

**Rural-to-Urban Migrant Adolescents in Guangzhou, China:  
Psychological Health, Victimization, and Local and Trans-local Ties**

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## **Rural-to-Urban Migrant Adolescents in Guangzhou, China: Psychological Health, Victimization, and Local and Trans-local Ties**

### **Abstract**

Despite the emerging literature on the health of rural-to-urban migrant children in China, few studies have addressed victimization stressors and stress-buffering mechanisms related to the social relationships that link migrants to their host cities (local ties) and home communities (trans-local ties). This study compared rural-to-urban migrant adolescents and urban native adolescents to examine the relationships between victimization, local and trans-local ties, and mental well-being that might be unique to migrants. Participants were 482 migrant students and 838 urban native students in the eighth grade in Guangzhou who completed a school-based survey in spring 2011. Victimization was associated with suboptimal psychological health in both the migrant and urban native samples. Social ties directly boosted psychological health in both samples, with the effects of trans-local and local ties proving equally important among migrant adolescents. While both local and trans-local ties moderated the effect of victimization on migrant adolescents, that moderation mattered less for urban native youth. These results highlight that a better understanding of victimization stress and how it is affected by the locality of social ties as a coping resource could help to protect the health of young migrants in urban China.

### **Introduction**

Over the past three decades, China's economic reform has given rise to unprecedented levels of rural-to-urban migration. According to the 2010 National Population Census, an estimated 221.43 million rural residents have relocated from the largely poor, agriculture-dominated rural areas of the western and central inland provinces to cities in the eastern coastal region, such as Beijing, Shanghai, Guangzhou, and Shenzhen, in search of better job opportunities (China National Bureau of Statistics, 2011). The rural-to-urban migrant population increased by 82.89% between the 2000 and 2010 censuses.

The vast majority of rural-to-urban migrants are temporary, unable to permanently settle in destination cities due to the persistence of China's household registration (*hukou*) system adopted in the 1950s. The *hukou* system assigns an agricultural (rural) or non-agricultural (urban) residency origin to each individual at birth, tying their rights to the entitlements (or lack thereof) inherent in their *hukou* status (Wu, 2010). Although the system has been subject to revisions in recent years, and some locales offer urban *hukou* to rural migrants who meet stipulated levels of wealth or higher education, it remains very difficult for rural migrants to acquire urban *hukou* and become entitled to social benefits in host cities (Zhang & Treiman, 2013). Internal migration within China is thus characterized by greater institutional barriers to movement than are typical of internal migration settings in which migrants enjoy relative freedom of movement (Tong & Piotrowski, 2012). Additionally, during the early reform period of the 1980s, internal migrants were mainly young adults, but family migration has prevailed since the 1990s. Rather than leave their children behind in their rural home villages (Xiang, 2007), an increasing number of migrant workers encourage their children to join them in the cities. At present, 20.8% of China's internal migrants are school-aged children (Mao & Zhao, 2012).

A growing body of research has documented the stress created by urban migration in China, particularly that resulting from the institutional exclusion of the *hukou* system, and the effect of this stress on the mental health of migrant workers (Chen, 2011; Chen et al., 2011; Jin et al., 2012; Li et al., 2007). This transition is no less stressful for the adolescents who accompany their parents to the cities. Migrant children from rural areas share the fate of their parents in being treated as second-class citizens who are precluded from attaining urban citizenship (Wu, 2010). Consequently, they are denied equal access to subsidized education, health care, and many other social services. A small number of studies, primarily focused on Shanghai, have investigated the mental health of migrant adolescents and have shown that they experience lower self-esteem and exhibit more symptoms of depression, separation anxiety, generalized anxiety, and hostility than their native urban peers (Mao & Zhao, 2012; Wong et al., 2009; Wu et al., 2011). In one study, however, migrant adolescents reported a higher rate of good subjective physical health (Mao & Zhao, 2012). These mixed findings highlight the necessity of further examining the health status of the adolescent migrant population.

