Acculturation, Resilience and the Mental Health of Migrant Youth: A Cross-Country Comparative Study

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Highlights

- Acculturation orientation is predictive of the mental health of migrant youths.
- Resilience functions as a mediator in the association between acculturation and youths' mental health.
- The country context of migration is influential for the resilience and mental health of migrant youths.

Abstract

Objectives: Using data from an international collaborative research project on youth resilience in the context of migration, this study aims to investigate how different acculturation patterns (i.e., integration, assimilation, separation and marginalization) influence the mental health of migrant youth, and whether resilience might function as a mediator in the association between acculturation and mental health.

Study Design: A cross-sectional pilot study conducted in six countries employing a common survey questionnaire.

Methods: The study sample was 194 youths aged 10-17 years (Median=13.6) from six countries (Australia, Canada, China, New Zealand, South Africa, and United Kingdom), and included cross-border and internal migrants. Mental health and well-being was measured by the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS). Resilience was measured by the Child and Youth Resilience Measure-28 (CYRM-28). Acculturation was assessed using the Acculturation, Habits, and Interests Multicultural Scale for Adolescents (AHIMSA). Multivariate regression and path analysis were performed to examine the hypothesized mediation model.

Results: Resilience scores correlated strongly with mental health and well-being. Acculturation exerted no significant direct effects on the mental health of migrant youths. Nevertheless, compared to youths who were integration-oriented, assimilation-oriented youths tended to exhibit lower levels of resilience, resulting in poorer mental health. Compared to youths from other countries, migrant youths from China also reported lower levels of resilience, which led to poorer mental health outcome.

Conclusion: Acculturation plays a significant role in the mental health of migrant youth, with different acculturative orientations exhibiting different influences through the mediation effect of resilience. Fostering resilience and facilitating integration-oriented acculturation are recommended public health strategies for migrant youth.

Keywords: Acculturation; Mental Health; Migration; Resilience; Youth

Introduction

It has been well documented that youths in the context of migration face more challenges in maintaining mental health and well-being.[1-3] Acculturation is one distinct factor associated with migration that contributes to a variety of mental health outcomes of migrant youth.[4-7] According to Berry,[8] acculturation refers to the process by which individuals from one culture acquire the culture and code of behaviors of another culture through prolonged contact and interactions between two or more cultural groups and their members. Acculturation occurs not only in cross-country migration, but also within a country when people with certain sociocultural background relocate to areas of different cultural beliefs and behavioral patterns.[9,10] Building upon Berry's[11] bi-dimensional model which recognizes the coexistence of maintaining/rejecting one's original culture and adopting/rejecting the host culture, acculturation could have four possible patterns: 1) integration—maintaining the original culture while embracing the host culture; 2) assimilation—endorsing the host culture with little interest in maintaining the original culture; 3) separation—holding firmly to the original culture while rejecting to adopt the host culture; and 4) marginalization—keeping apart and becoming alienated from both the original and host culture. Among these four orientations, integration has been considered the most adaptive mode of acculturation and has been associated with positive mental health outcomes,[6] while marginalization is more likely to be associated with poorer mental health indicators.[12] Despite the numerous studies that have acknowledged the impact of acculturation on youth development,[13-15] it remains inconclusive as to which acculturation pattern tends to be associated with more positive or negative mental health outcomes. Even less known is the underlying mechanism as to how acculturation influences mental health.

Resilience is another powerful concept that has been widely applied and found to predict youth mental health. Understood as a process, resilience refers to positive adaptation despite exposure to significant risk and adversity.[16,17] Resilience involves characteristics and competencies possessed by children that allow them to maintain positive functioning and develop successfully even in adverse circumstances, as well as access to resources in their environment that provide support.[18,19] In the context of migration, resilience involves positive adaptation to the stressors and challenges encountered in a new environment through persistent coping.[20] Numerous studies have demonstrated positive mental health as one of the main resilience outcomes of youth.[21] Higher levels of resilience have been found to result in enhanced self-esteem,[22] lower depression and anxiety,[23] and better psychological well-being[24]. While examining the resilience of migrant youth, recent studies have also paid attention to the effect of acculturation. For example, Luna's[25] study with youths of Mexican origin in Oregon suggested that more assimilated individuals would exhibit increased levels of resilience. This implies a potential path that links acculturation to the mental health outcomes of migrant youth: resilience could be considered either as the outcome of cultural adaptation, or a factor in the process chain of acculturation, thus functioning as a mediator in the association between acculturation and the mental health of migrant youth. However, this mechanism has been rarely tested in the existing literature and warrants further examination in empirical studies.

