higher scores on the Psychological-American orientation but lower scores on the Psychological-Chinese orientation compared to the sample mean. Thus, this profile was labeled *Behaviorally-Undifferentiated, Psychologically-Assimilated*.

Profile 1 mothers were older at immigration and had lived in the United States for a shorter amount of time than Profile 3 mothers. Profile 1 mothers' education levels and perceived co-ethnic concentration did not differ from mothers in other profiles.

Chinese Profile 2 (N = 80; 33.3% of the sample). Mothers in Profile 2, the second largest group, scored the lowest on Behavioral-American orientation and lower than the majority of the sample (Profiles 1 and 4) on Behavioral-Chinese orientation. Psychologically, these mothers were the lowest on the American orientation and the highest on the Chinese orientation. Thus, Profile 2 was labeled *Behaviorally-Marginalized, Psychologically-Separated*.

Profile 2 mothers were older at immigration and had lived in the United States for a shorter amount of time than Profile 3 mothers. A higher percentage of Profile 2 mothers had high school or lower levels of education compared to all other profiles. They were also less likely to

have a graduate degree than Profile 4 mothers. Further, Profile 2 mothers perceived lower levels of co-ethnic concentration than Profile 4 mothers.

Chinese Profile 3 (N = 13; 5.4% of the sample). Profile 3 was the smallest profile in the sample. Profile 3 mothers scored higher on the American behavioral and psychological orientations, but lower on the Chinese behavioral and psychological orientations compared to the sample mean. Therefore, this profile was labeled *Behaviorally-Psychologically Assimilated*.

As expected, Profile 3 mothers were the youngest at immigration and had lived in the United States for the longest amount of time compared to mothers from other profiles. Profile 3 mothers' education levels and perceived co-ethnic concentration did not differ from mothers in the other profiles.

Chinese Profile 4 (N = 40; 16.7% of the sample). Behaviorally, Profile 4 mothers scored higher on both American and Chinese orientations in comparison to the sample mean, typical of the integrated style. Psychologically, these mothers reported average levels of endorsement towards both Chinese and American orientations. Therefore, this profile was labeled *Behaviorally-Integrated, Psychologically-Undifferentiated*.

Profile 4 mothers were also older at immigration and had lived in the United States for a shorter amount of time than Profile 3 mothers. Profile 4 mothers were the most educated and more likely to have obtained a graduate degree than Profile 2 mothers. Further, Profile 4 mothers perceived higher levels of co-ethnic concentration than Profile 2 mothers.

Three-Profile Solution of Acculturation among Korean Immigrant Mothers

Korean Profile 1 (N = 174; 78.4% of the sample). Profile 1 was the largest profile in the Korean sample. Profile 1 mothers scored lower on the behavioral-American orientation and higher on the psychological-Korean orientation compared to the sample mean. Their levels of

psychological-American acculturation were not different from the sample mean but significantly lower than Profiles 2 and 3. Therefore, this profile was labeled *Behaviorally-Psychologically Separated*.

Profile 1 mothers were older at immigration and lived in the United States for a shorter amount of time than Profiles 2 and 3. Profile 1 mothers were less likely to have obtained a graduate degree and more likely to have a high school or lower levels of education compared to Profile 3 mothers. Profile 1 mothers also perceived higher levels of co-ethnic concentration than Profile 2 mothers.

Korean Profile 2 (N = 25; 11.3% of the sample). Profile 2 mothers reported higher levels of behavioral and psychological acculturation on the American orientations but lower levels on the Korean orientations, typical of the assimilated style. Therefore, this profile was labeled *Behaviorally-Psychologically Assimilated*.

Profile 2 mothers were younger at immigration and had lived in the United States for a longer period than mothers of Profiles 1 and 3. They were also less likely to have obtained a graduate degree than Profile 3 mothers and perceived lower levels of co-ethnic concentration than Profile 1 mothers.

Korean Profile 3 (N = 23; 10.4% of the sample). Profile 3 mothers scored relatively higher on behavioral and psychological acculturation to both Korean and American orientations compared to the sample means and the other two profiles. Therefore, this profile was labeled *Behaviorally-Psychologically Integrated*.

