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Positive youth development in rural China: The role of parental migration

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Abstract

This study examined how parental rural-to-urban migration may affect left-behind children's development in rural China. We used two-wave data collected on 864 rural youth age 10–17 years in the Guangxi Province, China in 2010. We tested psychometric properties of a positive youth development (PYD) model theorized and corroborated in the US, compared a range of developmental outcomes among rural youth by their parental migration status, and explored the mediating role of family economic and social resources in observed associations between developmental outcomes and parental migration. The results showed the PYD model had some international validity although modifications would be needed to make it more suitable to Chinese settings. Little difference in the PYD outcomes was detected by parental migration status. On other outcomes (i.e., self-rated health, school grades, educational aspirations, problem behavior), positive influences of parental migration were observed. Increased income but not social resources in migrant families helped explain some of these patterns. The take-home message from this study is that parental migration is not necessarily an injurious situation for youth development. To advance our knowledge about the developmental significance of parental migration for rural Chinese youth, we urgently need large-scale representative surveys to collect comprehensive and longitudinal information about rural children's developmental trajectories and their multilevel social contexts to identify key resources of PYD in order to better help migrant and non-migrant families nurture thriving youth in rural China.

Keywords

Educational aspirations; Child/adolescent outcomes; Development/outcomes; Self-rated health; Rural/farm families; Parent–adolescent relationships

During the reform and opening era in China, the large-scale rural-to-urban population movement has helped accelerate the country's urbanization and industrialization processes but meanwhile has also exerted hollowing effects of pervasive absence of prime-age inhabitants on rural communities (Cong, 2011). A huge number of rural children are left at home by one or both parents who cannot afford bringing their families to the cities. According to the most recent estimates, about 62 million rural children belong to the population of left-behind children (LBC) in 2010, accounting for over 22% of all Chinese children age 17 or younger (Duan et al., 2013).

The plight of LBC has drawn widespread media attention and stimulated researchers' interests. However, evidence remains sparse as to consequences of parental migration for child development in China. Although negative effects of parental migration on children make intuitive sense and are anecdotally highlighted, limited research has generated mixed results on different developmental outcomes (Hou, 2014; Lu, 2012; Ye and Lu, 2011). This discrepancy may reflect a true countervailing nature of how parental migration affects developmental trajectories of LBC.

The current study is unique in several respects. First, it provides a fuller picture of how parental migration is linked to youth development in rural China, defined as the process of young people's growing up and adapting to the world, and captured by a wide range of social, academic, moral, and behavioral outcomes in this study. Second, by focusing on the conceptualization and operationalization of a positive youth development framework, it contributes to the limited understanding of positive youth development in rural China. Third, it tests two specific mechanisms linking parental migration to left-behind children's development: family economic resources that can be increased via remitted earnings and family social resources that can be shifted by various types of parental migration. Few studies have considered the potential tradeoff between increased material resources and possible social deficits that can be simultaneously incurred from parental migration in rural China.

1. Background

1.1. Parental migration and youth development

What children receive from their parents can be broadly categorized into two groups: economic resources that can be capitalized to pursue opportunities and socio-cultural orientations conveyed via parent-child socialization (McLanahan and Sandefur, 1994). An adequate purchasing power is essential for the family to make available to the growing child development-promoting assets such as adequate nutrition and good housing condition, high quality school and neighborhood, and additional opportunities for skill building (Wen, 2008). Increased economic resources made possible by remittances sent by migrant parents (Morooka and Liang, 2009; Taylor et al., 2013) would presumably be a beneficial factor for child development in migrant households (Asis, 2006).

Parents can also influence their children via parent-child socialization instilling cultural orientations such as habits and value systems into the child and reinforcing or undermining parent-child bonding (Maccoby, 1992). Lacking mutual company on a daily basis, LBC and

their non-resident parents may be subject to impaired parent–child affection and trust (Ye and Lu, 2011). Parental monitoring can also be weakened as in-person presence is often a prerequisite for parents to exert regular and effective supervision maintaining authority and implementing the established codes of family duties and roles.

Research shows that adolescent–parent attachment has profound effects on cognitive, social and emotional functioning and a sense of secure attachment is associated with better mental, social and behavioral outcomes (Moretti and Peled, 2004). Lacking parental monitoring is also a risk factor of adolescent malfunctioning (Matjasko et al., 2007) and has been cited as a key explanation for higher prevalence of problem behaviors of adolescents in single-parent families in the U.S. (McLanahan and Sandefur, 1994). Supportive evidence also emerged for rural children in China showing protective effects of parental presence against loneliness and beneficial effects of parent–child communication on levels of life and school satisfaction and happiness (Su et al., 2013).

On the flip side of the coin, parental absence caused by economically-driven labor migration may not always incur emotional strain for older children but may sometimes provide needed space for them to reflect on their lives, grow more independent and mature, and become more appreciative of their parents' hard work and giving. In fact, a recent study based on data collected from five Chinese cities finds that LBC are more likely to seek help from their parents when they encounter problems in their studying compared to those living with their parents in the same rural community (Zhou et al., 2005). As the authors noted, this finding may suggest there exist many issues in parent–child relationship among rural families and parental absence due to migration may not necessarily deplete family social resources but rather have an unintended benefit in terms of conflict avoiding and trust building.