Using data from an international collaborative research project on youth resilience, the present study set out to test the hypothesis that acculturation pattern influences the mental health of migrant youth through resilience. The study aimed to investigate how different acculturation patterns (i.e., integration, assimilation, separation and marginalization) influence the mental health of migrant youth both directly, and also indirectly through the mediating effect of resilience. A

secondary aim was to use cross-national data to explore how the context of migration and acculturation might make a difference in the association among acculturation, resilience and the mental health of migrant youth. The conceptual framework of the study is presented in Figure 1.

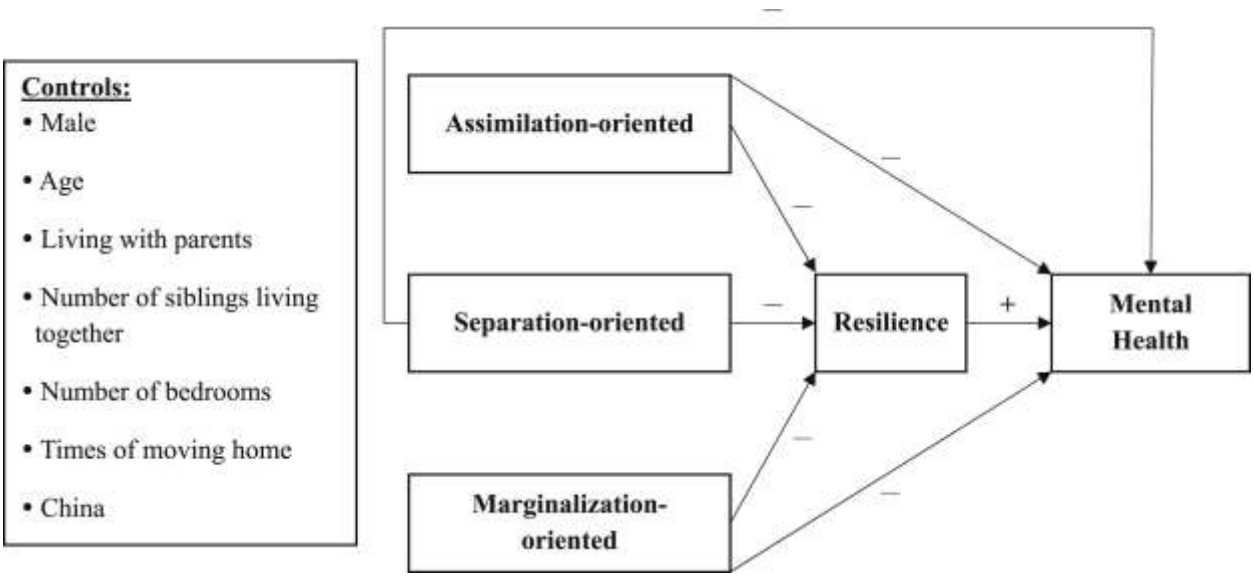

Fig. 1. Hypothesized model of acculturation, resilience, and youths' mental health. Note: Integration-oriented used as the reference group.

Methods

Participants and Procedure

Data came from a pilot study on the resilience of migrant youth conducted by an international collaborative team of researchers from six countries (Australia, Canada, China, New Zealand, South Africa, and the United Kingdom). A standard survey questionnaire was developed through several rounds of face-to-face and virtual team meetings at the preparatory stage, and was administered in each study site. Migrant youths were recruited through convenience sampling with the assistance of schools and community organizations, and a total of 194 participants (aged 10-17 years) from six countries completed the survey (25 from Australia, 21 from Canada, 77 from

China, 33 from New Zealand, 28 from South Africa, and 10 from the United Kingdom). The sample was derived from schools in China and the UK, from community sampling in South Africa, New Zealand and Australia, and from a migrant center in Canada. Data were collected in each country in 2015-2016, and the process of data collection in each site was supervised by the team member(s) from that country. The study was approved and monitored by the Research Ethics Committees of the authors' institutions in all six countries. Full descriptive statistics of the total sample and subsamples in each country are presented in Table 1.