Profile 3 mothers were older at immigration and had lived in the United States for a shorter amount of time than Profile 2 mothers, but they were younger at immigration and had lived in the United States for a longer period than Profile 1 mothers. Profile 3 mothers were more

educated than the rest of the sample. Profile 3 mothers' perceived co-ethnic concentration did not differ from mothers in the other profiles.

Psychological Functioning

The third aim of the present research was to examine whether the profiles differed on mothers' depressive symptoms and psychological well-being (Tables 2 and 3).

Depressive symptoms. One-way BG ANOVAs indicated significant mean differences in depression across the profiles in both samples. Among CIMs, Profile 4 (Behaviorally-Integrated, Psychologically-Undifferentiated) mothers reported lower levels of depressive symptoms than Profile 1 (Behaviorally-Undifferentiated, Psychologically-Assimilated) mothers, Profile 2 (Behaviorally-Marginalized, Psychologically Separated) mothers, and the sample mean. Among KIMs, Profile 2 (Behaviorally-Psychologically Assimilated) mothers and Profile 3 (Behaviorally-Psychologically Integrated) mothers reported lower levels of depressive symptoms than Profile 1 (Behaviorally-Psychologically Separated) mothers.

Psychological well-being. One-way BG ANOVAs indicated significant mean differences in overall psychological well-being across the profiles in both samples. Among CIMs, Profile 4 (Behaviorally-Integrated, Psychologically-Undifferentiated) mothers reported higher well-being than Profile 1 (Behaviorally-Undifferentiated, Psychologically-Assimilated) mothers, Profile 2 (Behaviorally-Marginalized, Psychologically-Separated) mothers, and the sample mean. In addition, Profile 2 mothers reported lower well-being than all other profiles and the sample mean. Among KIMs, Profile 1 (Behaviorally-Psychologically Separated) mothers scored lower on well-being than Profile 2 (Behaviorally-Psychologically Assimilated) mothers, Profile 3 (Behaviorally-Psychologically Integrated) mothers, and the sample mean.

Discussion

The present research adopted a person-centered approach to examine the behavioral and psychological acculturation among CIMs and KIMs of young children. Additionally, we compared the demographic profiles and psychological functioning between the acculturation profiles for these CIMs and KIMs. The LPA analysis uncovered unique nuances of acculturation experiences among Chinese and Korean samples, which cannot be captured with research designs that compound behavioral and psychological acculturation and combine different Asian sub-groups. There was only one overlapping acculturation style (i.e., Behaviorally-Psychologically Assimilated) among CIMs and KIMs, which represented the smallest proportion in both groups. Some similarities and notable differences were found for CIMs and KIMs in other profiles.

Differences between Psychologically-Separated CIMs and KIMs

As expected, the Behaviorally-Psychologically Separated style was the most prevalent acculturation style in KIMs (78.4%) and a considerable percentage of CIMs reported a psychologically-separated acculturation style (33.3%). This result is consistent with previous findings indicating that first-generation Chinese and Korean immigrant mothers may seek out social supports and resources from their co-ethnic settings (Lee, Han, Huh, Kim, & Kim, 2014), which may limit their need or opportunities to interact with the host culture, further maintaining their separated tendencies.

Importantly, the psychological and behavioral dimensions of KIMs with a separated profile were more consistent compared to psychologically-separated CIMs. Korean immigrants have a strong sense of ethnic pride and receive substantial support from the Korean communities in the United States (Min, 2017). Therefore, Korean mothers may perceive less need or motivation to engage themselves in the larger mainstream culture, and maintain strong

endorsement of their heritage culture and great involvement in Korean cultural practices (i.e. psychological and behavioral separation; Choi et al., 2018).