Substantively, studying the mental well-being of migrant adolescents in China provides an opportunity to address the gaps in the migration and social stress literature. The social stress paradigm (Lin & Ensel, 1989; Pearlin et al., 2005; Thoits, 1995) has often been applied to theorize the links between socially induced stressors and their suboptimal health consequences for transnational migrants (Noh & Avison, 1996; Vega & Rumbaut, 1991). The social stressors identified among immigrants primarily involve assimilation and acculturation stress, language barriers, identity changes, discrimination, low socioeconomic status, deprivation of upward mobility opportunities, and sense of marginality (Bankston & Zhou, 1997; Kulis et al., 2009; Noh & Avison, 1996; Young, 2001). Nonetheless, victimization stressors have received little attention in migration and social stress studies. What also remains understudied is the distinction between migrants' host community (local) and home community (trans-local) social ties in the moderation of social stress, as the migration and health research generally frames stress-buffering social resources in terms of generic social support (Kulis et al., 2009; Landale & Oropesa, 2001; Young, 2001) and same-ethnic/different-ethnic social support ties emanating in migration destinations (Bankston & Zhou, 1997; Noh & Avison, 1996). An important contribution of this study is the way that it connects the migration, social stress and coping, and victimization literatures. By analyzing the links between victimization, local and trans-local ties, and the psychological health of rural-to-urban migrant adolescents in China, we aim to add to the understanding of how victimization stressors affect the health of migrant populations and the role that the locality of social ties plays in modulating this effect.

### *Victimization stress and migrants' health*

Victimization as a form of social stress is most likely to affect children and adolescents (Macmillan, 2001). The victimization of juveniles can range from minor aggression (e.g., verbal/indirect aggression and peer bullying) to violent aggression (e.g., being robbed by force or assaulted), and it is just as likely to be perpetuated by family members as by acquaintances or strangers (Fagan, 2003). Victimization during adolescence is often associated with negative psychological health outcomes including higher rates of depression, anxiety, post-traumatic stress disorder, and anger (Aceves & Cookston, 2007; Boney-McCoy & Finkelhor, 1995; Hawker & Boulton, 2000; Stadler et al., 2010). As victimization also taxes personal coping resources, it would erode the victim's self-efficacy (Macmillan, 2001) and self-control (Agnew et al., 2011).

Probing victimization stressors and their concomitant health problems in migration is particularly warranted because immigrant youth are at a greater risk of being victimized (Hanish & Guerra, 2000; Le & Wallen, 2009; McKenney et al., 2006). Guided by the conservation of resources theory, which emphasizes the role of resources in maintaining psychological well-being, Hill et al. (2010) posited that certain populations, such as teenagers and ethnic minority immigrants, are particularly vulnerable to the adverse mental health consequences of resource loss that stem from victimization because they are at a disadvantage in terms of resource reserves. Exposure to victimization also increases the health risk behavior of immigrant children (e.g., substance abuse and delinquency) (Le & Wallen, 2009), which is conducive to downward assimilation (Frank et al., 2007). This line of research suggests that rural migrants in urban China are also likely to experience increased rates of victimization and suboptimal health. Nevertheless, research on the prevalence of victimization among rural migrants in China has been scarce.

Some of the available evidence on prejudice against rural migrants in urban China has pointed to a potentially high risk of victimization. These studies have similar findings on status-based stigmatization and unjust treatment among rural migrants, which are found to adversely affect rural migrants' quality of life, mental health status (e.g., somatization, phobic anxiety, and psychoticism), and social capital construction (Chen et al., 2011). Migrants are often blamed for the poor public safety in the cities, and this perception has fuelled urbanites' hostility toward them (Nielsen & Smyth, 2008). Migrant parents and their children are also daunted by the prejudice displayed by local teachers, classmates, and parents (Wu, 2010). Nonetheless, this body of literature, comprising no more than a dozen or so studies, provides a limited basis for determining whether prejudice against migrants translates into victimization.