Table1 Descriptive statistics of the study sample

Variables	Means/Percent (%)						
	Total	Australia	Canada	China	New Zealand	South Africa	UK
Male (%)	53.2	68.0	38.1	57.1	27.3	67.9	40.0
Age	13.88 (1.360)	13.28 (0.614)	14.05 (0.970)	13.23 (0.959)	15.25 (1.107)	13.77 (1.583)	15.70 (1.252)
Living with parents (%)	77.0	96.0	76.2	94.6	72.7	17.9	80.0
Number of siblings living with	1.58 (1.509)	1.72 (1.021)	2.20 (1.576)	1.23 (0.958)	1.48 (1.004)	2.00 (2.884)	1.80 (1.751)
Number of bedrooms	3.34 (2.035)	4.52 (2.502)	3.62 (0.973)	2.63 (0.830)	3.48 (0.834)	3.78 (4.200)	3.50 (0.972)
Times of moving home	1.48 (1.700)	0.76 (1.128)	3.80 (2.353)	1.13 (1.128)	1.12 (1.244)	2.15 (2.070)	0.80 (0.919)
Resilience	112.8 (15.92)	116.24 (10.026)	122.15 (14.241)	107.84 (17.359)	116.33 (16.628)	115.50 (15.706)	105.60 (6.275)
Acculturation orientation (%)							
-Assimilation-oriented	41.4	69.6	70.6	31.3	51.6	18.5	22.2
-Separation-oriented	2.9	0.0	0.0	1.5	6.5	7.4	0.0
-Integration-oriented	35.1	17.4	17.6	22.4	41.9	70.4	77.8
-Marginalization-oriented	20.7	13.0	11.8	44.8	0.0	3.7	0.0

Notes: Figures in parentheses are standard deviations for continuous variables.

Measures

Mental health was measured by the 14-item Warwick-Edinburgh Mental Well-Being Scale (WEMWBS).[26] Respondents were asked to describe to what extent each item about feelings and

thoughts applied to them over the past 2 weeks, such as "I've been feeling optimistic about the future". Each item was responded to on a 5-point scale ranging from "1=none of the time" to "5=all of the time". The Cronbach's alpha of the WEMWBS in this study was 0.898. The sum score of the 14 items was used in the study as an outcome variable.

Resilience was assessed by the 28-item Child and Youth Resilience Measure-28 (CYRM-28).[27] On a 5-point scale ranging from "1=not at all" to "5=a lot", participants were asked to describe to what extent each item applied to them, such as "I have people I look up to". The Cronbach's alpha for the CYRM-28 in this study was 0.904. The sum score of the 28 items was used in the study as an observed indicator to assess resilience.

Acculturation was identified and differentiated the respondents into four categories: assimilation-oriented, separation-oriented, integration-oriented and marginalization-oriented. This categorical variable was created and coded based on the Acculturation, Habits, and Interests Multicultural Scale for Adolescents (AHIMSA).[28] Respondents were asked to describe their identity towards each item, such as "I am most comfortable being with people from…". The response categories were, "The country I am living right now (i.e. Britain)" (indicating assimilation), "The country my family is from" (indicating separation), "Both" (indicating integration), and "Neither" (indicating marginalization). Note that in the survey with Chinese migrant youth, "country" in the response categories was replaced by "place", given that the internal migration in China is characterized by people moving from one place to another. These responses thus generated four scores according to the categories above: 1) assimilation score was represented by the total number of "The country I am living in right now" responses; 2) separation score was assessed by the total number of "The country my family is from" responses; 3) integration score was measured by the total number of "Both" responses; 4) marginalization score was rated by the

total number of "Neither" responses. Based on the above scoring, we defined youth whose assimilation score was the highest among these four scores as assimilation-oriented; whose separation score was the highest as separation-oriented; whose integration score was the highest as integration-oriented; and whose marginalization score was the highest as marginalization-oriented. In data analysis, the group of integration-oriented youth was used as the reference group.