In contrast, Chinese psychologically-separated mothers reported low levels of behavioral engagement in both Chinese and American cultures. Chinese immigrants may experience a more different social system (Ho, 2014) before migration compared to Korean immigrants and might be less familiar with the social and community systems of the United States than their Korean counterparts. With the lowest levels of psychological identification with the American mainstream culture compared to other profiles, these Chinese mothers may lack not only the motivation to participate in American cultural practices, but also the knowledge and understanding of how to obtain support from the relatively smaller co-ethnic Chinese community in Maryland (Bertram, Poulakis, Elsasser, & Kumar, 2014). Therefore, Chinese psychologically-separated mothers may behaviorally engage less in both Chinese and American communities.

Differences between Behaviorally-Integrated CIMs and KIMs

A small proportion of mothers reported a behaviorally-integrated acculturation style in both the Chinese (16.7%) and Korean (10.4%) immigrant samples. Interestingly, behaviorally-integrated Korean mothers reported an integrated psychological acculturation style, whereas Chinese behaviorally-integrated mothers were psychologically undifferentiated. A possible explanation is that there might be different factors driving CIMs' and KIMs' behavioral acculturation. Specifically, KIMs' behavioral integration may be a reflection of their cultural values and psychological integration (Gonzales et al., 2009), whereas CIMs' behavioral integration may be more closely related to contextual and environmental factors such as community support (Schwartz et al., 2014). The findings that behavioral-integrated CIMs

perceived higher levels of co-ethnic concentration in their neighbourhood communities than behavioral-marginalized CIMs also lend support to this speculation.

Behaviorally-Undifferentiated/Psychologically-Assimilated CIMs

An examination of their basic demographic characteristics indicated that Chinese Behaviorally-Undifferentiated/Psychologically-Assimilated mothers shared few similarities with psychologically-assimilated KIMs and should be considered a different profile that was not identified among KIMs. Despite their low levels of behavioral participation in the American mainstream culture, these CIMs appear to have adapted some of their traditional beliefs and are actively assimilating American cultural values (Cheah, Li, Zhou, Yamamoto, & Leung, 2015). These Psychologically-Assimilated mothers may be more willing to adopt education- and parenting-related American goals and values to facilitate their children's development.

Demographic Correlates

A notable number of consistencies across both ethnic groups was observed regarding the profile correlations with age of immigration, length of residence, and education level. Behaviorally-integrated mothers (regardless of psychological acculturation) were more educated than psychologically-separated mothers, whereas CIMs and KIMs with assimilated acculturation styles migrated to the U.S. at an earlier age and had resided in the U.S. for a longer time. These findings were consistent with previous literature (Cheung et al., 2011; Schwartz et al., 2017).

Interestingly, regarding perceived co-ethnic concentration in neighborhoods, Korean separated mothers were higher than assimilated KIMs, whereas Behaviorally-Marginalized/Psychologically-Separated CIMs were lower than Behaviorally-Integrated, Psychologically-Undifferentiated CIMs. These findings suggested that separated KIMs and behaviorally-integrated CIMs in this region may choose to live in neighborhoods with higher co-

ethnic densities. It is also possible that, in the Maryland-Washington D.C.-Virginia area, living in communities with high Korean immigrant population density may cultivate a separated acculturation style for KIMs, whereas CIMs living in neighborhoods with high Chinese population density may seek co-ethnic supports and participate in both Chinese and American mainstream communities. In contrast, a separated psychological acculturation style along with behavioral marginalization for CIMs may indicate a lack of interaction with and support from local co-ethnic groups. These findings highlighted the potentially different roles of a similar aspect of social context (i.e., perceived co-ethnic concentration in mothers' neighborhoods) in the acculturation processes of Chinese and Korean immigrant mothers in this region of the U.S.

Acculturation Styles and Psychological Functioning

Associations between mothers' acculturation styles and their psychological functioning were revealed. In both the Chinese and Korean samples, mothers in the Integrated and Assimilated profiles reported better psychological functioning than mothers in other profiles, as expected. Consistent with previous research (Lawton & Gerdes, 2014; Syed & Juang, 2018), immigrants who endorse the separated or marginalized style are more likely to lack resources and support from the dominant host culture (e.g., opportunities for employment and parenting), resulting in poorer psychological functioning. Mothers with low levels of behavioral integration in combination with low commitment to the values of host culture may experience prolonged cognitive dissonance between the two cultures, adversely contributing to their psychological functioning (Berry & Hou, 2016).

