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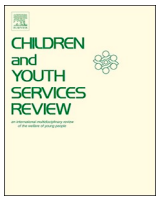

Family migration and youth psychosocial development: An ecological perspective

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ABSTRACT

Urbanization has prompted worldwide family migration. This study examines the psychosocial impact of rural-to-urban migration on youth in China, a fast-urbanizing country with 268 million rural migrant workers and 103 million migrant youth. Using data from 2012 China Family Panel Studies (n = 2084, age 10–15), this study examines psychosocial disparities (depressive symptoms, social relationships, and future aspirations) among youth migrated with parents, youth left behind by migrant parents, and their peers. The results show that rural-to-urban migration appears to benefit youth psychosocially, but the benefits are clearly limited. Migration is associated with fewer depressive symptoms, but it does not improve youth social relationships or future aspirations. Being female, parent-child conflicts, and living in West China also impose psychosocial risks. While China's urbanization has created socioeconomic inequalities that curtail youth psychosocial development, this study calls for more sustainable urbanization approaches to address the status quo's failings.

1. Introduction

Urbanization has prompted unprecedented rural-to-urban migration globally. Urban populations have increased by 77 million annually worldwide, and migration to urban areas to diversify family income is an increasingly popular survival strategy. However, many migrant families face inequality, deprivation, and exclusion in urbanization (UN-Habitat, 2016). China, with one of the largest urban populations in the world, has had the largest population migration in modern history (UNICEF, 2010). With 286 million rural migrant workers in the country today, over one fifth of China's population are migrants (National Bureau of Statistics, 2018).

When families migrate, some children migrate with their parents and become *migrant children*; some stay in their hometowns and become *left-behind children*, entrusted to one parent or other relatives for childcare while their parent(s) leave home to work for over three months at a time (UNICEF, 2009). Between 2000 and 2015, the number of migrant children in China increased from 20 to 34 million, and the number of left-behind children increased from 30 to 69 million. In total, 4 out of every 10 children in China are affected by family migration, either being migrants themselves or those left behind (NBS et al., 2017).

While China's rural-to-urban migration has provided a massive low-wage workforce that has contributed significantly to rapid national economic growth (Xu, Guan, & Yao, 2011), these migrant families' low income, sparse welfare benefits, and marginalization impose significant challenges on child development (Huang, Song, Tao, & Liang, 2018). Emotionally, migrant children in China presented more symptoms of depression than migrant children of other ethnic groups, such as Chinese Americans and Filipino Americans (Wong, Chang, & He, 2009). Socially, Chinese left-behind children exhibited higher relationship problems than children in the U.S., Europe, and Africa (Wang, Zhou, & Hesketh, 2017).

Although many studies have examined the prevalence of psychosocial problems among Chinese children from migrant families (e.g. Wang et al., 2017), research of this population may have greater impact with consideration of risk and protective factors through systematic human development theories. These factors must be examined within China's policy context, in which migrant status itself generates inequality. Migration within China is complex, as a Chinese citizen is registered in the *Household Registration System* at birth as a resident of his/her family's municipality of origin (Chan, 2009). When rural citizens migrate to an urban area, their family's official residency may remain registered in their hometown. As a result, migrants, at their places of destination, are often excluded from public welfare afforded to local registered residents (for details, see Huang et al., 2018).

This study examines youth (age 10–15) psychosocial well-being in migrant families by situating ecological systems theory in rapidly urbanizing China, which exemplifies the global rural-to-urban migration phenomenon. While previous studies focused primarily on either migrant (e.g. Wong et al., 2009) or left-behind (e.g. Su, Li, Lin, Xu, & Zhu,

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2013) youth, or compared youth in migrant families together with non-migrants (Huang et al., 2018; Wang et al., 2017), this study disentangles psychosocial disparities across migrant, left-behind, rural non-migrant, and urban youth.

2. Chinese migration within an ecological framework

Bronfenbrenner's (1986, 1994) ecological development theory states that children are active beings whose interactions with their environments directly affect their development. Children develop in nested ecological subsystems: micro-, meso-, exo-, and macro-systems.

2.1. Microsystem

The *microsystem* refers to a child's immediate environment where he/she has face-to-face interactions, such as family and school. For instance, child psychosocial development is closely linked to parent-child conflict, which can increase with family migration (Wong et al., 2009) and subsequent disruption in family interaction patterns (Hamilton, 2013). Many migrant parents in China have limited time to spend with their children due to their long, unstable work hours (Guo, Yao, & Yang, 2005; Li & Li, 2007). Chinese migrant parents may also follow more authoritarian parenting styles that emphasize discipline and obedience (Wang & Liu, 2018; Wong, Chang, & He, 2007), which can intensify parent-child conflict.