Therefore, in theory, we speculate there are both positive and negative impacts of parental migration on LBC's developmental outcomes via two plausible mechanisms: increased economic resources via remittances and varied family socialization due to distant parenting.

1.2. Literature review

Most evidence on the impacts of parental migration on LBC is from studies of transnational migration from developing countries such as Mexico and the Philippines to more affluent countries (e.g., U.S. for the Mexican) and areas (e.g., Hong Kong for the Filipino). Family separation is common in these international migratory flows. Both positive and negative impacts on child development have been reported in this literature. In the case of Mexico-to-US migration, research found advantages associated with parental migration in terms of LBC's earning better grades at school (Kandel and Kao, 2001) and having better child and infant health (Frank, 2005) and disadvantages in socioeconomic outcomes (Halpern-Manners, 2011) and emotional wellbeing (Bernhard et al., 2009).

Although rural-to-urban migration in China differs from transnational migration in terms of physical and legal barriers involved in the process, the split family structure is a shared commonality between the two types of migration. There are three subgroups of parental migrant families, namely both-parent migration, father-only migration, and mother-only migration. Children of mother-only migrant family seem to be the most vulnerable group in

terms of having the highest risk to get sick and the lowest possibility to get treatment (Song and Zhang, 2009) and the highest risk of unhealthy behaviors and school disengagement (Wen and Lin, 2012). This category is also the most uncommon among the migrant family types (Wen and Lin, 2012; Ye and Lu, 2011).

Although evidence remains sparse, a burgeoning literature has appeared reporting on how parental migration is associated with child well-being in rural China and has produced mixed results. Parental migration has been negatively linked to physical health conditions (Song and Zhang, 2009; Wen and Lin, 2012), school engagement and academic satisfaction (Wen and Lin, 2012), happiness and satisfaction (Gao, 2010), and psychosocial functioning (Jia et al., 2010), while positively to higher levels of loneliness (Su et al., 2013), problem behaviors (Fan et al., 2009; Gao et al., 2010), and anxiety and depression (Liu et al., 2009). However, nonsignificant results have been reported in outcomes such as school satisfaction and happiness (Su et al., 2013; Zhou et al., 2011), educational status (Lu, 2012), physical health (Jia et al., 2010), and subjective well-being (Zhang et al., 2006). Meanwhile, there has also emerged evidence on positive impacts of parental migration on developmental outcomes such as self-concept, academic performance, and educational outcomes (Chen et al., 2009; Hou, 2014; Leng and Park, 2010; Morooka and Liang, 2009). These mixed results point to a complex, varied picture rather than a single-directional pattern. To make substantial empirical advancement on this issue, a fuller theoretical model of youth development is needed.

1.3. Positive youth development perspective

In western literature of child development, a relatively recent vision has emerged since the beginning of the 1990s, termed the *positive youth development (PYD) perspective*, focusing on positive sides of developmental trajectories and highlighting the potential presence of developmental plasticity or adaptive developmental regulations (Lerner, 2004). Different than the traditional deficit models of youth where adolescence is assumed to be a disturbing time, this strength-based conception views youth as potential resources to be cultivated or capitalized, emphasizing the role of ecological assets of multilevel social contexts in promoting allround healthy functioning characteristic of a thriving youth (Roth and Brooks-Gunn, 2003). Theoretically, the PYD concept has been linked to several latent constructs such as ‘competence, confidence, caring, character, and (positive social) connection,’ embodied in the Five Cs Model of PYD (Roth and Brooks-Gunn, 2003). These domains are meant to capture the major strengths desirable in a youth. In turn, when an adolescent manifests these Five Cs over time, he or she is more likely to achieve a successful transition from adolescence to adulthood, enjoy a healthy and accomplished adulthood, and make positive contributions to self, family, community, and civil society, achieving the sixth C, namely Contribution (Lerner, 2004), throughout his or her life course.

However, despite the theoretical development of positive thinking in youth development, until recently no specific measures of PYD were available and no psychometric testing was possible to empirically validate the PYD concept. Partly due to this deficiency, the deficit models of adolescence remained standard in the scientific study of adolescent development despite a growing recognition of the importance to emphasizing positive description of

youth among researchers, practitioners and policy makers (Jelicic et al., 2007). This situation remains to be the case in China but has largely improved in the United States with the launch of the 4-H Study in 2002, a cohort sequential longitudinal study that began by studying about 1700 fifth grade youth from 13 states across the United States. Data collected from the 4-H study allows psychometric testing of the Five Cs Model of PYD. A series of psychometric validation studies have been subsequently conducted (Bowers et al., 2010; Jelicic et al., 2007), testing the internal reliability and external validity of the scales of Five Cs theorized based on the PYD model and conceptually endorsed by youth-serving practitioners, parents, and early and late adolescents (King et al., 2005). The results from these studies indicate that the Five Cs can be cast in terms of latent constructs which in turn, load on a second-order latent and structurally stable PYD construct (Jelicic et al., 2007).