Sociodemographic variables controlled in this study included gender (1=male), age (in years), whether or not living with both parents (1=yes), number of siblings living together, number of bedrooms, and times of moving home in the past five years. Another variable being controlled was the country or context of migration. Considering that internal (China) and international (other countries) migration could have created different contexts of adaptation and settlement, we created a country variable (1=China, 0=other countries) to test if differences would appear in the examined relationship patterns as a consequence of migration context.

Analytical Plan

The analytical plan included two steps. First, multivariate regression modeling (nested models) was performed using Stata 14[29] to preliminarily estimate the effects of acculturation on youth's mental health and resilience respectively. Second, based on the results of the regression models, path analysis was conducted using Mplus 7.0[30] to test the hypothesized model of mediation among acculturation, resilience, and the mental health of migrant youth. While testing the path model, we used multiple indices to assess the model fit, including: 1) the likelihood ratio test statistic (χ^2)—a non-significant χ^2 indicates the model's closer fit to the perfect fit; 2) the Comparative Fit Index (CFI)—values above 0.90 denote a good model fit; and 3) the Root Mean Square Error of Approximation (RMSEA)—values less than 0.05 indicate a good fit.[31]

Results

Multivariate Regression Modeling

Table 2 presented the results from multivariate regression models predicting youths' mental health. Model 1 was the baseline model with only control variables included. Among these predictors, gender showed significant effects on mental health, with male youth exhibiting better mental health than female youth (β=3.384, p<0.05). Model 2 was an additive model with resilience and acculturation variables incorporated. It suggested that, controlling for other variables, youths with higher resilience were significantly more likely to report better mental well-being (β=0.392, p<0.001). Compared to integration-oriented youth, assimilation-oriented, separation-oriented and marginalization-oriented youth did not show significant differences in their mental health status. Model 3 is a nested model of Model 2 which added the country factor. Youth from China and other countries did not differ significantly in their reports of mental well-being, while the effects of resilience and acculturation variables on mental health remained unchanged as in Model 2. The percentage of variance explained by the models (R^2) increased from 5.5% in Model 1 to 47.5% in Model 3.

Table 2 Multivariate regression models predicting youths' mental health

Variables	Model 1	Model 2	Model 3
Male	3.384*	2.994*	3.052*
	(1.492)	(1.416)	(1.431)
Age	-0.317	-0.768	-0.820
	(0.555)	(0.514)	(0.538)
Living with parents	-1.748	-2.176	-2.101
	(1.819)	(1.790)	(1.810)
Number of siblings live with	0.610	0.266	0.257
	(0.478)	(0.520)	(0.522)
Number of bedrooms	-0.008	-0.120	-0.169
	(0.355)	(0.460)	(0.483)
Times of moving home	0.108	0.291	0.267
	(0.415)	(0.431)	(0.438)
Resilience		0.392***	0.389***
		(0.047)	(0.048)
Acculturation *(reference: integration-oriented)*			
Assimilation-oriented		2.077	2.083
		(1.560)	(1.566)
Separation-oriented		-3.825	-3.700
		(4.106)	(4.137)
Marginalization-oriented		-0.062	0.201
		(1.980)	(2.126)
China			-0.639
			(1.836)
Constant	57.64***	20.07*	21.44*
	(8.431)	(8.957)	(9.810)
N	167	128	128
R^2	0.055	0.474	0.475

Notes: Figures in parentheses are standard errors

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 3 presented the results from multivariate regression models predicting youth's resilience. Still, Model 4 was the baseline model with control variables only. Gender, age and number of siblings live together exerted significant effects on resilience. Being male (β=8.604, p<0.01), at an older age (β=2.577, p<0.01), and living with more siblings (β=2.425, p<0.01) were all associated with higher levels of resilience. Model 5 was an additive model with acculturation patterns included. The results indicated that, compared to integration-oriented youth, assimilation-oriented youth (β=-6.305, p<0.05) and marginalization-oriented youth (β=-8.123, p<0.05) exhibited significantly lower levels of resilience, holding constant all other factors. Nevertheless, separation-oriented youth showed no significant differences from those integration-oriented youth

in terms of resilience. Model 6 was a nested model of Model 5 with the country factor being introduced. The effect of the assimilation-oriented acculturation pattern on youth mental health, as compared to integration-oriented, remained significant (β=-5.994, p<0.05), controlling for other variables. However, the previously significant effect of marginalization-oriented acculturation pattern on mental health became non-significant in this model. In addition, migrant youth from China exhibited significantly lower levels of resilience than youth from other countries (β=-8.138, p<0.05). The percentage of variance explained by the models (R^2) increased from 13.6% in Model 4 to 24.2% in Model 6.