Parental socioeconomic status is another strong microsystem predictor for child psychosocial development (Cabrera, Malin, Kuhns, & West, 2017). Migrants in China generally have lower socioeconomic status than their urban-registered counterparts. A large-scale survey found that over 80% of migrant workers had middle school education or below, whereas 70% of urban-registered workers had high school education or above (Li & Li, 2007). Along with lower educational attainment, many migrant workers earn lower wages than urban residents, and therefore suffer from harsher economic conditions (Li & Li, 2007; Zhuang & Wong, 2017). However, migrant workers' wages far exceed rural agricultural workers' (Xu et al., 2011), which may improve the living conditions of children left behind in rural hometowns.

2.2. Mesosystem

The *mesosystem* refers to interactions among micro components, such as parental remote control of child peer group activities. An example of mesosystem is the extent to which parents know about their child's whereabouts when their child is not at home. In migrant families, such child monitoring may be reduced due to parents' long work hours.

Another mesosystem factor is parental involvement in child education, such as establishing positive home environments that support school learning (Epstein, 1990). Education is considered essential for social mobility and prosperity in Chinese society, especially for families with fewer resources (Wen & Lin, 2012). However, while local urban families invest remarkable resources in child education, rural migrant families lag behind in China's intensely competitive educational system, which curtails their children's future aspirations. In fact, migrant children often follow in their parents' footsteps to become next-generation migrant workers (Ling, 2015), and many children left behind in rural hometowns lack stable academic and social guidance from caregivers (Chen, Yang, & Ren, 2015), which may compromise their future aspirations as well.

2.3. Exosystem

The *exosystem* refers to factors that influence children indirectly through micro- and meso-systems, such as neighborhoods. Vast inequality exists between neighborhoods in urbanizing China. Urban families have long-standing economic advantages over rural families. Between 1978 and 2007, urban per capita income increased from CNY $344 (about USD $50) to $13,786 (USD $2000), whereas rural per capita income grew from CNY $134 (USD $20) to a mere $4141 (USD $600; Lu, Lin, Vikse, & Huang, 2013). Among the 65 million Chinese children in poverty-stricken areas, 68% live in rural areas (NBS et al., 2017). In addition, local urban families live in much better conditions than non-local migrants, many of whom earn minimal income and are excluded from housing subsidies. Migrant families therefore are forced to seek informal housing arrangements, often in illegal self-built houses and unfinished basements (Huang et al., 2018).

2.4. Macrosystem

The *macrosystem* consists of political, social, and cultural elements that impact child developmental environment (Bronfenbrenner 1986, 1994). China's economic transitions and urbanization have created drastic inequalities across regions, where living conditions and educational resources vary substantially. East China has the highest economic and human development indicators, followed by central regions, with West China having the lowest indicators (UNICEF, 2010). East China also contains the largest migrant worker population (169 million), followed by Central (59 million) and West China (57 million; National Bureau of Statistics, 2018).

3. The current study

This study answers two questions: (1) What are the effects of rural-to-urban migration on youth psychosocial outcomes in China? (2) For youth affected by family migration, which environmental factors impose psychosocial risks and which factors protect their psychosocial well-being? Three psychosocial outcomes are examined: depressive symptoms, social relationships, and future aspirations.

My hypotheses are: (1) Chinese youth from migrant families (i.e. migrant and left-behind youth) have more depressive symptoms, poorer social relationships, and lower future aspirations than urban and rural youth from non-migrant families. (2) Better ecological environments, manifested from micro- to macro- systems, are associated with fewer depressive symptoms, better social relationships, and greater future aspirations. Factors that relate negatively to youth psychosocial well-being include high parent-child conflict, low parental socioeconomic status, and living in poorer neighborhoods and less developed regions. In contrast, factors that protect youth psychosocial development include close parental monitoring and home environment that supports school learning.

4. Method

4.1. Data

This study used the anonymized data from 2012 China Family Panel Studies (CFPS), a nationally representative survey conducted by the Institute of Social Science Survey (ISSS) of Peking University. CFPS provides a variety of information such as individual economic activities, educational outcomes, residency status, and health (ISSS, 2013). The CFPS sampled households in 25 provinces or municipalities of mainland China. All family members over age 9 were interviewed. The baseline (2010) survey included 14,960 families, and involved 8990 children from these families. These respondents were tracked through annual follow-up surveys. This study examines 2012 CFPS data, in which certain psychosocial outcomes (e.g. the CES-D depressive symptoms scale) were assessed for the first time.

4.2. Sample

The 2012 CPFS survey included 8624 children aged 15 years or below. Guardians answered questions for children younger than 10;

children aged 10–15 answered additional questions, including social relationships and depressive symptoms.