The differences in psychological functioning between CIMs in the Psychologically-Assimilated Behaviorally-Undifferentiated and Psychologically-Undifferentiated Behaviorally-Integrated profiles further highlighted the importance of behavioral acculturation for immigrant

mothers' adjustment. Our findings suggested that behavioral integration may be more beneficial for immigrant mothers' psychological functioning than psychological assimilation. Behaviorally-integrated CIMs may be able to obtain more tangible support as they are more involved in both American (i.e. children's school) and Chinese (i.e. Chinese community) contexts (Du & Wei, 2015; Tahseen & Cheah, 2012) and have greater access to resources from both communities (Choi et al., 2016; Yoon et al., 2013).

Examination of the psychological functioning of the two Chinese profiles with low levels of behavioral engagement in the mainstream U.S. society revealed interesting patterns. Psychologically-Separated Behaviorally-Marginalized mothers reported poorer psychological well-being than Behaviorally-Undifferentiated Psychologically-Assimilated mothers. This result is consistent with previous findings that marginalized, especially behaviorally-marginalized immigrants reported the poorest psychological functioning (Schwartz et al., 2017; Syed & Juang, 2018). Moreover, this result suggests that psychological acculturation to the host culture may be important for CIMs' psychological functioning. Mothers with a stronger identification with the mainstream American culture may possess more positive attitudes towards U.S. society and be more satisfied after migration (Du & Wei, 2015), which may buffer against the negative effects of behavioral separation.

Maryland-Washington D.C.-Virginia area is a newer destination for Chinese and Korean immigrants, which may have contributed to almost all of our sample being first-generation immigrants. Our sample is representative of Chinese and Korean immigrant families in this region who migrated during the past two decades and tend to be of middle to higher socioeconomic status (e.g., first-generation, married, and well-educated; McCabe, 2012). These families are seemingly homogeneous if only considering their demographic profiles. The

findings of this study contributed to the literature by revealing considerable heterogeneity not only between Chinese and Korean immigrant groups in the same regions, but also within each immigrant group. The findings that 33.3% and 78.4% of well-educated, middle- to higher-SES CIMs and KIMs in this region reported behaviorally marginalized or separated styles and may be at risk of poor psychological adjustment warrant attention. However, the inconsistencies in behavioral and psychological acculturation among CIMs may be due to the challenges of reconciling behavioral and psychological aspects of acculturation among mothers during the preschool period of their children's development. Gender roles, childrearing demands, and contextual factors may jointly contribute to these findings, which may not generalize to Chinese and Korean immigrants with other characteristics (e.g., gender, generation, SES).

Limitations and Future Directions

Several limitations of the present study should be noted. First, the lack of variability in the generation status and SES levels of these CIMs and KIMs, and the non-random sampling approach used in the current study limited the range of acculturation styles revealed in the sample. In addition, generalization of our results to CIMs and KIMs with different demographic characteristics and residing in other regions of the United States should be made cautiously. Our recruitment locations (e.g., Chinese and Korean organizations) and approaches (e.g., snowballing) may have resulted in the over-sampling of immigrants who possessed or sought strong cultural ties (Bornstein, Jager, & Putnick, 2013). Further, although we intentionally focused on the experiences of first-generation immigrants, this may likely have resulted in the small size of the Psychologically-Behaviorally Assimilated Chinese profile, which impacted the comparisons between the different Chinese acculturation profiles. Thus, future research should use probability sampling to recruit more diverse samples of mothers.

Second, we used a cross-sectional design, which precluded our ability to ascertain the temporal precedence of acculturation on psychological adjustment. Fluctuations in mothers' behavioral and psychological acculturation may vary over time and across cultural contexts (Ward & Geeraert, 2016). Although we suggested that acculturation styles may lead to certain psychological outcomes, it is plausible that mothers' psychological functioning may facilitate or hinder their psychological and behavioral interactions with the host culture. This issue was further confounded by the fact that only maternal reports were used. Future studies utilizing multiple data sources and a longitudinal design can better determine causal associations between these constructs.

