



ORIGINAL ARTICLE

Resilience mediated the association between acculturation and psychological growth in college students from Hong Kong to Guangzhou, China

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Abstract

Background: The number of Hong Kong citizens living in mainland China is increasing. The process of acculturation may create opportunities for psychological growth.

Aims: This study aimed at examining whether resilience mediated the effects of acculturation on psychological growth in college students from Hong Kong to Guangzhou.

Method: In this cross-sectional survey, 164 college students in Guangzhou who were Hong Kong permanent residents (female: 46%, age: 21.09 ± 1.50) joined the study.

Results: The integration group reported more psychological growth than the assimilation, separation, and marginalization groups. Resilience partially mediated the effect of integration on psychological growth and fully mediated the effect of marginalization on psychological growth.

Conclusions: Resilience represents one of the mechanisms to explain beneficial effects of integration on psychological growth in college students from Hong Kong to Guangzhou. Theoretical considerations to rethink the acculturation model, implications for developing intervention programs, and recommendations for future research are discussed.

Keywords

Acculturation, ethnic identity, resilience, growth, Chinese

History

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Introduction

Acculturation, a process of adaptation when an individual moves to a new country (Schwartz & Zamboanga, 2008), may create the opportunity for psychological growth although many studies have focused on the negative outcomes such as stress (Demes & Geeraert, 2015). Such a paradigm shift from a psychopathological approach to a resilience-based framework has been documented in immigrant studies; for example, studies among Chinese students in Hong Kong and Australia (Pan, 2011, 2015). Accumulating evidence has supported the protective role of resilience in decreasing depression (Aroian & Norris, 2000; Miller & Chandler, 2002; Yu et al., 2014) and enhancing psychological well-being (Christopher, 2000) in immigrants. Factors including self-esteem, optimism, spiritual coping, and orientation to the host culture have been reported to contribute to immigrants' resilience (Kallampally et al., 2008; Lee et al., 2008; Nguyen et al., 2015). From a layman's perspective, more exposure to a new culture may result in higher psychological growth, whereas Berry's acculturation model (Berry, 1997) predicts that those who maintain the heritage culture and endorse the host culture will report more

psychological growth than other types (Berry, 1997). Moreover, it is not known whether resilience can explain how acculturation impacts on psychological growth. Guided by the framework of Berry's acculturation model, the present study examined psychological growth and its determinants in a sample of college students moving from Hong Kong to Guangzhou.

Hong Kong stands for a distinct culture from that of mainland China despite the fact that they share racial characteristics. Over 100 years of colonial history (which ended in 1997) makes Hong Kong more westernized than Communist China. A previous study to compare Chinese immigrants with different residency durations in North America showed that new immigrants' personality profiles were close to those found in Hong Kong, whereas old immigrants' profiles resembled those of North Americans, suggesting that Hong Kong represents a middle culture between that of mainland China and that of North America (McCrae et al., 1998). Since the reunification of Hong Kong with the mainland in 1997, more and more Hong Kong citizens have been traveling and working across borders. According to a survey conducted in July to September 2007, 500,700 Hong Kong residents had resided or stayed substantially in the mainland (Census & Statistics Department, 2008). As of October 2014, there were over 15,000 Hong Kong students studying at universities in mainland China as

undergraduates or postgraduates (Education Bureau, 2015). Because Guangzhou is near Hong Kong, universities located in Guangzhou are the most popular choices among Hong Kong students. Existing sojourn literature has mainly focused on moving from an undeveloped or developing country to a developed country (Lekan, 2009). The inverse direction, moving from a prosperous area to a less prosperous one, has not been given much attention. Previous acculturation studies have not focused on the cultural experiences of one ethnic group living in two contexts where they are still part of the ethnic majority as necessarily unique cultural experiences. Previous acculturation studies in sojourners moving from a relatively less prosperous area and a different ethnic background may not be applied to this population who move from Hong Kong to mainland China.