While this positive vision and vocabulary for discussing youth development has been gaining momentum in the U.S. (Jelicic et al., 2007; Lerner, 2004), application of this framework in non-US settings has been limited. With few exceptions (Shek and Ma, 2010; Sun and Shek, 2010), little work has been conducted to use the PYD concept to investigate youth development issues in China (Su et al., 2013; Wen and Lin, 2012). To the best of our knowledge, no study has tested the Five C's Model of PYD among rural Chinese youth and focused on these constructs when assessing parental migration impacts. While we expect to see the PYD perspectives are generally applicable to the Chinese settings, certain variations in specific measurement of the same constructs are expected in cross-cultural samples (Shek and Ma, 2010). It remains to be an empirical task to assess whether or how much of the operationalization of the Five Cs' Model validated in the US-based 4-H study is replicable to rural Chinese youths. It is also difficult to predict, as *a priori*, how PYD outcomes correspond to parental migration status and types given the conflicting developmental influences of parental migration discussed above.

1.4. The present research

Given this background, the purpose of this study is three-fold. First, we apply the Five C's Model of PYD to a sample of rural youth in China, describe the psychometric properties of these constructs, and create PYD measures that fit our data well. Second, we examine the associations between parental migration and a range of developmental outcomes. Third, we explore the mediating roles of family economic and social resources in the parental migration and youth development associations (if observed).

2. Method

2.1. Data

Data used in this study were from a longitudinal study on rural children age 10–17 years conducted in Yulin City, Guangxi Province in 2010 with socio-demographic variables measured in wave 1 and developmental outcomes measured in wave 2; the two waves were six months apart. Two primary schools in Bobai county and two middle schools in Beiliu county, all with strong presence of LBC, were selected as sampling units. The two counties and the four schools share similar socio-demographic profiles and financial characteristics. After obtaining permission from the school principals, 16 well-trained interviewers

(including one university teacher and 15 psychology graduate students) provided students with a detailed description of the study design and consent procedure, and then invited them to participate in the survey. All students from the targeted classes (Grade 5 and Grade 7–8) in these schools were approached. The eligibility criteria for left-behind children included the following: (1) they were born and raised in the countryside; and (2) one or both of their parents migrated to cities for employment. Other children were similarly recruited from the same schools for comparison. All eligible students who agreed to participate and provided informed consent were asked to complete a self-administered questionnaire. Detailed sampling description can be found elsewhere (Su et al., 2013).

Except for a small number of students who were absent on the day we conducted the survey, all students in the selected classes agreed to participate in the survey. The response rate of the survey was 96%. After deleting cases with 30% or greater missing values, we had 1164 questionnaires for wave 1 and 1065 for wave 2. Excluding 128 new participants in wave 2 and a few cases that did not provide parental migration information or were orphans in both waves, our final sample consisted of 864 cases for the two-wave analysis.

2.2. Measures

Two sets of dependent variables were included. The first set taps the Five C's Model of PYD, including *competence*, *confidence*, *caring*, *character*, and peer-, school-, family-based *connection* constructs. The current study was not designed with the Five C's model of PYD in mind but a host of questions did probe into PYD aspects. Although our measures of the Cs do not parallel to what were used in the 4-H study (Lerner et al., 2005), the wording of the items seems consistent with the meaning of the Five C constructs. The psychometric properties of the scales of the Cs constructed from these items will be detailed below in the result section because constructing them is a key aim of the present study. The values of these scales are average scores of the compositional items specific to each C. Higher values indicate higher levels in these constructs.

The second set of the dependent variables includes self-rated health, school grades, educational aspiration, and having no problem behavior, which are developmental outcomes not captured by the Cs but often examined in this literature. School grades are divided into five levels ranging from 'mostly Fs' (coded '1') to 'mostly As' (coded '5'). Educational aspiration is measured by a question asking respondents what their expectations are on the highest educational degree they will obtain including six categories: middle school (coded 1), high school or secondary polytechnic schools, associate degree, bachelor's degree, Master's degree, and doctoral degree (coded 6). Self-rated health is measured by a four-level ordinal variable ranging from 'poor or very poor health' (coded 1) to 'very good health' (coded 4). Based on 13 self-reported antisocial behaviors such as getting into a fist fight, copying other students' homework and stealing, a dichotomous indicator of no problem behavior was created, denoted 1 if the respondent reported no problem behavior and 0 if any of the 13 problem behaviors was reported (alpha coefficient = 0.74).