Third, consistent with previous research (e.g., Choi et al., 2016; Salas-Wright et al. 2015), the profiles were labeled by comparing mothers in the profiles to each other and to the sample mean on the acculturation measures. For example, the Behaviorally-Integrated, Psychologically-Undifferentiated profile was labeled as undifferentiated relative to other profiles in the sample; however, their scores may not be very low in absolute terms (sum score 63.51, item average 2.54 on a 4-point scale). Future research is needed to validate the retained profile solution.

Conclusions

Despite these limitations, the person-centered approach revealed several important findings. First, two acculturation styles that were not previously outlined in Berry's (1980) model (i.e., the Psychologically-Assimilated/Behaviorally-Undifferentiated profile and the Psychologically-Undifferentiated/Behaviorally-Integrated profile among CIMs) were revealed. Second, the endorsement of different acculturation patterns across CIMs and KIMs in the same region highlighted the importance of examining the heterogeneity that exists within Asian sub-

groups. Third, our findings regarding the demographic characteristics associated with the different profiles provided additional sociocultural context for understanding the different acculturation styles. Fourth, our examination of the psychological adjustment correlates of various acculturation styles contributes to the literature on the implications of various acculturation styles for the well-being of immigrants. Finally, our findings can inform the work of mental health professionals regarding the complex acculturation patterns of CIMs and KIMs, as they attempt to balance their mainstream and heritage cultural orientations both psychologically and behaviorally. Service providers can develop programs to better facilitate acculturation patterns that meet the needs of immigrant mothers towards promoting their optimal adaptation.

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Table 1.
Fit Indexes for Profile Solutions in Chinese and Korean Samples

Profile Number	AIC	BIC	SSA-BIC	Entropy	LMR	BLRT
Chinese						
1	4673.85	4701.99	4676.63	-	-	-
2	4644.59	4690.31	4649.10	.72	.27	<.0001
3	4632.36	4695.68	4638.61	.73	.20	<.0001
4	4613.43	4694.33	4621.42	.79	.16	<.0001
5	4611.31	4709.80	4621.04	.74	.13	.33
Korean						
1	4330.28	4357.50	4332.14	-	-	-
2	4276.67	4320.91	4279.71	.85	.43	<.0001
3	4249.93	4311.18	4254.13	.86	.01	<.0001
4	4247.38	4325.65	4252.76	.77	.29	.23

Note. AIC: Akaike's Information Criterion; BIC: Bayesian Information Criterion; SSA-BIC: sample-size-adjusted Bayesian Information Criterion; LMR: Lo-Mendell-Rubin likelihood ratio test; BLRT: bootstrap likelihood ratio test.

Table 2

Mean Differences between Chinese Immigrant Mothers' Acculturation Profiles, Demographic Characteristics and Psychological Functioning