Acculturation studies have been dominated by the debate between two approaches. The traditional unidimensional model assumes that heritage and host culture identifications compete with each other, and they have a strong negative association. There is a single continuum of cultural identities ranging from exclusively heritage culture to exclusively host culture over the course of adaptation (Gordan, 1964). When individuals adopt the behaviors and norms of the new society, they give up those of their culture of origin. By contrast, the bidimensional model posits that the two identifications are relatively independent, or sometimes have positive correlation. Acculturating individuals can maintain the identity of their culture of origin while learning the new values and behaviors of the host culture (Ryder et al., 2000). This bidimensional model has been widely adopted in acculturation research.

Inspired by the bidimensional approach to acculturation, John Berry proposed an acculturation framework with four strategies according to the two dimensions of cultural identity (Berry, 1997). Integration refers to maintaining the heritage culture and acquiring the new culture; assimilation involves giving up the heritage culture and endorsing the new culture; separation involves the retention of the heritage culture but the rejection of the new culture; and marginalization describes discarding the new culture and relinquishing the heritage culture. Research findings are not consistent regarding the role of sociodemographic characteristics on acculturation strategies. For example, there were no significant differences in demographic characteristics among people with different acculturation strategies, except that one study reported that males reported higher marginalization than females (Kosic et al., 2004), while another study found that the separation strategy was more common in females than males and middle adolescents compared with late adolescents (Cox et al., 2010). Previous studies have investigated differences among the four acculturation strategies in various adaptation indicators including language, food, and social preference (Zane & Mak, 2003), perceived ethnic discrimination (Phinney et al., 1998), attitude (Dona & Berry, 1994), value (Dona & Berry, 1994), stress (Sonderegger & Barrett, 2004), anxiety (Rogler et al., 1991), self-esteem (Giang & Wittig, 2006), and life satisfaction (Brown et al., 2013). The majority of research findings support the bidimensional model that the integration group showed the most favorable outcomes (e.g. better well-being, lower acculturative stress), followed by the

assimilation and separation groups, and that the marginalization group showed the worst outcomes (Berry, 1997). Other studies provided additional evidence that the integration group showed higher self-esteem and subjective-wellbeing than the other three groups (Pham & Harris, 2001; Zheng et al., 2004); the integration and assimilation groups reported fewer depressive and somatic symptoms (Shim et al., 2014) and more out-group contact than the other two groups (Kurman et al., 2005), and the marginalization group showed lower personal and collective self-esteem than the other three groups (Giang & Wittig, 2006). A recent meta-analysis showed that integration is the most beneficial acculturation strategy for mental health (Yoon et al., 2013). However, there are mixed findings as a review of acculturation psychology suggests that integration is not the most adaptive strategy (Rudmin, 2003). It is not known whether different acculturation strategies are associated with positive adaptation indicators such as psychological growth and resilience among college students from Hong Kong living in mainland China.

Psychological growth, positive experiences perceived by individuals after going through challenges (Joseph & Linley, 2006), has been given little attention in the sojourn literature. This term has been used interchangeably with benefit-finding, posttraumatic growth, stress-related growth, flourishing, thriving, transformational coping, and positive adaptation. Psychological growth emphasizes the process of transformation that occurs as a result of the struggle with trauma and challenge (Cryder et al., 2006). Conceptually, psychological growth embraces positive connection with others, new possibilities, personal strength, capacity to endure, meaning of life, spiritual change, modified priorities, and appreciation for life. These experiences have been widely reported following stressful and traumatic events including bereavement, disasters, life-threatening diseases, sexual abuse, rape, and wars and conflicts (Linley & Joseph, 2004). As a critical transition in a life journey, moving to a new society involving dealing with various hardships and struggles may also bring a positive experience for psychological growth. Though acculturation provides an ideal context for experiencing psychological growth, there is a knowledge gap about whether different acculturation strategies will predict psychological growth among sojourners.