This study focuses on youth ages 10–15 (10 and 15 included, $n = 3056$). The eligible sample size was 2425; excluded cases include youth who were non-Chinese citizens or did not have household registration ($n = 125$), whose family environment was not assessed because the survey interviews were not conducted at home ($n = 102$), and those who answered "not applicable" to depressive symptom items ($n = 241$). To focus on the effects of migration and residency status, two uncommon groups were also dropped in this study: youth living in rural areas with non-agricultural *hukou* (which may indicate urban-to-rural migration, $n = 87$) and youth living in urban areas who have resided with neither of their parents for over eight months in the prior year ($n = 76$). Missing cases were handled by listwise deletion ($n = 341$). The final sample size was 2084. Independent t-tests and chi-square tests showed no significant difference in age, gender, and household income between the final sample and the missing cases.

4.3. Measures

Psychosocial outcomes. Three psychosocial outcomes were included in the survey, including depressive symptoms, social relationships, and future aspirations. *Depressive symptom* was measured by the 20-item Center for Epidemiologic Studies Depression (CES-D) scale, which includes items such as feeling lonely and bothered by trivial things. Youth rated their frequencies of having each experience in the past week on a scale of 0 (*never*) to 3 (*most of the time*). Four positive items were reverse coded; higher summed scores (possible range 0–60) represent more depressive symptoms (Lewinsohn, Seeley, Roberts, & Allen, 1997). The scale showed good reliability in this study (*Cronbach's alpha* = 0.81).

Social relationship was measured by the question "How good do you think your social relationships are?" Youth rated 0–10 based on their current experiences; higher scores represented better social relationships. Using the same scoring method, *future aspiration* was measured by the question "How confident are you about your future?"

Youth group. This main independent variable was measured by a child's official residency (rural or urban registration), current location (rural or urban), and whether he/she was living with parents. The sample was divided into four groups: *migrant youth* ($n = 140$, 6.7% of the sample), which refer to those living in cities with rural residency registration and who lived with one or both of their parents for at least eight months in the prior year; *left-behind youth* ($n = 813$, 39%), defined as those living in rural areas with rural registration and resided with neither or only one parent for over eight months in the prior year; *rural youth* ($n = 748$, 35.9%), who live in rural areas with rural registration and lived with both parents for at least eight months in the prior year; and *urban youth* ($n = 383$, 18.4%), who live in cities with urban registration and lived with one or both of their parents for at least eight months in the prior year.

Microsystem. Parent–child conflict was measured by *frequency of parent-child argument* through the question "In the past month, how many times did you argue with your parents?" Answers ranged 0–30 ($M = 0.92$, $SD = 2.48$). *Parent education* was measured by the highest level of education attained by either parent. Answers were categorized into illiterate or some elementary school ($n = 333$, representing 16% of the sample), elementary or middle school graduate ($n = 1323$, 63% of the sample), and high school graduate or above ($n = 428$, 21% of the sample). *Household income* was measured by household gross income in the prior year (M = CNY $42,597, equivalent to USD $6,190; SD = CNY $52,074, or USD $7,568). Household income was divided into five quintiles in data analysis.

Mesosystem. *Parental knowledge about youth whereabouts* was measured by the item "Do your parents know who you are with when you are not home?" Answers ranged from 1 (*never*) to 5 (*always*; $M = 3.65$, $SD = 1.20$). *Home environment that supports school learning* was measured by the survey interviewer-reported item "To what extent does home environment indicate parents/guardians care about child education (e.g. books, newsletters, and other learning materials at home)." Answers were coded from 1 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating more educationally supportive home environments. As shown in Table 1, the sampled families' average home environment was rated 3.58 out of 5 ($SD = 0.73$).

Table 1
Descriptive statistics (N = 2084).

Variables	M or Percentage	SD	Range
Psychosocial Outcomes			
Depressive symptom	11.66	6.57	0–40
Social relationship	7.04	2.04	0–10
Future aspiration	7.69	2.05	0–10
Youth Group (%)			
Rural	35.89		
Left-behind	39.01		
Migrant	6.72		
Urban	18.38		
Male (%)	52.50		
Age	12.63	1.68	10–15
10–12 (%)	46.21		
13–15 (%)	53.79		
Microsystem:			
Frequency of parent–child argument last month	0.92	2.48	0–30
Parent education (%)			
Illiterate/some elementary school	15.98		
Elementary/middle school graduate	63.48		
High school graduate or above	20.54		
Annual household income (in CNY)	42,597.25	52,073.73	
Mesosystem:			
Parental knowledge about youth whereabouts	3.65	1.20	1–5
Home environment that supports school learning	3.58	0.73	1–5
Exosystem:			
Neighborhood economic condition	3.91	1.28	1–7
Macrosystem:			
Region (%)			
East	39.49		
Central	24.57		
West	35.94		

Exosystem. *Neighborhood economic condition* was measured by interviewer-rated economic condition of the participant's residential community. Answers ranged from 1 (*very poor*) to 7 (*very wealthy*). As shown in Table 1, the sampled youth on average lived in medium economic conditions ($M = 3.91$, $SD = 1.28$).