Table 3 Multivariate regression models predicting youths' resilience

Variables	Model 4	Model 5	Model 6
Male	8.604**	8.570**	8.912**
	(2.620)	(2.721)	(2.678)
Age	2.577**	2.198*	1.395
	(0.967)	(0.998)	(1.041)
Living with parents	-3.060	-3.250	-2.138
	(3.330)	(3.585)	(3.556)
Number of siblings live with	2.425**	2.987**	2.733**
	(0.904)	(0.964)	(0.953)
Number of bedrooms	0.215	-0.548	-1.161
	(0.600)	(0.909)	(0.932)
Times of moving home	-0.005	-0.561	-0.853
	(0.794)	(0.852)	(0.847)
Acculturation *(reference: integration-oriented)*			
Assimilation-oriented		-6.305*	-5.994*
		(3.029)	(2.980)
Separation-oriented		5.724	7.065
		(8.244)	(8.122)
Marginalization-oriented		-8.123*	-4.547
		(3.842)	(4.081)
China			-8.138*
			(3.523)
Constant	70.27***	81.92***	96.93***
	(14.91)	(15.62)	(16.66)
N	146	132	132
R^2	0.136	0.209	0.242

Notes: Figures in parentheses are standard errors

* p < 0.05, ** p < 0.01, *** p < 0.001.

Overall, results from the multivariate regression models suggested that resilience presumably played a mediating role in the association between acculturation and youth's mental health. However, the multivariate regression analysis itself cannot test the model as a whole and estimate the relationships among all variables simultaneously. Therefore, based on the above results, we further performed path analysis via Mplus 7.0 to examine the mediating effects of resilience in the second step.

Path Analysis

The goodness-of-fit indices generated from the test of the structural model demonstrated satisfying results ($\chi^2 = 3.857$, $df = 3$, $p < 0.277$; CFI= .990; RMSEA= 0.043). A total of 42.4 percent of the variance in the mental health of youth was explained by this model. The standardized solution for the path model is presented in Figure 2. Bootstrapping method was used to test the significance of the indirect effects of major predictor variables in the model. The standardized direct, indirect and total effects were presented in Table 4.