Resilience refers to the ability to cope with stressful events successfully (Tugade & Fredrickson, 2004). This concept has been studied in various adverse contexts including economic hardships, disasters, and chronic illness (Richardson, 2002; Wagnild, 2009). In acculturation studies, evidence shows that resilience was associated with self-esteem and optimism (Lee et al., 2008), and resilient individuals reported fewer depressive symptoms (Aroian & Norris, 2000). A recent study based on the acculturation model found that bilingual and primarily English-speaking Mexican Americans reported higher levels of resilience than their Spanish-speaking counterparts (Marsiglia et al., 2013). Language speaking is not an accurate indicator for acculturation strategies, so the relationship between acculturation and resilience is not confirmed. Though resilience is shown to be a protective factor for psychological growth in the aftermath of traumatic events (Bensimon, 2012; Chan et al., 2006), it is not clear whether

resilience might be an additional explanation for psychological growth in the context of the sojourn experience. In addition, previous studies in various contexts and populations have provided abundant evidence about the role of resilience as a mediator to transmit the impact of determinants (e.g. life events, stress, personal and interpersonal resources) on psychological outcomes (e.g. symptoms, functioning, mental health, life satisfaction) (Bernabé & Botia, 2016; Cohn et al., 2009; Li et al., 2012; Pietrzak et al., 2010; Rossi et al., 2007). Resilient sojourners may possess positive appraisal, optimistic outlook, and effective coping, which may mediate the relationship between the acculturation strategy and psychological growth. The role of resilience as a cognitive mediator might offer one of the explanations for the effects of acculturation strategies. It would be interesting to examine whether resilience can operate as one of the paths from effective strategy to psychological growth in the sojourner population.

The present study focused on a sample of college students who moved from Hong Kong to mainland China. We hypothesized that (1) individuals in the integration group would report the highest level of psychological growth, followed by those in the assimilation and separation groups, and those in the marginalization group would report the lowest level; and (2) resilience would mediate the association between acculturation strategies and psychological growth (the hypothesized mediation model is shown in Figure 1).

Method

Participants and data collection

A convenience sample of 164 participants joined this cross-sectional study. Inclusion criteria were as follows: (1) Hong Kong permanent residents, and (2) college students studying in Guangzhou. These college students lived in Guangzhou rather than in Hong Kong for educational reasons. Participants were recruited through yearly gatherings specifically organized for college students from Hong Kong by the Student Affairs Office in Sun Yat-sen University and Jinan University, two major universities in Guangdong Province that admit students from Hong Kong. Participants provided informed consent and completed structured questionnaires in classrooms. No incentive was provided. Research assistants were present to answer the questions raised by participants. Ethics approval was obtained from Sun Yat-sen University.

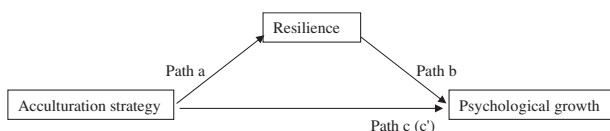


Figure 1. The hypothesized mediation model on the role of resilience to mediate the association between acculturation strategies and psychological growth. Notes: Path a: The effect of each acculturation strategy in predicting resilience. Path b: The effect of resilience in predicting psychological growth. Path c: The effect of each acculturation strategy in predicting psychological growth. Path c': The effect of each acculturation strategy in predicting psychological growth after controlling for resilience.

Measures

Acculturation

The ethnic identity scale (EIS) was used to assess acculturation (Valk & Karu, 2001). The EIS was shown to be reliable (Cronbach's $\alpha = 0.85$) and valid (positively correlated with in-group attitudes and negatively correlated with out-group attitudes) to measure ethnic identity (Valk & Karu, 2001). Participants indicated their agreement on a 5-point Likert-type scale (0 = strongly disagree, 4 = strongly agree). A total of 10 items that could be used to describe a specific ethnic group were selected for the study purpose. These aspects covered having feelings of pride, cherishing values, respecting traditions, having an interest in history, and having a connection with people in the same ethnic group. Other items that involve general attitudes about ethnic identity (e.g. "Ethnicity should not play any role in evaluating a person", "spouses/partners should belong to the same ethnic group", "I like to get to know people from other ethnic groups") were not used in the present study. Participants rated each item for their identity relevant to "Hong Kong" and "mainland China", respectively. For example, "I am proud of my ethnic group membership as a Hong Kong person" and "I am proud of my ethnic group membership as a mainland Chinese person". In this study, Cronbach's alpha values were 0.85 and 0.91 for the versions of Hong Kong identity and mainland identity, respectively. Parallel items for ethnic identity with Hong Kong and ethnic identity with mainland China were summed separately. Hong Kong identity and mainland identity did not show significant correlation in the present study ($r = -0.03$, $p = 0.71$). To derive four acculturation strategies according to Berry's model, Hong Kong identity, and mainland identity were both subjected to mean splits into the high group and the low group. The dichotomized groups were combined to form four acculturation strategies: integration (high in both Hong Kong identity and mainland identity), assimilation (low in Hong Kong identity but high in mainland identity), separation (high in Hong Kong identity but low in mainland identity), and marginalization (low in both Hong Kong identity and mainland identity). This post-hoc analysis method to categorize participants into four acculturation strategies has been used in previous acculturation studies (Obasi & Leong, 2009; Souiden & Ladhari, 2011).