Macrosystem. *Residential region* was divided into three categories based on the National Bureau of Statistics' (2011) definition: East (including East and Northeast provinces), Central, and West. Most of the sampled youth (39%) were living in East China, where the economy is most developed; 36% were living in West China, where the economy is lagging; and 25% were living in Central China, where economic development is between the East and the West.

Demographics. Gender and age differences were also examined. *Gender* was coded as 1 (*male*, $n = 1,094$) and 0 (*female*, $n = 990$). *Age* (ranged 10–15) was divided into two groups in analysis: 10–12 years (46% of the sample), a middle childhood stage (Marotz & Allen, 2013) that corresponds to part of typical elementary school age in China (4–6th grade); and 13–15, a part of adolescence that corresponds to middle school age in China (7–9th grade; 54% of the sample). The average sample age was 12.63 ($SD = 1.68$).

5. Analysis

Descriptive statistics were calculated for the distribution of all variables. One-way between-subjects analysis of variance was performed to compare psychosocial outcomes across rural non-migrant,

Table 2
Psychosocial outcomes by youth group (N = 2,084).

	Depressive symptom *M (SD)*	Social relationship *M (SD)*	Future aspiration *M (SD)*
All sample	11.66 (6.57)	7.04 (2.04)	7.69 (2.05)
Youth group			
Rural	12.19 (6.49)	6.97 (2.10)	7.64 (2.07)
Left-behind	12.22 (6.78)	6.92 (2.07)	7.57 (2.13)
Migrant	10.46 (5.82)	7.24 (2.00)	7.75 (2.07)
Urban	9.86 (6.13)	7.34 (1.82)	8.02 (1.79)
F-test	15.08***	4.59**	4.46**
Pairwise comparison	*TK-test*	*TK-test*	*TK-test*
Rural vs. left-behind	0.16	0.71	0.99
Rural vs. migrant	4.07*	2.08	0.79
Rural vs. urban	8.07*	4.14*	4.17*
Left-behind vs. migrant	4.18*	2.48	1.35
Left-behind vs. urban	8.31*	4.78*	5.04*
Migrant vs. urban	1.34	0.70	1.92

Note: TK-test = Tukey-Kramer test. *$p < .05$, **$p < .01$, ***$p < .001$.

left-behind, migrant, and urban youth. Post-hoc pairwise comparisons were performed, where the Tukey-Kramer test was used since cell sizes (i.e. youth groups) were unequal. This was followed by Ordinary Least Squares regressions of each psychosocial outcome. Multivariate regression models were used to compare the effects of youth group and environmental factors. Variance inflation factors (VIFs) were calculated for independent variables; a mean VIF of 1.43 suggested no evidence of multicollinearity. Gender and age were controlled in all regression analyses. STATA 15.1 was used for the analysis.

6. Results

6.1. Psychosocial differences across youth groups

As shown in Table 2, the sampled youth on average scored 11.66 on the CES-D scale ($SD = 6.57$). The scores varied significantly by youth groups ($F(3, 2080) = 15.08$, $p < .001$). Left-behind youth scored the highest ($M = 12.22$), followed by rural ($M = 12.19$), migrant ($M = 10.46$), and urban youth ($M = 9.86$). Post hoc pairwise comparisons show that youth living in rural areas (including left-behind and non-left-behind) differed significantly from those living in cities (including migrant and urban youth; $p < .05$).

The sampled youth overall reported good social relationships ($M = 7.04$ on a scale of 0–10, $SD = 2.04$) and relatively high future aspirations ($M = 7.69$, $SD = 2.05$). The youth groups presented similar patterns: urban youth performed the best, followed by migrant, rural non-migrant, then left-behind youth; these differences were statistically significant ($F(3, 2080) = 4.59$, $p < .01$ for social relationships; $F(3, 2080) = 4.46$, $p < .01$ for future aspirations). Post hoc pairwise comparisons suggest that rural youth and left-behind youth had significantly worse social relationships and lower future aspirations than urban youth ($p < .05$).

Taken together, the bivariate analyses suggest that youth living in rural areas were psychosocially more disadvantaged than those living in urban areas. Left-behind youth in rural areas seemed to be the most vulnerable; migrant youth appeared to perform better than rural non-migrant youth, but not as well as locally-registered urban youth.