#### *Social ties as a buffer against victimization stress*

Besides the direct health benefits of social support that have been widely corroborated, one potential pathway that links social support ties to migrant adolescents' health is the moderation of victimization stress. Various social stress and coping models (Lin & Ensel, 1989; Pearlin et al., 2005; Thoits, 1995) concur that social support ties offer a salient psychosocial resource that can lessen the deleterious psychological effects of stressful conditions. With respect to victimization, the psychosocial functions of social ties (e.g., parent-child, school-child, and peer relations) lie in enabling teen victims to reappraise the stress of victimization in light of the knowledge that help and support are available; they are encouraged to seek constructive, problem-focused coping strategies rather than avoidance-focused alternatives to prevent repeated victimization (Aceves & Cookston, 2007; Hill et al., 2010; Stadler et al., 2010).

When investigating migrants' social support ties, it is worthwhile to identify both local and trans-local ties that may further affect the conditions under which the influence of victimization stress on migrant children's health might be mitigated. Although the contribution of social ties has been well discussed in the migration and health literature, few attempts have been made to explicitly distinguish the local ties that link migrants to their host communities from the trans-local ties that link them to their home communities (Jin et al., 2012). Trans-local ties are essential to migrants' social networks. In a recent study of Mexican immigrant families, Donato and Duncan (2011) tested the health benefits of trans-local ties for transnational migrant children in an international migration context. The health of Mexican children living with their immigrant parents in the United States was better

when the immigrant families maintained immediate and extended kin and friendship networks in Mexico. Accordingly, the benefits that migrants gain from social networks do not arise solely from living in close proximity to relatives and friends, but they also stem from people's investments in one another. Beyond the international migration milieu, what has yet to be considered is whether trans-local ties matter in the internal migration setting.

Specific to China's internal migration context, a limited number of studies have used samples of teenage rural-to-urban migrants in Shanghai to investigate the social relationships and mental health of migrant children (Mao & Zhao, 2012; Wong et al., 2009; Wu et al., 2011). These studies have shown that closer ties with parents, teachers, peers, and communities can strengthen migrant teenagers' psychological adjustment by enhancing self-esteem and life satisfaction and lowering the incidence of depression, anxiety, and hostility. Family ties have also been found to benefit migrant adolescents' psychological health most strongly when solid community cohesion exists. Meanwhile, school and peer ties can act as substitutes when social cohesion is lacking in migrants' residential communities (Wu et al., 2011). Despite such insights, these prior studies do not distinguish between locally and trans-locally based social ties of migrant children.

A recent study of adult rural migrants in Shanghai conducted by Jin et al. (2012) did differentiate between local and trans-local ties. They argued that social networks with home communities remain potent in China's migrant population due to the restrictions on permanent settlement in cities under the *hukou* system, the high circular mobility between urban centers and home villages, and the increased access to low-cost telecommunication services in urban and rural regions (Murphy, 2010). More importantly, Jin et al. found that adult migrants' trans-local ties are more consequential to their mental wellness than their local ties in the receiving cities. Trans-local ties serve to anchor migrants' social comparison in the rural communities from which they migrate, which supports the favorable evaluation of their status in cities, lessens the effect of discrimination, and enhances health. However, Jin et al. used the number of close friends and relatives outside the host cities as a proxy for migrants' trans-local ties in their home communities. In other words, they did not directly measure trans-local ties against the home communities. We address that research gap in this study and expect that while migrant teenagers may construct social relations in the host cities, the cultivation of trans-local ties with the origin communities may be equally vital to their well-being, influencing their stress-buffering social resources.

Given the abovementioned background, this study has two objectives. First, we seek to discern the direct effect of victimization on the psychological health of internal migrant adolescents. Second, we compare the effects of local and trans-local ties on psychological health and assess their roles in moderating the effect of victimization stress. To analyze the moderating influence, we hypothesize a positive interaction between victimization and local/trans-local ties, whereby the adverse impact of victimization on psychological health is reduced among migrants with stronger local/trans-local ties. Although we focus on rural-to-urban migrant adolescents, we also include a sample of urban native adolescents. Comparing migrants and urban natives enables us to ascertain possible unique features of victimization experiences, social ties, and mental health among migrant adolescents.