	Behaviorally-Undifferentiated Psychologically-Assimilated (Profile 1; <i>N</i> = 107)	Behaviorally-Marginalized Psychologically-Separated (Profile 2; <i>N</i> = 80)	Behaviorally-Psychologically-Assimilated (Profile 3; <i>N</i> = 13)	Behaviorally-Integrated Psychologically Undifferentiated (Profile 4; <i>N</i> = 40)	Sample Mean (<i>N</i> = 240)	Group Differences
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>F</i> (Partial η^2)
Behavioral-Heritage	41.68 (4.18)	39.55 (6.48)	28.38 (4.25) ^L	45.38 (3.89) ^H	40.87 (6.15)	28.71*** (.30)
Behavioral-American	32.06 (8.03)	28.79 (5.70) ^L	40.15 (6.31) ^H	42.38 (3.00) ^H	33.33 (6.85)	65.76*** (.50)
Psychological-Heritage	61.44 (4.54) ^L	65.31 (4.49) ^H	55.62 (5.09) ^L	63.51 (6.87)	62.76 (5.53)	11.76*** (.15)
Psychological-American	68.79 (3.97) ^H	62.67 (4.22) ^L	70.70 (3.52) ^H	65.78 (4.32)	66.35 (4.98)	31.03*** (.32)
Age at Immigration (years)	28.34 (5.30)	27.78 (5.12)	13.91 (6.90) ^L	27.66 (5.40)	27.41 (6.04)	20.09*** (.23)
Length of Residence (years)	9.90 (4.99)	9.72 (5.19)	22.98 (8.01) ^H	11.07 (5.16)	10.56 (5.83)	18.17*** (.21)
Perceived Co-ethnic Concentration	2.06 (0.62)	1.84 (0.42) ^L	2.13 (0.35)	2.32 (0.80) ^H	2.04 (0.61)	3.57* (.05)
Depressive Symptoms	9.47 (7.30)	9.50 (6.57)	5.85 (2.15)	6.20 (3.84) ^L	8.74 (6.52)	3.03* (.04)
Psychological Well-Being	94.90 (10.99)	89.46 (9.52) ^L	99.62 (9.47)	99.93 (11.70) ^H	94.17 (11.19)	7.91*** (.11)

Note. *df* = (3, 236), * *p* < .05, *** *p* < .001, ^L Significantly lower than the sample mean, ^H Significantly higher than the sample mean.

Table 3

Mean Differences between Chinese Immigrant Mothers' Acculturation Profiles, Demographic Characteristics and Psychological Functioning

	Behaviorally- Psychologically Separated (Profile 1; N = 174)	Behaviorally- Psychologically Assimilated (Profile 2; N = 25)	Behaviorally- Psychologically Integrated (Profile 3; N = 23)	Sample Mean (N = 222)	Group Differences
	M (SD)	M (SD)	M (SD)	M (SD)	F (Partial η^2)
Behavioral- Heritage	43.53 (5.14)	33.16 (5.69) ^L	48.30 (4.36) ^H	42.86 (6.34)	55.74*** (.36)
Behavioral- American	28.69 (5.11) ^L	44.52 (3.43) ^H	44.00 (3.78) ^H	32.06 (8.03)	179.05*** (.64)
Psychological- Heritage	66.10 (5.59) ^H	54.77 (4.83) ^L	66.22 (6.88)	64.87 (6.15)	20.95*** (.17)
Psychological- American	66.31 (4.53)	68.33 (4.91)	69.61 (4.73) ^H	66.88 (4.71)	7.84*** (.07)
Age at Immigration (years)	26.32 (5.80) ^H	14.15 (11.62) ^L	19.23 (10.14) ^L	24.18 (8.33)	35.19*** (.26)
Length of Residence (years)	9.34 (5.67) ^L	23.26 (10.62) ^H	17.24 (10.16) ^H	11.74 (8.40)	46.99*** (.32)
Perceived Co-ethnic Concentration	2.16 (0.59)	1.82 (0.39) ^L	2.06 (0.24)	2.11 (0.56)	3.75* (.05)
Depressive Symptoms	10.20 (6.93)	6.04 (5.16) ^L	4.22 (6.10) ^L	9.07 (6.98)	10.73*** (.10)
Psychological Well- Being	88.20 (12.22) ^L	99.58 (9.22) ^H	99.52 (10.30) ^H	90.69 (12.55)	17.15*** (.15)

Note. $df = (2, 219)$, * $p < .05$, *** $p < .001$, ^L Significantly lower than the sample mean, ^H Significantly higher than the sample mean.