Table 3 presents multivariate regression results. For each outcome variable, Model 1 tests the relationship between the main independent variable (youth group) and the outcome, controlling for gender and age effect; Model 2 factors in environmental factors.

6.2. Depressive symptoms

As shown in Table 3, without controlling for environmental factors (Model 1), rural non-migrant youth had 1.74 and 2.35 points more depressive symptoms than migrant and urban youth, respectively. Post hoc pairwise comparisons suggest that left-behind youth also had more depressive symptoms than migrant ($p < .01$) and urban youth ($p < .001$).

After adding environmental factors (Model 2), rural youth and left-behind youth remained more depressive than urban youth ($p < .1$), while the difference among migrant, rural, and left-behind youth was no longer significant. Parent-child argument and living in West China were strongly associated with more depressive symptoms; in contrast, being male, having parents with high school degree or above, parental knowledge about child whereabouts, and home environment that supports school learning were related to fewer depressive symptoms. Comparing Model 1 and 2, the significant *F*-value change ($\Delta F = 20.96$, $p < .001$) suggests that adding the environmental factors significantly increased overall model fit.

6.3. Social relationships

When environmental factors were not considered (Model 1), urban youth reported significantly better social relationships than rural youth ($B = 0.36$, $p < .01$). In contrast, left-behind youth showed worse social relationships than both urban and migrant youth in post hoc analysis. However, Model 2 suggests that when environmental factors were included in the analysis, social relationships no longer differed across youth groups. Adding environmental factors also increased overall model fit ($\Delta F = 3.27$, $p < .001$). Youth social relationships were negatively correlated with being male, parent-child arguments, and living in West China (vs. East), and positively correlated with parental knowledge about youth whereabouts and home environment that supports school learning.

6.4. Future aspirations

Consistent with the previous two psychosocial outcomes, urban youth showed significantly greater future aspirations than rural youth ($B = 0.38$, $p < .01$) and left-behind youth ($p < .001$, as in post hoc analysis, Model 1). These differences remained marginally significant ($p < .1$) after controlling for environmental factors (Model 2). Migrant youth, however, did not differ from rural or left-behind youth in their future aspirations. Among environmental factors, youth future aspirations showed a strong, negative relationship with parent-child arguments, but was positively associated with parental knowledge about youth whereabouts and home environment that support school learning. High household income also gave youth greater future aspirations, but this advantage only appeared for those in the top income quintile ($B = 0.34$, $p < .05$). Older youth (age 13–15) reported marginally lower future aspirations than younger ones (age 10–12, $p < .1$), which may indicate that older youth were more concerned about their future.

6.5. Subsample analysis of youth affected by migration

Table 4 shows a subsample analysis of youth affected by migration (i.e. migrant and left-behind youth, $n = 953$). In the microsystem, parent-child argument was strongly negatively associated with all psychosocial outcomes; every additional parent-child argument was associated with 0.59 points higher depressive symptoms, 0.13 points poorer social relationships, and 0.12 points lower future aspirations.

The two mesosystem factors, parental knowledge about youth whereabouts and home environment that supports school learning, also showed strong association with youth psychosocial outcomes. Every 1-point more parental knowledge about youth whereabouts was related

Table 3
Regression estimates of psychosocial outcomes (N = 2084).