## Methods

### *Study setting*

Data came from the study, “Stuck in the City: Migration and Delinquency among Migrant Adolescents in Guangzhou,” which was undertaken between June 2010 and November 2011. The setting is Guangzhou, the largest city in southern China and the capital of Guangdong province. Guangzhou is among the top three largest urban economies in China, along with Shanghai and Beijing. It has been the leading rural migrant destination since the beginning of China’s reform, and rural migrants currently make up approximately 53% of the city’s population (Li & Li, 2010). It bears mentioning that migrant children who do not have household registration in their receiving cities have difficulty entering publicly funded schools. However, some cities, including Guangzhou, have begun to admit migrant children to public schools if their parents are able to pay the expensive tuition fees. Still, many migrant children in Guangzhou are forced to choose private schools that only admit migrants. While these schools charge lower fees, the teaching and facilities are of a lower standard (Liang & Chen, 2007).

### *Samples*

A stratified cluster sample of the middle schools in Guangzhou was drawn based on the ten administrative urban districts of Guangzhou and the school funding types (public school or private school for migrant children). A total of 22 public schools (with between one and three public schools in each of the ten districts) and 10 private schools for migrant children (from nine of the ten districts, as one district has no schools for migrant children) joined the study. Each participating school then randomly assigned one eighth grade class for data collection, which was conducted in spring 2011. Research assistants administered anonymous, self-report questionnaires to the respondents in classrooms. We excluded migrant students from other cities ( $n = 91$ ) from the analysis. Our analytical sample thus comprised 482 rural-to-urban migrant students (mean age = 14.71) and 838 Guangzhou (urban) native students (mean age = 14.42) from 32 junior high schools. Ethical approval for the study was granted by the Survey and Behavioral Research Ethics Committee of the Chinese University of Hong Kong. Informed consent was obtained from the students and their parents through the coordination of the participating schools.

### *Variables*

#### Psychological health

This measurement was adapted from the K6 scale of psychological well-being. The scale, which was formulated to diagnose cases of non-specific mental illness in the general population, has been used in national surveys conducted under the World Health Organization’s World Mental Health Initiative. It has also been applied to studies of the mental health of adult migrants in China (Jin et al., 2012; Wen et al., 2010). Five items of the K6 scale were used. The respondents were asked how often they felt nervous, hopeless, anxious, depressed, or worthless within the past month (often = 1 to never = 4). Higher scores indicated better psychological health (5-item scale,  $\alpha = 0.87$ ).

#### Victimization

This variable gauged how often the respondents were victimized over the past 12 months (never = 0 to often = 3). Building on prior studies (Agnew et al., 2011; Le & Wallen, 2009), the scale comprised eight items covering minor and severe victimization: having something

stolen by someone; being robbed by someone; being deceived for money or things by someone; being threatened by someone with force to get money or things; being physically assaulted by someone; being teased or insulted by schoolmates; being hit by schoolmates; and being teased or insulted by teachers (8-item scale,  $\alpha = 0.78$ ).

#### Local ties with host community

Local ties were indexed by two kinship measures (parent-child ties and local family ties with relatives) and three non-kinship measures (teacher-child ties, ties with local friends, and neighborhood cohesion) in Guangzhou. Higher scores on these measures represented better local ties. Parent-child ties were gauged by eight questions: “Do your parents show interest in your school life?” (never = 1 to often = 4); “Do your parents engage in leisure activities with you?” (never = 1 to often = 4); “Do your parents take care of your daily needs?” (very poor = 1 to very good = 4); “Do you talk to your parents when you are unhappy?” (never = 1 to often = 4); “Do your parents give you support and encouragement?” (never = 1 to often = 4); “Do your parents understand you?” (not understand at all = 1 to understand very much = 4); “Do you feel satisfied with your communication with your parents?” (very dissatisfied = 1 to very satisfied = 4); and “How is your relationship with parents?” (very poor = 1 to very good = 4) (8-item scale,  $\alpha = 0.87$ ). Local family ties with relatives were measured by one item, which inquired about the number of relatives in Guangzhou with whom the migrant and urban native respondents’ families had regular contact (none = 1 to many = 4).