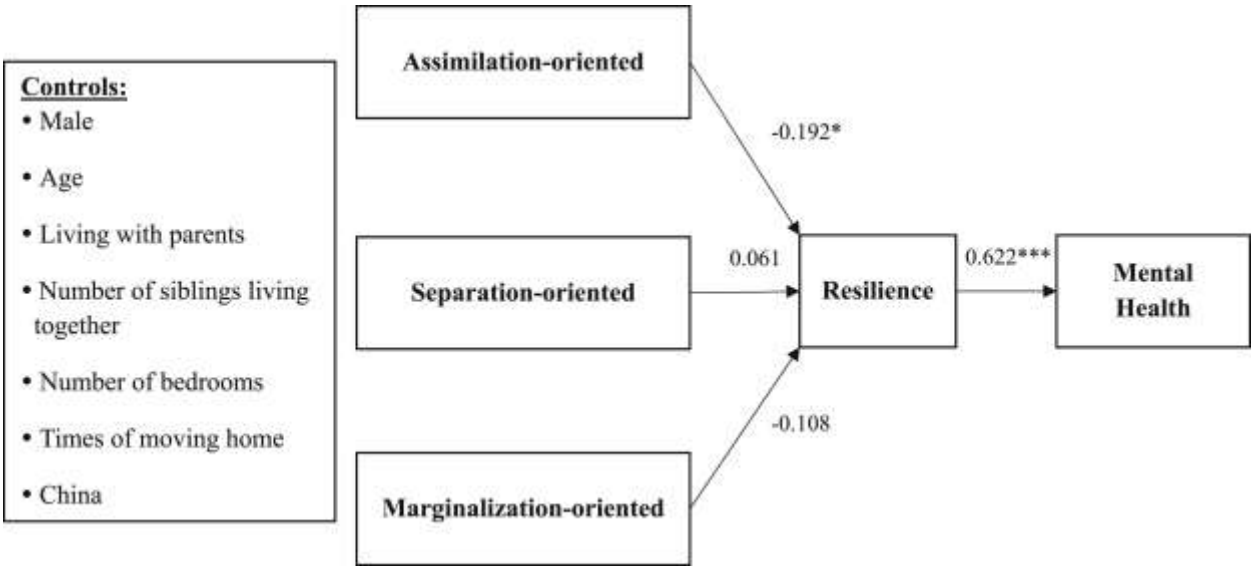

Fig. 2. Standardized solutions for the structural model of acculturation, resilience, and mental health. *$P < 0.05$, **$P < 0.01$, and ***$P < 0.001$.

Table 4 Standardized direct, indirect and total effects of major predictor variables on youths' mental health

Major predictor variables	Mental health		
	Direct	Indirect	Total
Assimilation-oriented	— —	-0.119*	-0.119
Separation-oriented	— —	0.038	0.038
Marginalization-oriented	— —	-0.067	-0.067
Male	0.085	0.134	0.219
China	-0.039	-0.151*	-0.190

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

As hypothesized, effects of the various acculturation orientations on youth mental health were mediated by the effect of resilience. Compared to those integration-oriented youths, assimilation-oriented youths exhibited significantly lower levels of resilience (β=-0.192, p<0.05), which, in turn, predicted worse mental well-being (β=0.622, p<0.001). However, neither separation-oriented (β=0.038, p>0.05) nor marginalization-oriented acculturation pattern (β=-0.067, p>0.05) demonstrated significant influences on youth mental health through this indirect pathway. In addition, the country context of migration also made a difference. Although living in China or other countries did not show significant direct effect on youth's mental health (β=-0.039, p>0.05), migrant youths from China, as compared to those from other countries, tended to have lower resilience level ((β=-0.242, p<0.05), which predicted poorer mental health (β=0.622, p<0.001). Moreover, to further test whether the country context might function as a moderator, we also conducted a multiple-group comparison to examine whether the relationships among acculturation, resilience and mental health would differ between the sample of youth from China and those from other countries. This additional analysis found no significant difference across the two groups.

Of the sociodemographic variables, gender showed no significant direct effect on youth's mental health (β=0.085, p>0.05), but being male was associated with higher resilience (β=0.216, p<0.01), which led to more positive mental health (β=0.622, p<0.001). Other control variables did

not show similar results.

Discussion

Migration is a global phenomenon in the 21st century with longer stay and family resettlement in the destination countries/regions being increasingly observed.[32] Consequently, the number of children and youths migrating with their parents is continuously growing. According to the United Nations,[33] one in every six migrants is under the age of 20. Similar figures are also reported in individual countries that have been popular destinations for migrants. As a critical indicator of integration of migrants to the host society, the mental health of migrant youth has been paid increasing attention by researchers, policy makers and service providers, all bearing a strong commitment to promoting the mental well-being of this population. The present study draws upon data from a pilot study conducted in six countries experiencing large waves of migration, and contributes to the literature by illustrating how cultural adaptation, one inevitable component associated with the process of migration, influences a resilient response to adversity and impacts on the mental health of migrant youth.

Results of the multivariate regression and path analysis clearly suggest that, although acculturation orientation did not affect mental well-being directly, there was evidence that acculturation contributed to the mental health of migrant youth through promoting resilience. Specifically, the study probes into the nuance of different acculturation orientations and investigates which acculturation pattern is more likely to be associated with better mental well-being. It is well acknowledged in the literature that the ability to retain one's original cultural identity and at the same time striving to integrate into the new host culture, that is, integration-orientated acculturation, is usually predictive of better mental health outcomes.[34] Therefore, in our