	Depressive symptom		Social relationship		Future aspiration	
	Model 1 *B (SE)*	Model 2 *B (SE)*	Model 1 *B (SE)*	Model 2 *B (SE)*	Model 1 *B (SE)*	Model 2 *B (SE)*
Youth group (ref. rural youth)						
Left-behind	0.01 (0.33)	–0.06 (0.32)	–0.06 (0.10)	–0.04 (0.10)	–0.05 (0.10)	–0.05 (0.10)
Migrant	–1.74 (0.60)**	–0.76 (0.58)	0.28 (0.19)	0.17 (0.19)	0.12 (0.19)	0.04 (0.19)
Urban	–2.35 (0.41)***	–0.83 (0.45)+	0.36 (0.13)**	0.18 (0.15)	0.38 (0.13)**	0.24 (0.15)+
Male	–0.31 (0.29)	–0.64 (0.27)*	–0.22 (0.09)*	–0.18 (0.09)*	–0.03 (0.09)	0.003 (0.09)
Age 13–15 (ref. age 10–12)	0.25 (0.29)	0.27 (0.27)	0.04 (0.09)	0.04 (0.09)	–0.19 (0.09)*	–0.18 (0.09)+
Parent-child argument		0.46 (0.05)***		–0.04 (0.02)*		–0.07 (0.02)***
Parent education (ref. Illiterate/some elementary school)						
Elementary/middle school graduate		–0.61 (0.40)		0.03 (0.13)		–0.01 (0.13)
High school graduate/above		–1.08 (0.53)*		0.04 (0.17)		0.002 (0.17)
Household income (ref. bottom-quintile)						
2nd-quintile		0.43 (0.43)		0.20 (0.14)		0.20 (0.14)
3rd-quintile		–0.20 (0.43)		0.17 (0.14)		0.23 (0.14)
4th-quintile		–0.44 (0.44)		–0.03 (0.14)		0.04 (0.14)
Top-quintile		–0.37 (0.45)		0.17 (0.15)		0.34 (0.15)*
Parental knowledge about youth whereabouts		–0.82 (0.12)***		0.12 (0.04)**		0.13 (0.04)***
Home environment supports school learning		–0.64 (0.19)**		0.13 (0.06)*		0.15 (0.06)*
Neighborhood economic condition		0.07 (0.11)		0.002 (0.04)		0.04 (0.04)
Region (ref. East)						
Central		0.004 (0.35)		0.02 (0.12)		–0.04 (0.12)
West		2.58 (0.33)***		–0.29 (0.11)**		0.03 (0.11)
Constant	12.23 (0.31)***	16.44 (0.98)***	7.07 (0.10)***	6.17 (0.32)***	7.75 (0.10)***	6.48 (0.32)***
R^2	0.02	0.13	0.01	0.03	0.01	0.03
ΔF	n/a	20.96***	n/a	3.27***	n/a	4.03***
Post hoc test by youth groups	***F*-ratio**	***F*-ratio**	***F*-ratio**	***F*-ratio**	***F*-ratio**	***F*-ratio**
Migrant = Left-behind	8.57**	1.46	3.24+	1.22	0.86	0.21
Migrant = Urban	0.92	0.01	0.19	0.01	1.69	0.98
Left-behind = Urban	34.10***	2.87+	11.19***	2.26	11.80***	3.84+

Note: ref. = reference group. + $p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

to 0.58 points fewer youth depressive symptoms and 0.12 points greater future aspirations. Similarly, every 1-point greater supportive home environment for school learning predicted 0.76 points fewer depressive symptoms, 0.2 points better social relationships, and marginally greater future aspirations.

In the exosystem, living in better-off neighborhoods yielded significantly greater future aspirations among migrant and left-behind youth. And in the macrosystem, residential region played significant roles; migrant and left-behind youth who live in West China had 3.43 points more depressive symptoms and 0.46 points poorer social relationship than those who live in East China. Other environmental factors, such as parent education level and family income, overall did not significantly affect migrant and left-behind youth's psychosocial development. Additionally, there was significant gender difference in

Table 4
Subgroup analysis of youth affected by migration (N = 953).

	Depressive Symptom *B (SE)*	Social Relationship *B (SE)*	Future Aspiration *B (SE)*
Migrant youth (ref. left-behind youth)	–0.61 (0.60)	0.24 (0.20)	0.08 (0.20)
Male	–1.06 (0.41)*	–0.17 (0.13)	0.003 (0.14)
Age 13–15 (ref. age 10–12)	–0.10 (0.42)	0.10 (0.13)	–0.05 (0.14)
Parent-child argument	0.59 (0.09)***	–0.13 (0.03)***	–0.12 (0.03)***
Parent education (ref.: Illiterate/some elementary school)			
Elementary/middle school graduate	–0.78 (0.56)	0.03 (0.18)	0.01 (0.19)
High school graduate/above	–1.16 (0.81)	0.18 (0.26)	–0.07 (0.27)
Household income (ref. bottom-quintile)			
2nd-quintile	0.76 (0.64)	0.02 (0.21)	0.26 (0.22)
3rd-quintile	–0.02 (0.64)	0.11 (0.21)	0.28 (0.22)
4th quintile	0.08 (0.65)	–0.38 (0.21)+	–0.02 (0.22)
Top-quintile	0.40 (0.67)	0.06 (0.22)	0.37 (0.22)
Parental knowledge about youth whereabouts	–0.58 (0.17)***	0.04 (0.06)	0.12 (0.06)*
Home environment that supports school learning	–0.76 (0.29)**	0.20 (0.09)*	0.16 (0.10)+
Neighborhood economic condition	–0.05 (0.17)	–0.04 (0.06)	0.12 (0.06)*
Region (ref.: East)			
Central	0.04 (0.54)	–0.19 (0.17)	0.07 (0.18)
West	3.43 (0.50)***	–0.46 (0.16)**	0.08 (0.17)
Constant	16.18 (1.44)***	6.59 (0.47)***	6.04 (0.48)***
R^2	0.14	0.05	0.04

Note: ref. = reference group. + $p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

depressive symptoms. Boys in migrant families had 1.06 points fewer depressive symptoms than girls.