Regarding the non-kinship measures, the respondents’ relations with their teachers in Guangzhou were captured by five questions: “Are the teachers close to the students?” (none = 1 to most of them = 4); “Do you talk to your teachers?” (never = 1 to often = 4); “Do you think the teachers care about the students?” (not caring at all = 1 to very caring = 4); “Do the teachers treat the students fairly?” (unfairly = 1 to fairly = 4); and “How do you rate your class master teacher?” (very poor = 1 to very good = 4) (5-item scale,  $\alpha = 0.84$ ). To estimate ties with local friends, the respondents were asked: “Do you seek help from friends in Guangzhou?” (never = 1 to often = 4). The neighborhood cohesion variable was constructed based on four statements, rated on a five-point scale (strongly disagree = 1 to strongly agree = 5): “Most people in this neighborhood know each other”; “People in this neighborhood are willing to help each other”; “People in this neighborhood get along well with each other”; and “People in this neighborhood are trustworthy” (4-item scale,  $\alpha = 0.89$ ).

#### Trans-local ties with home community

This measure was migrant-specific and indexed by two variables relating to ties with relatives and friends in the origin community. The migrant respondents were asked to report how often they had been in contact with relatives and friends in their home community while living in Guangzhou (never = 1 to often = 4).

#### Control variables

We controlled for sex, age (in years), and school type (public versus private for migrant children). We also adjusted for standard of living, which we measured by asking the respondents to state how many of 14 amenities (e.g., self-contained kitchen, air-conditioner, computer, motorcycle) were available in their living quarters and what type of housing they lived in (urban village = 1, signifying a marginalized urban slum in Guangzhou; factory dormitory = 2; working class apartment = 3; and middle/upper class apartment = 4). For the migrants, we further considered three correlates of their migration: years of residence in Guangzhou; fluency in the Guangdong dialect (Cantonese) (cannot understand or speak at all

= 1 to understand and speak well = 4); and perceived receptivity of Guangzhou natives to non-natives (not accepted at all = 1 to well accepted = 5).

### *Analysis strategy*

Statistical analyses were performed in Stata 11.2. Missing observations (constituting 0.3% to 5.5% of cases) were imputed using the multiple imputation method (Amelia program) (King et al., 2001). There was potentially non-independence among respondents recruited from the same school, with ICC estimated at 1.89% and 2.60% for the migrant and urban native samples, respectively. If estimators that assume independence among students within the school cluster had been used, we may have underestimated standard errors, rendering the significance tests of parameter estimates invalid. For this reason, all test statistics in this study were corrected for the school clustering effect. Two-sided t and chi-square tests were conducted to compare the responses of internal migrant and urban native adolescents. The variance inflation factor (or the design effect) was included in these tests using Stata's `svyset` command. It considered the increase in between-cluster/school variance by computing the sampling variance of an estimate in a stratified cluster sample divided by the sampling variance that would have been found if a sample of the same size had been selected using simple random sampling (Johnson & Elliott, 1998).

Ordinary least square (OLS) regressions were performed to model the relative contributions of victimization and local and trans-local ties to the continuously measured psychological health outcomes for the migrant and urban native samples. To further assess whether the victimization–psychological health relationship is conditioned by social ties, the interaction terms between the victimization and social ties measures were individually added to the regression models. Because computation of the victimization/social ties interactions requires the use of standardized scores (Aiken & West, 1991), all variables were z-scored and the regressions were run using standardized scores to maintain consistency in the results. To accommodate our nested data and minimize mis-estimation of standard errors, all regression models were based on robust standard errors corrected for intra-school correlation using Stata's clustered robust option (Williams, 2000). Moreover, as the sampled schools were not identified through an explicit random sampling plan, assuming the school clusters to be fixed effects (correlation between the school unobserved effects and the predictors) was preferable to random effects (no correlation) (Wooldridge, 2003). Results of the Hausman test (postestimation option in Stata) further indicated that the school fixed-effects estimator was more consistent than the school random-effects estimator and thus preferred. Hence, we included a dummy variable for each school in all regressions to adjust for the school fixed effects. To ensure that our approach is robust and not sensitive to a different specification of standard error correction for school clustering, we added multilevel (two-level) random-intercept linear analysis (`xtmixed` option in Stata), which assumed school random effects, and compared the results with those of the fixed effects and robust standard error models.