analysis, "integration-oriented" was used as the reference group while examining the effect of acculturation. The research findings indicate that, although not showing any direct effect on mental health, compared to those integration-oriented youths, assimilation-oriented youths tend to experience poorer mental health as a result of lower resilience predicted by their acculturation pattern. This echoes what has been documented in the literature that recognizes the advantage of integration, and also supports the hypothesis of the current study that resilience functions as a mediator to link the acculturation pattern of migrant youth to their mental health outcomes. The results convey a message that, endorsing the new host culture of the destination country/place could be more beneficial for the youth's mental health when it is accompanied by maintaining interest in the original culture (integration) rather than by abandoning the original cultural identity (assimilation). In other words, being able to balance one's original and new cultural identity is a strength for migrant youth and a pathway to higher resilience and positive mental health. Failure to detect any significant differences in mental health between youths who are integration-oriented in their acculturation pattern and youths who are separation- or marginalization-oriented is probably a consequence of the small sample size and the distribution of the acculturation variable, with only about 3% being separation-orientated.

Another major finding of the research is the reaffirmed importance of resilience in youth development. A large body of the literature has documented the positive association between resilience and various developmental outcomes of youth.[22,23,35] Children and youths with the ability to adapt positively in the face of adversity are able to perform better at school and experience less mental health difficulties. The present study has demonstrated the same proposition. Moreover, in the particular context of migration that this study focuses on, our findings highlight the role of resilience not only in promoting the mental health of youths directly, but also bridging

the process of cultural adaption to the maintenance of mental well-being. It suggests that resilience is not an immutable personality trait but rather a systemic response to the adversity of migration. For migrant youth, the level of resilience appears to vary with their stage and orientation of cultural adaptation. Although previous studies have also identified other factors that may mediate the effect of acculturation on the mental health of migrant youth,[36] the fact that the model tested in the present study explains 42.4 percent of the variance in mental health suggests that resilience is a uniquely important contributing factor for youth mental well-being.

The country context of migration also makes a difference. Compared to youths from other countries, migrant youth from the China sample appears to have lower levels of resilience, which leads to poorer mental well-being. This could be attributed to the difference between internal (China) and predominantly international migration (other countries), or the cultural differences between the eastern and western countries. Although migrating within the country, the long enforced household registration system in China that creates a divide between rural and urban citizens have generated many barriers for the adaptation of rural-urban migrants in the city. This has made the acculturation of Chinese migrant youth even more complex and challenging.[37,9] More research is needed along this line of inquiry for cross-country and cross-cultural comparison.

The study has several limitations, especially in terms of the study sample. Since it is only a pilot study of an international collaborative research team, the sample size is fairly small in each country, which constrains the possibility to perform more sophisticated analyses and might have distorted some analysis results. In addition, participants of the pilot study are recruited through convenience sampling, which limits the generalizability of the research findings. Therefore, results of the study must be interpreted with caution, and will need to be replicated with larger samples of migrant youth in future studies. However, the diversity of study sites and the mix of internal

and international migrants should also be considered a strength of the study, given that similar kind of comparable datasets across multiple settings of migration are rarely available in the existing literature. This study has served as a pioneer investigation that implies a promising direction for future large-scale comparative research.

Despite the aforementioned limitations, this study advances the extant knowledge and illustrates the relationship between the mental health of migrant youth and the larger process of cultural adaptation and resilience building. The findings could have important implications for public health intervention in two directions. On the one hand, given the significance of resilience in promoting youth mental health, resilience building would still be a recommended strategy to improve the mental well-being of migrant youth. On the other hand, considering that specific patterns of acculturation do contribute to the resilience of youth, and indirectly to youth mental health, in different ways, some culturally sensitive and appropriate components could be built into the public health intervention programs in an effort to facilitate the integration-oriented acculturation that is shown to benefit mental health. Support programs should aim to motivate migrant youths to acknowledge the value of their original culture as well as to enhance their appreciation of the host culture, thus amplifying the advantage of integration to foster resilience and to promote mental health.

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Ethical approval was granted by all the universities of the local researchers at each study site, including: University of New South Wales Human Research Ethics Committee (Australia), Dalhousie University Social Sciences and Humanities Research Ethics Board (Canada), The Chinese University of Hong Kong Survey and Behavioral Research Ethics Committee (China), University of Auckland Human Ethics Committee (New Zealand), Humanities and Health Research Ethics Committee (HHREC) and North-West University (South Africa), and University of Bristol Faculty of Medicine Research Ethics Committee (United Kingdom).

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