7. Discussion

7.1. Psychosocial impact of family migration

Comparing youth from migrant and non-migrant families in both urban and rural China, this study partially contradicted Hypothesis 1. In contrast to previous evidence that migration causes youth more distress (e.g. Hamilton, 2013), this study finds that in China's internal laborer migration, moving to a better environment (i.e. urban areas in this case) brings psychosocial advantages. When only examining the effects of residency, migrant youth have significantly fewer depressive symptoms than rural non-migrant youth. A possible explanation is that migrant families are exposed to better economic opportunities in cities than in rural areas, and less economic hardship reduces family psychological distress. Another factor may be access to urban infrastructure rarely constructed in rural China, including parks, libraries, and playgrounds, which enrich migrant youth's lives and benefit their psychosocial development.

Living in cities, however, does not necessarily bring migrant youth better social relationships nor more confidence in their future. When only looking at the effects of residency, locally registered urban youth report significantly better social relationships and are more confident about their future than rural youth, while migrant youth are not. Despite the benefits of superior urban resources, Chinese migrant youth are faced by many psychosocial challenges in cities (Huang et al., 2018). For instance, their social circles are limited to their schools and neighborhoods, which are often segregated from the higher-quality schools and neighborhoods of youth with local urban registration; the lack of interaction between migrant families and local residents is associated with perceived discrimination of migrant youth and their difficulties adjusting to the urban environment (Guo et al., 2005). Additionally, the non-local residency status of migrant youth, along with subsequent educational and socioeconomic inequalities, may have made migrant youth uncertain about their future.

On average, youth left behind in rural hometowns present the highest depressive symptoms, poorest social relationships, and lowest future aspirations; left-behind youth also show worse psychosocial outcomes compared with their peers who migrate to cities with parents, although this difference was not statistically significant after controlling for environmental factors.

7.2. Roles of environmental factors

As proposed in Hypothesis 2, the psychosocial outcomes of youth from migrant families are influenced by risk and protective factors in each of the micro-, meso-, exo-, and macro-environments (Table 4). In the microsystem, parent-child conflict imposes significant risk on youth depressive symptoms, poor social relationships, and low future aspirations. Further analysis of parental migration status (Table 5) shows that urban parents argued with their children more often than rural and migrant parents, yet notably, urban youth had fewer depressive symptoms than rural youth. This may indicate a more authoritarian parenting style among parents of rural origin (Wang & Liu, 2018; Wong et al., 2007), against which children cannot dispute their parents, resulting in internalized distress.

Another microsystem factor, family socioeconomic status, is overall not relevant to migrant and left-behind youth psychosocial outcomes. However, when examining all youth groups together, having well-educated parents (high school degree or above) reduces youth depressive symptoms, and living in high-income (the top-quintile) families predicts greater future aspirations. These contrasting findings indicate that high socioeconomic status does benefit youth psychosocially, but migrant families may rarely achieve such high status, therefore youth from these families cannot get such psychosocial benefits.

As shown in Table 5, migrant parents overall had slightly better education than rural parents (11 vs. 10% with high school degree or above; 18 vs. 20% below elementary school degree), whereas urban parents' education was remarkably higher (over 60% high school or above, less than 3% below elementary school degree). Similarly, migrant families had slightly higher income than rural families (CNY $39,252 vs. $36,087), but urban families' income was nearly twice as high (CNY $63,634). This disparate socioeconomic status embodies an enormous gap between rural and urban residents. Those who have migrated out of rural areas may have achieved slightly higher status than their rural counterparts, but compared with urban residents, migrants are still "second-class citizens" who provide low-paid labor to the nation's economy (Ling, 2015; Xu et al., 2011).

In the mesosystem, parental knowledge about youth whereabouts and home environment that supports school learning both show strong and positive effects on migrant and left-behind youth's psychosocial outcomes. In the exo- and macro-systems, more affluent neighborhood links to greater future aspirations among youth from migrant families, and residential region significantly influences their depressive symptoms and social relationships. Compared with eastern regions, living in West China imposes significant risk on youth depressive symptoms and social relationships. However, families of rural origins are far more likely to live in poorer neighborhoods and economically less-developed regions than urban families; migrant families, in particular, live in the worst conditions (as shown in Table 5), indicating that youth from migrant families bear the highest psychosocial vulnerabilities.

These findings highlight structural inequalities that impact the psychosocial development of Chinese youth of rural origin, which can be mitigated through policy and service. Policymakers can address the alarming socioeconomic gap between families of urban and rural origins by establishing equal social and economic rights, including equal employment conditions and equitable educational resources for migrant families who are unable to obtain local residency registration.