The key independent variable is parent migrant status categorized into four groups: non-migrant family, father-only migration, mother-only migration, and both-parent migration. Seven additional independent variables are also included: demographic characteristics (i.e.,

age and gender), parental educational attainment (i.e., mother's education and father's education (3 levels: elementary school or below, middle school, high school or higher)), family economic resources (i.e., family monthly income (5 levels: '≤ 500 Yuan,' '501–1000 Yuan,' '1001–2000 Yuan,' '2001–4000 Yuan,' and '>4000 Yuan')) and family relative income (self-reported to be poor versus average or affluent compared to fellow villagers), and parental monitoring which is a scale constructed from eight items asking questions such as how much the parent/guardian knows about who the child is with in spare time and when and where the child goes at night. The response categories range from 'never know' (1) to 'always know' (5). Average scores of the eight items are used to measure this scale with good internal reliability (alpha coefficient = 0.86). Among the independent variables, age, gender, and parental educational attainment are treated as control variables according to previous literature (Su et al., 2013; Wen and Lin, 2012). Family monthly income and relative income and parental monitoring are conceptualized as mediating factors of the link between parental migration status and developmental outcomes if observed. Family connection is both an outcome (as a measure of Connection) and a mediator for parental migration impact on other non-connection-based outcomes.

2.3. Statistical analyses

Principle axis factor analyses were performed to construct the scales. Analyses of variance were performed to test the group differences by parental migration status in all the outcomes. Ordinary least square (OLS) regression analyses were conducted to examine associations of parental migration status with all the outcomes except for no problem behavior for which logistic regression was performed. Ordinal logit regression analyses were also performed for school grades, educational aspiration and self-rated health and the results were not different (not shown). For significant associations observed, we further explored whether these associations were in part attributable to family economic (i.e., family relative and absolute income) and social resources (i.e., family connection and monitoring). The baseline model included parent migration, age, gender, and parental education. The second model was fit for the outcomes for which there were significant parental migration coefficients, adding family monthly income and relative income. Subsequently, the third model added family connection and monitoring to the baseline model. This non-nested modeling approach would allow us to separately test the mediating effects of material resources (i.e., absolute and relative income) versus those of non-material social resources (i.e., family connection and monitoring).

To ensure maximum sample size and study power, we imputed missing data using predicted values based on multiple regression on a set of socio-demographic variables with regression coefficients estimated by a bootstrap method (Royston, 2009). All the descriptive and regression analyses were performed using a complete data file containing actual and imputed data. In regression analyses, all of the dependent variables were measured at wave 2 and all of the independent variables were measured at wave 1. This temporal sequence is consistent with our hypothesized effect direction from parental migration to developmental outcomes.

3. Results

3.1. Psychometric properties of the five C's PYD constructs

Table 1 illustrates the item description of the five Cs. The peer-, school-, and family-connection subscales have all reached good internal reliability with Cronbach's alpha coefficients ranging from 0.74 to 0.82 and factor loadings ranging from 0.63 to 0.81. However, they do not constitute a single second-order latent factor that can be termed as 'connection.' The scales of confidence, caring and character also have good internal reliability with alpha coefficients equal to 0.78, 0.84 and 0.73, respectively. The alpha coefficient of the competence scale is relatively lower, 0.66, but exhibiting reasonable factor structures (factor loadings range from 0.60 to 0.69). However, while the Cs are all constructed with good or acceptable internal reliability, they do not fit neatly into a dominant second-order latent factor. In fact, three of them, *competence*, *confidence* and *caring*, seem to cluster together forming a second-order factor ($\alpha = 0.62$ with factor loadings ranging from 0.50 to 0.70), which perhaps can be called a Three C's Model of PYD. Neither *character* nor *connection* fits well with the Three C scale. Thus, the Five C's Model of PYD, theoretically proposed for the past two decades and empirically validated using data from the 4-H study in the US, receives partial empirical support from the present study.

Table 2 shows the correlation matrix of these constructs. As expected, competence, confidence, caring, character, and peer connection are all significantly and positively correlated but their correlations with school and family connection are weaker. These bivariate correlation results suggest positive developmental aspects generally go hand in hand although school and family connections seem to be outliers in this picture.

3.2. Sample statistics

Table 3 shows sample statistics by parental migration status with significance levels of the observed group differences. About 45.8 percent of the sample is LBC among whom both-parent migration is the most common category (57.1%), followed by father-only migration (27.4%), with mother-only migration most rare (15.5%). No significant differences are found among the Cs. Self-rated health and no problem behavior show significant group differences with the highest level of self-rated health found in the mother-only migration category and the father-only migration most advantaged in having no problem behavior. Father's education was the lowest in both-parent migration families. The highest family income level was found in two-parent migration families and the lowest found in non-migrant families.

3.3. Parental migration and youth development outcomes

Table 4 presents regression results of all the Cs, controlling for age, gender and parental education. Consistent with the crude group comparison results shown in Table 3, the Cs generally do not differ by parental migration status. Therefore, no further analyses would be needed to evaluate the mediating effects for the associations between the Cs and parental migration.