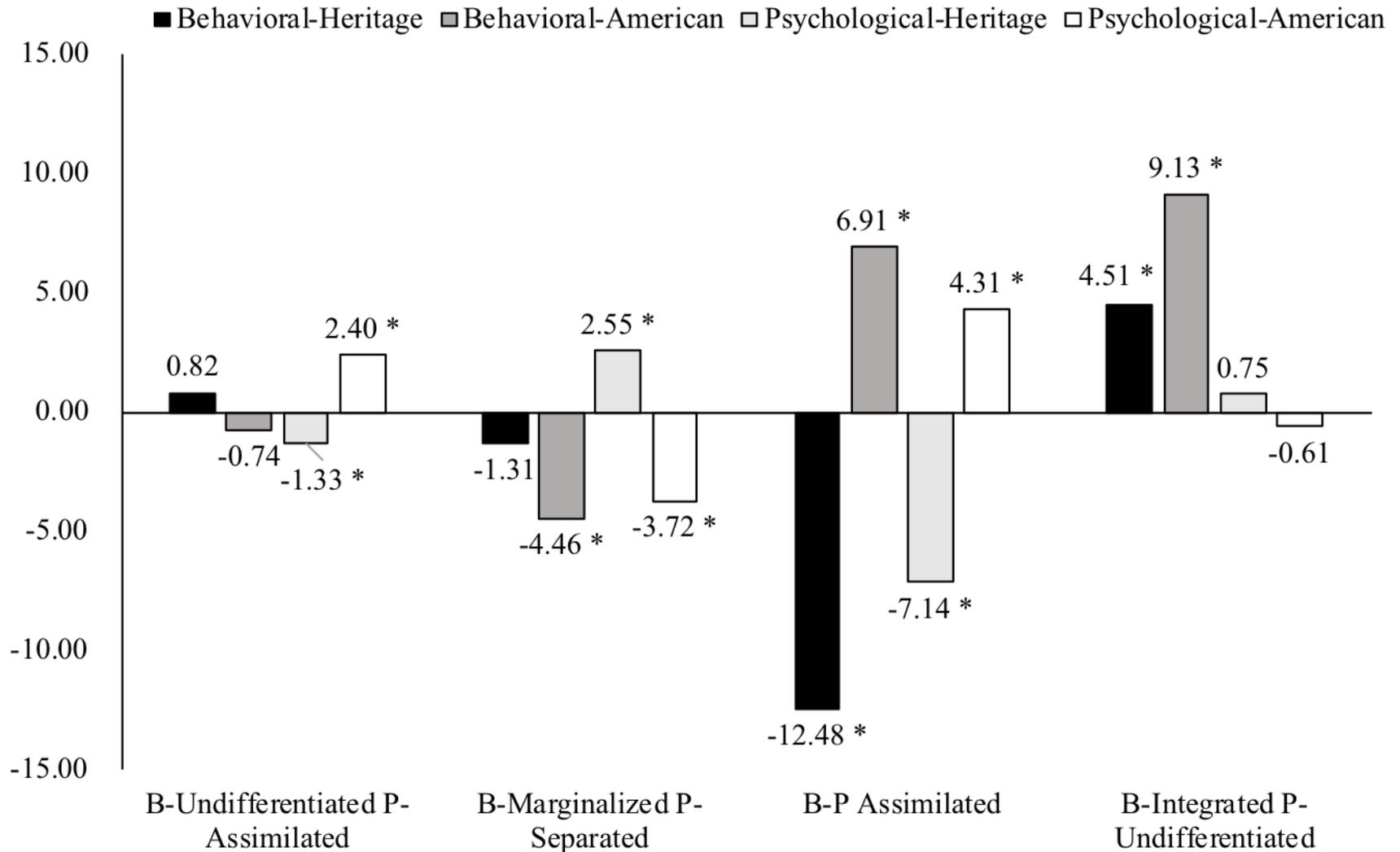


Figure 1. Four-Profile Solution of the Acculturation Profiles for Chinese Immigrant Mothers

Note. In the X-axis labels, the abbreviation “B-” refers to the behavioral component of acculturation, whereas the “P-” refers to the psychological component of acculturation. The * mark represents that the acculturation level of the profile is significantly different from the sample mean.