## **Results**

### *Descriptive statistics*

Table 1 presents the sample statistics of the variables stratified by migrant status, without statistically considering any confounders. The reported psychological health of migrant

youth, although insignificant, was better than that of Guangzhou native youth. As expected, migrant students encountered more victimization than their urban native counterparts, but the difference was not statistically discernable. In terms of local ties in Guangzhou, migrant adolescents reported significantly fewer parent-child ties, fewer ties with local friends, and weaker neighborhood cohesion than native adolescents. There were more teacher-child ties among migrants relative to urban natives, but the difference was not significant. However, migrants reported significantly more local family ties with their relatives in Guangzhou compared to urban natives. In terms of trans-local ties, 73% of the migrant adolescents were sometimes or often in contact with relatives in their home community and 27% seldom or never were, whereas 46% sometimes or often contacted friends in their home community and 54% seldom or never did.

[Table 1 about here]

For the socioeconomic status, the households of migrant children possessed fewer amenities. Forty-nine percent of the migrant children lived in urban villages and factory dormitories, 43% in working class apartments, and 8% in middle/upper class apartments. By comparison, 42% of the urban native children lived in urban villages and factory dormitories, 44% in working class apartments, and 14% in middle/upper class apartments. Three-fourths of the migrant respondents studied in private schools and 26% in public schools, whereas the majority (98%) of the urban natives attended public schools. In regard to the migration experience, migrant adolescents had lived in Guangzhou for an average of 8.67 years. About 4% of them could neither understand nor speak the Guangzhou dialect, whereas 12% understood but were unable to speak the dialect. Approximately 9% of the migrant children felt that non-natives were not accepted by Guangzhou natives, whereas 28% felt that the level of acceptance was average.

#### *Main effects of victimization, local ties, and trans-local ties*

Table 2 illustrates how victimization and social ties relate to the mental health of migrant and urban native adolescents in the multiple regressions models. Model 1a represents the migrant sample and Model 1b the native sample. The models included variables common to both samples for comparison. In Model 2a of the migrant sample, the migrant-specific variables related to trans-local ties and migration experience were added to compare the effects of the two types of social ties on migrants.

[Table 2 about here]

As shown in Models 1a and 1b, victimization was the strongest predictor of poor psychological health among migrant adolescents and urban native adolescents, and the coefficients were highly significant at the  $p < 0.001$  level even after considering the other variables. For local ties in the host city, closer parent-child ties, teacher-child ties, and ties with local friends were significantly associated with better psychological health among the migrant respondents, although the coefficient for ties with local friends was only marginally significant. Likewise, the mental health status of the urban native respondents was significantly predicted by parent-child ties, teacher-child ties, and ties with local friends. However, neither local ties with relatives nor neighborhood cohesion in Guangzhou was a significant predictor of the psychological health of the migrant and native adolescents in a multivariate context.

Among the sociodemographic variables, gender and school type were significant for the

migrant sample, with female and private-school migrant adolescents indicating worse mental health than their male and public-school counterparts. The number of household amenities was marginally significant, with fewer amenities generating poorer mental health in migrants. Few of the other variables, such as age and type of housing, predicted the migrants' mental health. Similar to the migrants, the number of household amenities yielded a significant positive association with psychological health in the Guangzhou native sample, and female native youths were significantly more likely than males to report suboptimal psychological health.

In Model 2a, which represents the migrant sample only, the victimization and local ties variables that achieved statistical significance in Model 1a retained their significance, and similar effect sizes were observed even after the inclusion of migrant-specific variables. In relation to trans-local ties, having more contact with friends in the home community significantly improved migrant adolescents' psychological health, yet having contact with relatives in the home community did not. The magnitude of contact with home friends was comparable to those of local parent-child and teacher-child ties, and exceeded that of ties with local friends in Guangzhou. Thus, maintaining trans-local friendship ties is important for migrant adolescents. None of the migration variables (years of residence in Guangzhou, fluency in Cantonese, and perceived receptivity of Guangzhou natives to non-natives) were predictive of the psychological health of young migrants.