Tables 5 and 6 show regression results of additional developmental outcomes not captured by the Cs. With the not-left-behind group as reference, father-only migration corresponds to higher educational aspirations (Model 1B: coefficient = 0.34; $p < 0.05$) and high levels of no problem behaviors (Model 1D: OR = 1.72; $p < 0.05$); mother-only migration is linked to better self-rated health (Model 1C: coefficient = 0.33; $p < 0.05$); and both-parent migration is associated with higher school grades (Model 1A: coefficient = 0.24; $p < 0.05$) and higher educational aspirations (Model 1B: coefficient = 0.30; $p < 0.05$). As to the hypothesized mediating role of economic and social resources, the results show that the income variables are positive covariates and help explain the observed migration effects on the educational outcomes and self-rated health, whereas neither family connection nor family monitoring exhibits any mediating effect. For example, the effect size of both-parent migration for school grades is cut into half from Model 1A to Model 2A with the income variables added but it remains unchanged from Model 1A to Model 3A with the social resource variables added. The same mediating patterns are observed for educational aspiration. For self-rated health, the effect of mother-only migration is reduced 12 percent from Model 1C (coefficient = 0.33) to Model 2C (coefficient = 0.29) with the income variables added and remains unchanged from Model 1C to Model 3C with the social resource variables added. Not much mediating effect is found for the effect of father-only migration on having no problem behaviors.

4. Discussion

The need for paying attention to the effects of parental migration on LBC's development in China has been increasingly recognized in recent years (Lu, 2012; Ye and Lu, 2011). While lay perceptions and anecdotal discourse about the consequences of parental migration on children who are left behind in the rural communities by their migrant parents tend to be negative, survey-based evidence is mixed with nonsignificant, positive, and negative effects reported in previous publications depending on the outcomes and samples. A key purpose of the current study is to further examine the link between parental migration and youth development focusing on positive outcomes. Drawing upon the Five C's Model of PYD (Lerner, 2004), we explored psychometric properties of several scales of the Cs and examined the association between parental migration and the Cs in two rural communities of China. We also tested the association between parental migrant status with several additional outcomes not captured in the Cs but often examined in this literature. In summary, little difference in the Cs was detected between LBC and non-LBC, whereas more differences were revealed on other outcomes including self-rated health, school grades, educational aspirations, and having no problem behavior. The results generally point to the benefits of parental migration for youth development in rural China.

In order to provide a fuller picture of how LBCs fare relative to non-LBC, we applied the Five C's Model of PYD to a Chinese rural setting seeking evidence to support or refute this theoretical model recently corroborated using data from the 4-H study in the US. We found supportive evidence for the first-order scales, that is, a set of instruments were identified that constituted the five Cs with acceptable reliability. Semi-confirmatory evidence was found for the connection construct, that is, rather than finding a single dominant factor underlying a range of connection items, three separate, albeit conceptually connected, subscales of

Connection emerged indexing connections in three distinct domains—peer, school, and family. In terms of the second-order factor, we found clustering among three of the five Cs, namely *competence*, *confidence*, and *caring*, but neither *character* nor *connection* scales fit well into the Three-C factor structure. Therefore, international validity of the Five C's Model of PYD is *partially* evidenced but variations are also observed in terms of the second-order factor structure and the specific items used to construct the scales. One explanation of this result is that this could be a measurement issue, that is, we did not find the best way to measure the Character and Connection constructs and with better measurement these two C's may converge with the other three C's. On the other hand, this result can have some substantive meaning. If the concepts of Character and Connection are culturally distinct from the concepts of Competence, Confidence, and Caring, then this result may reflect that competent, confident and caring youth in rural China do not necessarily have stronger tendencies of possessing higher moral standards (as indexed by the Character construct) or positive connections with important others. As previously noted (Shek et al., 2007), there can be different operationalization of the PYD concept depending on the specific social and cultural settings. The finding that three of the five C's cluster together in our sample suggest that the PYD concept be generally applicable to the Chinese case but the conception and measurement of the PYD constructs need to be further explored and refined. That said, the approach of applying the Five C's Model of PYD to this data was *ad hoc* rather than premeditated prior to the survey design. More comprehensive survey instruments need to be developed and tested in future work in order to strengthen empirical tools for the PYD approach.

The second purpose of our study is to compare LBC with non-LBC in a range of developmental outcomes. No differences were found in the C's by parental migration status, suggesting parental migration should not be presumed to be a risk factor for overall youth development at least in terms of competence, confidence, caring, character, and connection which are positive outcomes that are typically not considered in the literature on left-behind children in rural China (Hu and Li, 2009). A key contribution of the PYD model to the understanding of the LBC in China is its representing a more balanced and holistic approach to studying the comprehensive role of parental migration in LBC's development.

More significant results emerged when the non-C outcomes were used, and they generally point to advantages of LBCs compared to non-LBCs. Father-only migration was linked to higher educational aspirations and lower levels of problem behavior; mother-only migration corresponded to better self-rated health; and youth from both-parent migrant families reported better school grades and higher educational aspirations. These results indicate developmental benefits of parental migration in our sample. In addition, we found family income was a significant covariate in many cases and a mediator for several outcomes. By contrast, neither family connection nor family monitoring helps explain parental migration effects.