Resilience

Using the Connor–Davidson Resilience Scale (CD-RISC) (Connor & Davidson, 2003), participants rated their agreement on a 5-point Likert scale (0 = not true at all to 4 = true nearly all the time) to 25 items such as "I am able to adapt to change" and "I tend to bounce back after illness or hardship". Higher scores indicate higher resilience. This scale has good reliability (Cronbach's $\alpha = 0.89$), convergent validity, and discriminant validity in an American sample (Connor & Davidson, 2003). The Chinese version showed good psychometric properties in both adults (Yu & Zhang, 2007) and adolescents (Yu et al., 2011). This measure has been used in previous studies among Chinese immigrants in Hong Kong (Yu et al., 2014) and Vietnamese immigrants in

Canada (Nguyen et al., 2015). Cronbach's alpha was 0.93 in this study.

Psychological growth

Psychological growth was measured using the 21-item Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996), the most commonly used measure for psychological growth. Previous studies using this measure showed good psychometric properties (e.g. Cronbach's $\alpha = 0.90$, test-retest reliability = 0.71, more perceived growth reported by cancer survivors compared with those of healthy controls) (Calhoun et al., 2000; Cordova et al., 2001; Zebrack et al., 2015). It has been used in immigrant and refugee samples to measure their psychological growth (Changrani et al., 2008; Hussain & Bhushan, 2011; Kroo & Nagy, 2011). This scale assesses positive growth-related changes experienced by individuals, such as "My priorities about what is important in life" and "I accept needing others". Compared with the Ryff scales of psychological well-being (Ryff, 1989), the Posttraumatic Growth Inventory was specifically designed to measure psychological growth and the length was briefer to minimize the responding burden in the survey. Items are rated on a 6-point Likert scale, ranging from 0 (not at all) to 5 (a very great degree). Higher scores indicate more psychological growth. Cronbach's alpha was 0.96 in the present study.

Participants also provided demographic identifiers, including gender, age, education level, and duration of residence in mainland China.

Analysis of data

We tested the mediation effect of resilience in the association between each acculturation strategy and psychological growth, following the procedure recommended by Frazier et al. (2004). Specifically, the criteria are (1) a significant relationship between the predictor of an acculturation strategy and outcome of psychological growth (Path c), (2) a significant relationship between the predictor of an acculturation strategy and mediator of resilience (Path a), (3) a significant relationship between the mediator of resilience and outcome of psychological growth (Path b), and (4) the strength of the relationship between the predictor of acculturation strategy and outcome of psychological growth (Path c') is reduced when the mediator of resilience is included in the model (Frazier et al., 2004). If the relationship between the predictor and the outcome is smaller when the mediator is included in the model than when the mediator is not included, the result suggests a partial mediation. If the relationship between the predictor and outcome is not significant after controlling for the mediator, the result indicates a complete mediation. Chi-square tests for categorical variables and ANOVA for continuous variables were conducted to examine differences in demographic characteristics, resilience, and psychological growth among the four groups. Bivariate associations among the variables were indicated using Pearson correlations. Linear regression models were used to test the effect of each acculturation strategy in predicting psychological growth after controlling for demographic characteristics. SPSS 17.0 for Windows (SPSS, Chicago, IL,

USA) was used for data analysis, and $p < 0.05$ was considered statistically significant.