Moreover, the psychosocial outcomes of migrant and left-behind youth can be enhanced through promoting protective factors while minimizing risk factors in their physical and social environments. Parenting workshops may be provided to foster more effective parent–child communication and conflict resolution; more family educational resources should be allocated to rural and migrant parents, who often lack the resources to establish home environments that support child school learning; developing neighborhood environments in less-developed regions (e.g. West China) will also protect youth psychosocial well-being. In addition, more psychosocial services should target the vulnerable youth groups, such as girls and youth left behind in rural hometowns; these services may include promoting mental health awareness (e.g. recognizing indicators of depression) and building youth resiliency against emotional difficulties.

Urbanization has created notable global challenges that, if not resolved, will threaten sustainable development (UN-Habitat, 2016). Addressing the psychosocial needs of migrant families and youth affected by migration is a key step toward a more sustainable urbanization in the long term. As urbanization and migration increase worldwide, these policy and service implications carry importance for youth affected by migration beyond the 103 million in China.

7.3. Limitations and future research directions

Several limitations of this study warrant further research. First, among the 2425 youth, missing cases totaled 341. One possible reason is that the sample may have underrepresented migrants who move frequently. Migrant youth account for 6.7% of the sample, which is substantially lower than their national representation (12.6%; NBS et al., 2017). Although further tests did not show significant demographic differences between the final sample and missing cases, more missing case information in future data collection will reduce

Table 5
Environmental characteristics by parental migration status.

	Rural parents	Migrant parents[a]	Urban parents	*F*-test/ Chi-square test
N	748	953	383	
Parent-child argument frequency (range: 0–30)	0.93 (2.35)	0.74 (2.17)	1.38 (3.28)	9.15***
Parent level of education (%)				
Illiterate/some elementary school	20.05%	18.15%	2.61%	532.67***
Elementary/middle school graduate	69.65%	70.41%	34.20%	
High school graduate/above	10.29%	11.44%	63.19%	
Household income	36,087 (36,300)	39,252 (38,379)	63,634 (89,354)	40.55***
Parental knowledge about youth whereabouts (range: 1–5)	3.61 (1.18)	3.52 (1.21)	4.06 (1.09)	29.46***
Home environment that supports school learning (range: 1–5)	3.49 (0.72)	3.53 (0.71)	3.87 (0.71)	39.04***
Neighborhood economic condition (range: 1–7)	3.87 (1.33)	3.78 (1.22)	4.34 (1.22)	27.60***
Region				
East	39.97%	31.90%	57.44%	123.36***
Central	19.12%	27.18%	28.72%	
West	40.91%	40.92%	13.84%	

Note: Figures in the table are percentages and chi-square statistics for discrete variables, means (with SDs in parentheses) and *F* values for continuous variables. *** $p < .001$.

[a] Migrant parents include parents of migrant children and left-behind children.

estimation bias.

Second, in addition to ecological systems, child development also involves the *chronosystem*, which refers to changes in micro-, meso-, exo-, and macro-systems over time (Bronfenbrenner, 1994). Given that the CFPS data used in this study did not contain relevant early development measures (e.g. early-childhood care), chronosystem is not included in this study. Further early childhood development data collection will help identify youth psychosocial developmental trajectories.

Third, while depressive symptoms were measured by a 20-item scale, social relationships and future aspirations were both measured by a single-item question. This measurement variance may influence differences in outcome prediction. Future studies could use other measurements to capture more complex psychosocial indicators.

Lastly, the gender effect found in this study is worth further exploration. As an important predictor for youth development, gender has shown mixed psychosocial effects in migration literature. For example, a study of migrant children in Shanghai found that boys were more likely to have distress than girls, possibly due to excessive parental and social expectations on boys in traditional Chinese culture (Wong et al., 2009). A study of rural Chinese children also found boys to have higher depression than girls (Chen, Wang, & Cao, 2011). In contrast, some research found migrant girls to have more emotional symptoms, while boys had more social relationship problems (Wang et al., 2017). Adding to these discussions, migrant and left-behind girls present more depressive symptoms than boys in this study. This result may suggest that girls internalize their psychological distress (Hu, Lu, & Huang, 2014); it may also indicate the disadvantaged cultural position of girls in Chinese migrant families, where the traditional preference for sons may persist (Lee, 2011). This gender difference warrants further examination with larger samples and consideration of more factors, such as parenting styles for sons and daughters in migrant families.

8. Author statement

The author declares no conflict of interest. The funding source had no involvement in study design, analysis, interpretation of data, and writing of the report.

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10. Data availability

Data used in this study are publicly available at: http://opendata.pku.edu.cn/dataset.xhtml?persistentId=doi:10.18170/DVN/45LCSO.

Declaration of Competing Interest

None

Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.childyouth.2020.104953.

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