Despite evidence on increased economic status (Taylor et al., 2013) via remittances and much documented developmental benefits of increased income (McLanahan and Sandefur, 1994), most studies of LBC in rural China have reported negative or nonsignificant effects of parental migration and little work has considered beneficial effects of parental migration (Hu

and Li, 2009). The current study is one of a few that reports on significant and positive impact of parental migration on youth development. Admittedly, our sample is not representative but limited to two rural communities in a province geographically remote from the center and concentrated with ethnic minorities. That said, our sample shares some basic characteristics of migrant families with another published study (Wen and Lin, 2012) in terms of patterns that mother-only migration family is the most uncommon, the majority of migrant parents work in cities far away from the hometown, and the average frequency of parental contact is between occasionally and often. However, lacking nationally representative samples to compare, it is hard to put our study findings into context. Assuming the observed positive effects are causal, it can be speculated that there are some community-specific features that help migrant families in this sample mitigate potential negative effects of parental absence and capitalize positive effects of increased income. Evidence from the Philippines demonstrates the contribution of community support to positive developmental outcome of LBC in their transnational migrant families (Asis, 2006). Few studies have addressed such moderating factors in the Chinese settings. More research is clearly needed to further investigate the countervailing and contingency forces of parental migration on youth development in rural China.

Another informative finding from this study is that “which parent migrants” makes a difference for LBC's outcomes. However, reasons underlying the observed differences in the mother-only (on self-rated health) and father-only (on educational and behavioral outcomes) migration benefits are hard to speculate. Ideally, these effects should be tested on girls and boys separately considering the emerging evidence that girls benefit more from parental migration (especially father-only migration) than boys (Hu and Li, 2009). Due to small sample size constraint, our study cannot address these issues to provide a gender perspective. Studies equipped with larger sample sizes can test how gender of the migrant parent and gender of the left-behind child interactively play a role in the link between parental migration and LBC's outcomes.

Other than the sample issues, a key limitation of this study is its inability to test and control for selection effect. Although the study was longitudinal and the outcomes were measured six months after the independent variables were collected, the analysis was essentially lagged cross-sectional in nature. It is possible that parents were less likely to migrate if their children had undesirable developmental outcomes. The differences in developmental outcomes between left-behind children and non-left-behind children may be at least partly due to the selection into migration, rather than parental migration itself. A handful of studies have used aggregate-level variables as instruments (de Brauw and Giles, 2008; Taylor et al., 2013) to control for potential endogeneity bias and found significant effect of parental migration in rural China net of selection bias. Unfortunately such variables were not available in the current study. Future cross-sectional surveys should consider collecting information that can be used to create effective instruments such as the prevalence of out-migration and the average level of remittances among migrant families in the village to account for potential selection bias.

This study is also limited by its reliance on single-source (the student) self-reported measures which are inevitably subject to response bias. In addition, some important

variables that are conceptually relevant as predictors or mediators are not available and omitted from the analyses. In fact, the best R^2 we found across the models was 10% (on school grades), leaving large proportions of the variances in the outcomes remaining unexplained.

In conclusion, the key messages from this study are three-fold. First, the Five C's Model of PYD theorized and corroborated in the U.S. has some international validity although modifications are necessary to make it more suitable to the Chinese settings and more work needs to be done to create valid and reliable instruments to capture the PYD constructs. Second, for youth aged 10–17 in two rural communities in Guangxi Province, parental migration is not linked to worse developmental outcomes; rather, positive influences on several outcomes are observed. More survey-based quantitative studies are needed to further examine these associations to evaluate whether our findings are unique or replicable in other settings. Third, increased income rather than family socialization is an important reason of the observed benefits of parental migration. To advance our knowledge about the developmental significance of parental migration for rural Chinese youth, studies with more rigorous designs are in order. We urgently need large-scale representative surveys to collect comprehensive information about rural children's developmental trajectories and their multilevel social contexts to identify key resources of PYD in order to better help migrant and non-migrant families nurture thriving youth in rural China. For this purpose, longitudinal studies are particularly helpful as they are not only better equipped to get at causality but they also can reveal developmental trajectories over time to better identify developmental assets of multiple life domains (Theokas and Lerner, 2006) leading to successful upward social mobility and a better life in adulthood for rural youth in China.

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Table 1

Item description of constructed scales of positive youth development.

Constructs	Item description	Min-max	Loadings	Alpha
Competence (1 = completely disagree; 5 = completely agree)				
	1. I think I can do many things well independently.	(1, 5)	0.69	0.66
	2. I can take care of myself in living.	(1, 5)	0.64	
	3. I can do well in everything I want to do.	(1, 5)	0.61	
	4. My mental status is quick and active.	(1, 5)	0.60	
Confidence (1 = not certain at all; 5 = very certain)				
	1. How certain are you to be able to deal with challenges in the future?	(1, 5)	0.64	0.78
	2. How certain are you to always have friends caring about you in the future?	(1, 5)	0.65	
	3. How certain are you to have a happy life in the future?	(1, 5)	0.78	
	4. How certain are you to be able to do things that interest you in the future?	(1, 5)	0.75	
Caring (1 = completely disagree; 5 = completely agree)				
	1. I can understand my parents' hard work and giving.	(1, 5)	0.79	0.84
	2. I am very grateful to my parents, teachers, and friends.	(1, 5)	0.86	
	3. I am very thankful for people who have helped me.	(1, 5)	0.76	
Character (1 = completely agree; 4 = completely disagree)				
	1. I think it is ok to occasionally cheat on exams.	(1, 4)	0.58	0.73
	2. We can take away other people's things as long as we are not caught.	(1, 4)	0.85	
	3. I can participate in beating when others are fighting.	(1, 4)	0.72	
Connection				
Peer (1 = completely true; 5 = completely not true)				
	1. Nobody talks to me.	(1, 5)	0.63	0.74
	2. It is very hard for me to make friends.	(1, 5)	0.69	
	3. It is very hard for me to make my same-age peers like me.	(1, 5)	0.65	
	4. Nobody plays with me.	(1, 5)	0.66	
School (1 = completely not true; 5 = completely true)				
	1. I am very happy at school.	(1, 5)	0.71	0.80
	2. My teachers at school are fair to the students.	(1, 5)	0.76	
	3. I feel safe at school.	(1, 5)	0.80	