Results

Participants' characteristics are shown in Table 1. Among 164 participants, 75 (46.0%) were female. Their age was 21.09 (SD = 1.50). Most participants were sophomore students or above. The average duration of residing in mainland China was 67.62 months (SD = 64.18). There were no significant differences among the four acculturation strategies in gender, age, education, and months of residing in mainland China (Table 1).

There was significant difference among acculturation strategies in resilience and psychological growth ($p < 0.05$, Table 1). Multiple comparisons found the integration group reported significantly higher scores of resilience than the assimilation and marginalization groups ($p < 0.05$). The separation group also reported higher levels of resilience than the marginalization group ($p < 0.05$). The integration group reported significantly more psychological growth than the other three groups ($p < 0.05$). Though there was no significant difference among the other three groups, it is nevertheless worth pointing out that the assimilation group reported more psychological growth than the other two groups. Correlation analysis showed that resilience was positively associated with psychological growth ($r = 0.22$, $p < 0.01$).

After controlling for gender, age, and months of residing in mainland China, the integration strategy significantly contributed to the variance in psychological growth ($\beta = 0.27$, $R^2 = 0.07$, $p < 0.01$, Model 1, Table 2; Path c was significant, Step 1 was met). After controlling for the socio-demographic variables above, resilience was significant in predicting psychological growth ($\beta = 0.21$, $R^2 = 0.01$, $p = 0.01$, Model 1, Table 2; Path a was significant, Step 2 was met). When resilience entered the regression model simultaneously with integration, resilience was significant in predicting psychological growth ($\beta = 0.24$, $R^2 = 0.10$, $p < 0.01$, Model 1, Table 2; Path b was significant, Step 3 was met). Path c' representing the association between integration and psychological growth after controlling for resilience was significant ($\beta = 0.20$, $p < 0.05$, Model 1, Table 2, Step 3) but smaller than Path c, indicating that resilience partially mediated the effect of the integration strategy on psychological growth. The effect of assimilation was not significant in predicting psychological growth ($\beta = -0.03$, $R^2 = 0.01$, $p > 0.05$, Model 2, Table 2; Path c was not significant, Step 1 was not met), and neither was separation ($\beta = -0.11$, $R^2 = 0.004$, $p > 0.05$, Model 3, Table 2; Path c was not significant, Step 1 was not met). Lastly, marginalization ($\beta = -0.17$, $R^2 = 0.02$, $p < 0.05$, Model 4, Table 2; Path c was significant, Step 1 was met) and resilience ($\beta = -0.28$, $R^2 = 0.05$, $p < 0.01$, Model 4, Table 2; Path a was significant, Step 2 was met) were significant in predicting psychological growth. After we regressed psychological growth on resilience ($\beta = 0.26$, $R^2 = 0.07$, $p < 0.01$, Model 4, Table 2; Path b was significant, Step 3 was met), marginalization was not significant in predicting psychological growth ($\beta = -0.10$, $p > 0.05$, Model 4, Table 2; Path c' was not significant) after controlling for socio-demographic

Table 1. Participants' demographic characteristics and study variables.