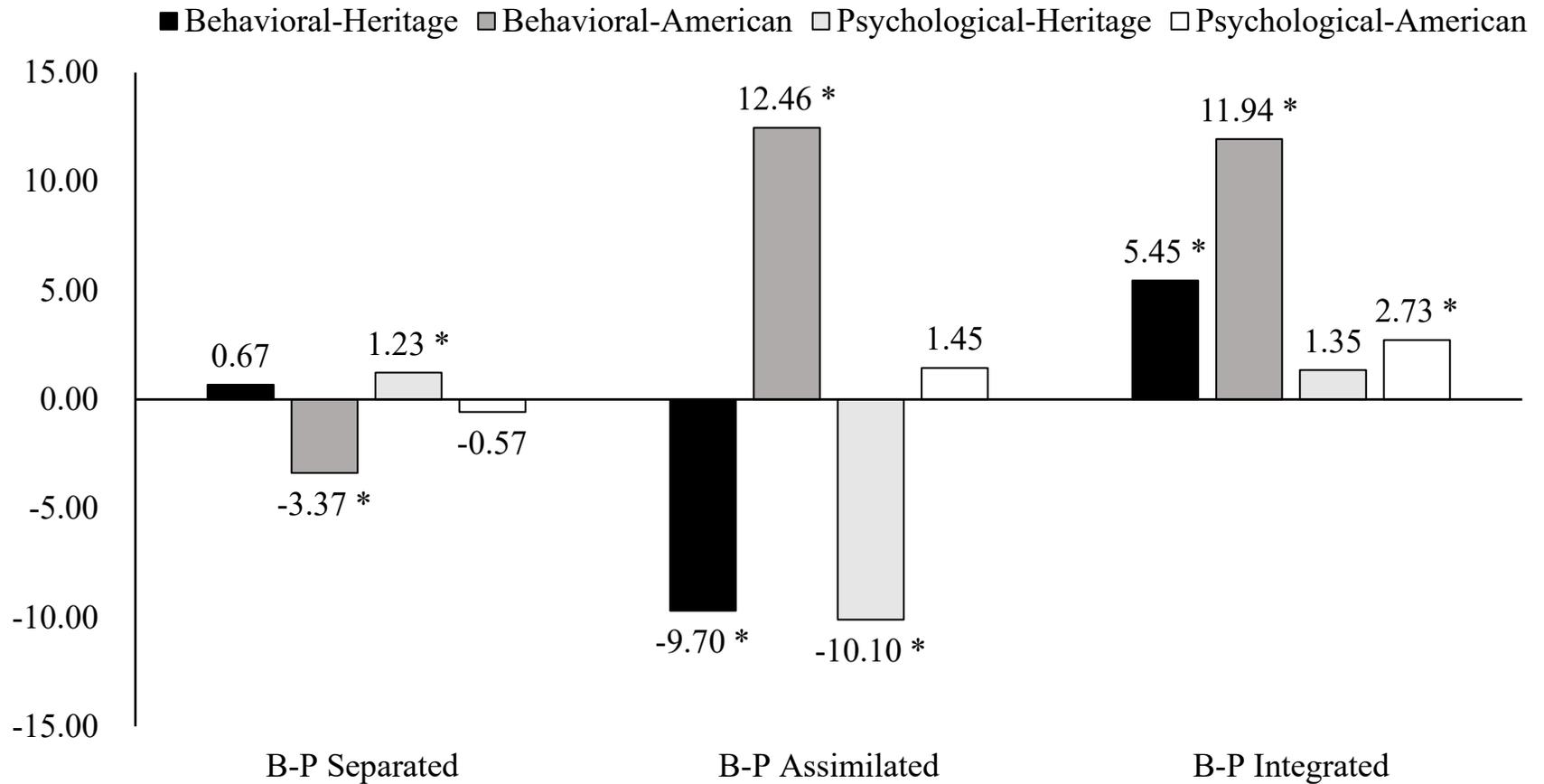


Figure 2. Three-Profile Solution of the Acculturation Profiles for Korean Immigrant Mothers

Note. In the X-axis labels, the abbreviation “B-” refers to the behavioral component of acculturation, whereas the “P-” refers to the psychological component of acculturation. The * mark represents that the acculturation level of the profile is significantly different from the sample mean.