Constructs	Item description	Min-max	Loadings	Alpha
<i>Family</i>	(1 = <i>never</i> ; 5 = <i>always</i>)			
	1. I feel loved by my family members.	(1, 5)	0.71	0.82
	2. My family members care about one another.	(1, 5)	0.81	
	3. My family members are very close to one another.	(1, 5)	0.79	
Three Cs'	4. Family is the source of my strength and support.	(1, 5)	0.65	
	Competence	(1, 5)	0.70	0.62
	Confidence	(1, 5)	0.59	
	Caring	(1, 5)	0.50	

Table 2

Correlation matrix among the Cs of positive youth development model.

	1	2	3	4	5	6	7
1. Competence	1.00						
2. Confidence	0.40**	1.00					
3. Caring	0.36**	0.28**	1.00				
4. Character	0.15**	0.14**	0.23**	1.00			
5. Peer connection	0.17**	0.23**	0.19**	0.20**	1.00		
6. School connection	-0.00	0.04	-0.03	0.01	0.07*	1.00	
7. Family connection	0.10**	0.04	0.06	-0.03	0.03	0.32**	1.00

p values in the parentheses;*
p < 0.05;**
p < 0.01.

Table 3

Sample statistics by parental migration status.

	Overall	Not-left-behind children	Father-only migration	Mother-only migration	Both-parent migration
Sample size	864	477	106	60	221
Dependent variables					
Competence	3.76 ± 0.95	3.78 ± 0.94	3.69 ± 0.93	3.80 ± 0.99	3.74 ± 0.99
Confidence	3.45 ± 0.85	3.44 ± 0.84	3.35 ± 0.88	3.60 ± 0.88	3.47 ± 0.85
Caring	4.31 ± 0.72	4.32 ± 0.71	4.29 ± 0.77	4.15 ± 0.93	4.33 ± 0.62
Character	3.67 ± 0.49	3.69 ± 0.52	3.63 ± 0.48	3.60 ± 0.49	3.66 ± 0.42
Connection (Peer)	4.12 ± 0.89	4.13 ± 0.90	4.16 ± 0.82	3.94 ± 1.01	4.13 ± 0.86
Connection (School)	3.54 ± 1.01	3.55 ± 1.05	3.50 ± 1.02	3.48 ± 1.04	3.54 ± 0.94
Connection (Family)	3.52 ± 1.21	3.46 ± 1.23	3.49 ± 1.21	3.47 ± 1.30	3.68 ± 1.13
Self-rated health ^a ***	2.75 ± 0.98	2.80 ± 1.00	2.68 ± 0.97	3.10 ± 0.99	2.57 ± 0.91
School grades ^b	2.98 ± 1.22	2.94 ± 1.25	3.03 ± 1.23	2.98 ± 1.30	3.03 ± 1.28
Educational aspiration ^c	3.58 ± 1.63	3.51 ± 1.63	3.72 ± 1.63	3.47 ± 1.64	3.69 ± 1.61
No problem behavior ^d *	60.3%	61.8%	70.8%	53.3%	53.9%
Independent variables					
Age ***	14.08 ± 1.38	13.83 ± 1.41	14.21 ± 1.42	14.05 ± 1.46	14.57 ± 1.13
Male	47.7%	46.3%	45.3%	50.0%	51.1%
Mother's education ^e	1.71 ± 0.65	1.75 ± 0.68	1.62 ± 0.64	1.67 ± 0.63	1.70 ± 0.62
Father's education ^e **	1.58 ± 0.64	1.63 ± 0.68	1.51 ± 0.63	1.63 ± 0.59	1.49 ± 0.58
Family monthly income ^f ***	2.32 ± 0.92	2.16 ± 0.89	2.40 ± 0.88	2.38 ± 0.78	2.62 ± 0.98
Relatively poor income	20.3%	22.0%	21.7%	11.7%	18.1%
Family monitoring ^g	3.00 ± 0.94	3.00 ± 0.99	3.07 ± 0.86	2.97 ± 0.89	2.97 ± 0.87

* $p < 0.05$;** $p < 0.01$;*** $p < 0.001$.^aSelf-rated health is measured by four categories: 1) very poor or poor; 2) fair; 2) good; 4) very good.