	(N = 164) n (%) or mean \pm SD (range)	Acculturation strategies				<i>p</i>
		Integration (<i>n</i> = 46) <i>n</i> (%) or mean \pm SD (range)	Assimilation (<i>n</i> = 38) <i>n</i> (%) or mean \pm SD (range)	Separation (<i>n</i> = 34) <i>n</i> (%) or mean \pm SD (range)	Marginalization (<i>n</i> = 40) <i>n</i> (%) or mean \pm SD (range)	
Gender						0.50
Male	88 (54)	27 (58.7)	19 (50)	15 (44.1)	23 (59)	
Female	75 (46)	19 (41.3)	19 (50)	19 (55.9)	16 (41)	
Age	21.09 \pm 1.50 (18–25)	21.43 \pm 1.54 (19–25)	20.92 \pm 1.60 (18–24)	20.82 \pm 1.34 (18–24)	21.00 \pm 1.51 (18–24)	0.26
Education						0.57
Freshman	8 (5.0)	2 (4.4)	3 (7.9)	2 (6.1)	1 (2.6)	
Sophomore	41 (25.6)	9 (20.0)	12 (31.6)	9 (27.3)	11 (28.2)	
Junior	71 (44.4)	25 (55.6)	15 (39.5)	10 (30.3)	17 (43.6)	
Senior or postgraduate	40 (25.0)	9 (20.0)	8 (21.1)	12 (36.4)	10 (25.6)	
Months of residing in mainland China	67.62 \pm 64.18 (0–255)	76.09 \pm 68.79 (0–241)	84.71 \pm 74.74 (3–255)	54.71 \pm 61.02 (1–228)	53.92 \pm 47.17 (14–240)	0.09
Resilience	63.57 \pm 12.33 (33–100)	67.32 \pm 12.56 (34–94)	61.73 \pm 9.59 (41–84)	66.94 \pm 10.76 (47–100)	57.43 \pm 12.13 (33–89)	<0.001
Psychological growth	55.91 \pm 21.28 (1–105)	65.20 \pm 19.49 (5–102)	55.78 \pm 19.09 (11–90)	50.03 \pm 25.18 (7–105)	50.77 \pm 17.56 (1–87)	0.003

Table 2. Multiple regression models on acculturation strategies associated with psychological growth.

	β (SE)	<i>t</i>	<i>p</i>	Adjusted <i>R</i> ²
Model 1: integration to predict psychological growth				
Step 1 (Path c): Outcome = psychological growth				
Predictor = integration	0.27 (3.63)	3.40	0.001	0.07
Step 2 (Path a): Outcome = resilience				
Predictor = integration	0.21 (2.12)	2.52	0.01	0.01
Step 3 (Paths b and c'): Outcome = psychological growth				
Mediator = resilience (Path b)	0.24 (.15)	2.95	0.004	0.10
Predictor = integration	0.20 (3.71)	2.45	0.02	
Model 2: assimilation to predict psychological growth				
Step 1 (Path c): Outcome = psychological growth				
Predictor = assimilation	−0.03 (3.88)	−0.30	0.76	0.01
Model 3: separation to predict psychological growth				
Step 1 (Path c): Outcome = psychological growth				
Predictor = separation	−0.11 (4.44)	−1.36	0.18	0.004
Model 4: marginalization to predict psychological growth				
Step 1 (Path c): Outcome = psychological growth				
Predictor = marginalization	−0.17 (4.19)	−2.10	0.04	0.02
Step 2 (Path a): Outcome = resilience				
Predictor = marginalization	−0.28 (2.35)	−3.45	0.001	0.05
Step 3 (Paths b and c'): Outcome = psychological growth				
Mediator = resilience (Path b)	0.26 (0.15)	3.08	0.003	0.07
Predictor = marginalization	−0.10 (4.31)	−1.12	0.27	

Demographic characteristics including gender, age, education, and months of residing in mainland were controlled in all the models.

characteristics. This result indicates the complete mediation of resilience in the association between marginalization and psychological growth.

Discussion

The present cross-sectional study focuses on psychological growth of college students who moved from Hong Kong to mainland China, which is a new trend in Chinese sojourners. Guided by Berry's acculturation model, our results found that the integrationists reported higher levels of psychological growth compared to the assimilationists, the separationists, and the marginalizationists. Resilience operated as a mediator to transmit the partial effect of integration and the full effect of marginalization on psychological growth in this correlational study, which extends understanding about the acculturation process.

Our finding that the integration group reported higher levels of psychological growth compared to the other three

groups partially supports Berry's acculturation model. Integration has also been identified as a predictor of psychological well-being in some previous studies (Ward & Rana-Deuba, 1999; Zheng et al., 2004). College students from Hong Kong who adopt the integration strategy seem to embrace the opportunity to learn new behaviors and attitudes in relation to Chinese culture, and, in the meantime to maintain their attachment to their Hong Kong culture. Such an orientation might enable them to absorb the essences of both cultures, to engage in social activities of both sides, to maintain positive attitudes towards cultural differences, to accept diversity of the different contexts, to compromise appropriate expectations of each culture, to break down discriminative attitudes and cultural jealousy, and to maintain flexibility to cope with various hardships. This finding highlights the importance of the concept of both ethnic identities on their psychological growth. It is not clear whether this finding on the association between integration and psychological growth can be replicated among older

immigrants (e.g. workers). However, meta-analysis studies have shown that age does not vary the association between acculturation and psychological adjustment (Nguyen & Benet-Martínez, 2013), particularly positive mental health (Yoon et al., 2013).