^b School grades is measured by five categories: 1) mostly F; 2) mostly D; 3) mostly C; 4) mostly B; 5) mostly A.

^c Educational aspiration is measured by a question asking respondents what their expectations are on the highest educational degree are with six categories: middle school (coded 1), high school including professional schools, associate degree, bachelor's degree, master's degree, doctoral degree (coded 6).

^d Based on 13 self-reported antisocial behaviors, a dichotomous indicator of no problem behavior was created, coded 1 if the respondent reported no problem behavior and 0 any of the 13 problem behaviors was reported (alpha coefficient = 0.74).

^e Parental education is measured by three categories: 1) elementary school or below (coded 1); 2) middle school (coded 2); 3) high school or above (coded 3).

^f Family monthly income is measured by five categories: 1) 500 Yuan; 2) 501–1000 Yuan; 3) 1001–2000 Yuan; 4) 2001–4000 Yuan; 5) >4000 Yuan.

^g Family monitoring is measured by the mean score of 8 items with values ranging from 1 to 5 (alpha = 0.86).

Table 4

Comparison by parental migration status on competence, confidence, caring, character, and connection (*OLS regression coefficients*).

	Competence	Confidence	Caring	Three Cs'	Character	Connection (peer)	Connection (school)	Connection (family)
Parental migration								
Not-left-behind								
Father-only migration	-0.08	-0.09	-0.03	-0.07	-0.04	0.07	-0.01	0.02
Mother-only migration	0.03	0.16	-0.16	0.01	-0.08	-0.16	-0.05	0.00
Both-parent migration	-0.06	0.03	0.02	-0.01	0.01	0.06	0.07	0.18
Controls								
Age (continuous)	0.05	-0.01	0.02	0.02	-0.03 ^{**}	-0.08 ^{**}	-0.12 ^{**}	0.08 [*]
Male	-0.08	0.02	-0.26 ^{**}	-0.10 [*]	-0.13 ^{**}	-0.12 [*]	0.04	-0.04
Mother's education	0.15 ^{**}	0.02	0.07	0.09 [*]	0.02	0.05	0.02	0.10
Father's education	-0.02	-0.01	0.04	0.01	0.04	-0.05	-0.00	0.03
R-squared	0.017	0.005	0.044	0.018	0.036	0.021	0.025	0.018

Sample size = 864.

^{*}

$p < 0.05$;

^{**}

$p < 0.01$.

Note: Three Cs' is a scale consisted of competence, confidence and caring; Character and Connection items do not fit well with this scale.

Table 5

Comparison by parental migration status on school grades and educational aspirations (*OLS regression coefficients*).

	School grades			Educational aspirations		
	Model 1A	Model 2A	Model 3A	Model 1B	Model 2B	Model 3B
Parental migration						
Not-left-behind						
Father-only migration	0.16	0.1	0.16	0.34*	0.3	0.34*
Mother-only migration	0.1	0.04	0.1	0.03	0.01	0.03
Both-parent migration	0.24*	0.12	0.24*	0.30*	0.23	0.30*
Mediators						
Family monthly income		0.19**			0.15*	
Family relative income		0.1			-0.19	
Family monitoring			0.08			0
Family connection			-0.03			0.03
Controls						
Age	-0.14**	-0.11**	-0.14**	-0.20**	-0.20**	-0.20**
Male	-0.52**	-0.54**	-0.50**	-0.35**	-0.36**	-0.34**
Mother's education	0.12	0.09	0.13	0.31**	0.30**	0.31**
Father's education	0.1	0.09	0.09	0.03	0.03	0.03
R-squared	0.08	0.10	0.08	0.06	0.07	0.06

Sample size = 864.

* $p < 0.05$;

** $p < 0.01$.

Table 6

Comparison by parental migration status on self-rated health and No problem behaviors.

	Self-rated health (<i>OLS regression coefficients</i>)			No problem behavior (<i>logistic regression odds ratios</i>)		
	Model 1C	Model 2C	Model 3C	Model 1D	Model 2D	Model 3D
Parental migration						
Not-left-behind	Reference	Reference	Reference	Reference	Reference	Reference
Father-only migration	-0.07	-0.08	-0.07	1.72*	1.68*	1.73*
Mother-only migration	0.33*	0.29*	0.33*	0.76	0.73	0.76
Both-parent migration	-0.12	-0.16	-0.13	0.89	0.84	0.89
Mediators						
Family monthly income		0.01			1.06	
Family relative income		0.37**			1.34	
Family monitoring			0.01			0.98
Family connection			0.03			0.99
Controls						
Age	-0.14**	-0.11**	-0.14**	0.78***	0.79***	0.78***
Male	0.00	-0.01	0.01	0.33***	0.33***	0.33***
Mother's education	0.00	-0.01	0.00	1.24	1.21	1.24
Father's education	0.00	-0.01	0.00	0.94	0.93	0.94
R-squared^a	0.06	0.08	0.06	0.08	0.08	0.09

Sample size = 864.

* $p < 0.05$;** $p < 0.01$.^a Pseudo R-squared for logistic regression models on no problem behavior.