It is interesting that assimilationists shared similar levels of psychological growth with separationists and marginalizationists in the present study, contrary to Berry's acculturation model. Lack of distinctiveness of the three strategies in psychological growth may result from our small sample size. The unique sojourn direction from a highly resourced area to a less one may also account for the observed results. Losing the Hong Kong identity and connection may weaken individuals' competence to handle hardships in a new environment, which results in fewer opportunities for positive experiences. Most important of all, the acculturation model was challenged by the conceptualization that the four strategies are unidimensional, with integration standing at one end of the dimension, and assimilation, separation, and marginalization at the other end (Van de Vijver et al., 1999). Our findings provide support for this criticism. More studies are needed to examine whether the absence of difference in psychological growth among the three strategies can be replicated. In addition to psychological growth, future studies should include broader outcomes including physiological, psychological, and social indicators, particularly examining the long-term effects on clinical variables.

In addition, this cross-sectional study provides evidence for the mediating role of resilience to transmit the effects of integration and marginalization on psychological growth. This indicates a possible mechanism for psychological growth in the acculturation process. Integrationists might present resilience characteristics including resourceful coping, strong commitment, clear sense of purpose, positive attitudes to view obstacles as challenges, broad social support, and effective emotional regulation, and these characteristics lead to psychological growth. In contrast, individuals in marginalization may resist affiliation with any culture (Berry, 2005), witnessing the rejection of the host culture and the loss of the heritage network. With the deflation in social support and the dominance of hostility (Cox et al., 2010), these isolated individuals are short of protective factors that may facilitate resilience to integrating into the new environment. Beyond existing understanding about the beneficial effects of resilience in promoting positive human development across the life span in various challenging contexts (Lerner, 2006), our findings shed light on the mediating role of resilience in the acculturation context. Designing resilience-oriented interventions (e.g. building self-efficacy, setting up feasible goals, regulating emotions, using positive thinking) would be effective to promote the psychological growth of sojourners, given that such interventions have been shown to be effective in promoting adaptation outcomes in immigrants (Yu et al., 2014). As resilience partially mediated the effects on psychological growth in our study, future studies need to investigate other paths to elaborate the way that integration impacts psychological growth.

Our study has a few limitations. First, the college student sample excludes individuals with diverse socioeconomic backgrounds such as workers. The convenience sampling

procedure also limits generalization of the findings. Second, the small sample size in the present study may hinder us in testing the significant difference among the assimilation, separation, and marginalization groups. Third, mean-split technique for dichotomization of the two dimensions measured by the EIS to derive the four acculturation strategies may yield misleading results (MacCallum et al., 2002). Instead, other studies employ continuous measures of the four acculturation orientations (Pham & Harris, 2001). Fourth, we used the post-hoc analysis to divide participants into the four acculturation strategies, and future study might consider using purposive sampling to recruit an equivalent number of participants in each acculturation strategy with pre-determined criteria for different categories. Fifth, the use of self-report measures may be biased. Reports obtained from physiological measures (e.g. cortisol to represent stress levels) or observers might improve reporting accuracy. Sixth, the cross-sectional nature of the present study is unable to infer the causal effects of variables.

Conclusions

Using psychological growth as an outcome of successful adaptation, the present cross-sectional study provides partially empirical support for Berry's acculturation model. Integration is better than assimilation, separation, and marginalization to demonstrate more psychological growth, but the other three did not show distinctions as assumed. Our findings also highlight resilience as a mediator to transmitting the effects of integration and marginalization on psychological growth when college students adjust to a new culture in this correlational study. Developing interventions promoting resilience components might be helpful for college students from Hong Kong to adapt to the culture of mainland China.

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Declaration of interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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