#### *Moderation effects*

Tables 3a and 3b for the migrant and urban native samples, respectively, display the results of our interaction analysis, which estimates whether the psychological health effects of victimization are mitigated by the respondents' local and trans-local ties, while controlling for the main effects of the independent variables. Within the migrant sample, we detected four significant interaction effects on the respondents' psychological health in the hypothesized positive direction: between victimization and teacher-child ties in the host community; between victimization and ties with friends in the host community (marginally significant); between victimization and contact with relatives in the home community; and between victimization; and contact with friends in the home community. This means that the migrant respondents who experienced a high level of victimization but had more local ties with teachers/friends and more trans-local ties with relatives/friends, had a higher level of psychological well-being, compared with those who experienced a high level of victimization but had fewer local teacher/friendship ties and fewer trans-local relative/friendship ties. In contrast, for the urban native sample, victimization only interacted significantly with parent-child ties and family ties with local relatives in the expected direction, but the statistical significance of the effects was marginal. No other interaction terms for the native sample were significant. This indicates that social ties mattered less for the urban native respondents in alleviating the health consequence of victimization.

[Tables 3a and 3b about here]

Lastly, we tested the sensitivity of all foregoing results to multilevel random-intercept linear modeling based on the school random-effects assumption, a different standard error specification for clustered data, and the maximum likelihood method for parameter estimation. All predictors and interactions were modeled at the individual/student level (level 1), and including schools in level 2 adjusted for school clustering. Victimization,

social ties measures, and their interactions that were found significant in the OLS models maintained their significant prediction, virtually identical levels of significance, and highly similar magnitudes in the multilevel models for both samples (results tables available from the journal's online supplementary material section). This sensitivity test confirms the robustness of our OLS results obtained using robust standard error correction and school fixed-effects analysis, and excludes the possibility of model mis-estimation due to the hierarchical nature of our data.

## Discussion

Based on the cross-sectional school-based survey data collected in Guangzhou, this study informs the prediction of the psychological health of rural-to-urban migrant adolescents in China by measuring victimization, local ties to the receiving city, and trans-local ties to the home community. We also discern the moderating influence of local and trans-local ties on the link between victimization and psychological health.

Our data suggest that migrant adolescents do not necessarily suffer poorer psychological health than their urban native counterparts. This observation is similar to the findings of previous studies on China's rural adult migrants (Jin et al., 2012; Li et al., 2007; Wen et al., 2010). The "healthy migrant hypothesis," which postulates that healthier individuals tend to migrate (Palloni & Morenoff, 2001), may help us understand this finding. Using the China Health and Nutrition Survey's longitudinal (1997-2009) and migration origin data of migrants and non-migrants (aged 16-35) from eight provinces, Tong and Piotrowski (2012) found evidence of the healthy migrant hypothesis in China; they revealed that internal migrants are positively selected according to health (assessed by subjective health and acute illness conditions). They argued that this health selection is likely to be pronounced in China with its institutionally constrained internal migration because marginal membership and the lack of welfare protection in receiving cities induce high levels of stress that deter migrants who consider themselves to be less healthy. Given these possibilities, we speculate that rural adolescents who migrate with their parents may be healthier. Migrant children may also view their life circumstances more favorably than their counterparts left behind in the home communities, thereby creating relative gratification (Fozdar & Torezani, 2008) and mental health advantages, rather than relative deprivation. The healthy migrant hypothesis merits future investigation in relation to migrant children.

The consistent victimization effect across all of our analyses demonstrates that victimization is a major social stressor and is detrimental to the mental well-being of both migrant and urban native adolescents. While this result shows that victimization occurs among adolescents who are more vulnerable targets, regardless of whether they are migrants, it extends the migration and social stress literature by implicating victimization as a major source of strain for migrants, which has received scant research attention. We by no means intend to suggest that migrants are necessarily the targets of victimization, but assisting migrant children to manage victimization stress can improve their psychological health. We also draw attention to the smaller effect of victimization on migrant adolescents relative to urban native teenagers. A migrant-specific mechanism of protective resilience may explain this finding. Fozdar and Torezani (2008) have noticed that more challenges and greater life stress due to migration may not necessarily compromise migrants' mental functioning; instead, such experiences may hone their personal growth, allowing them to develop a resilience that manifests as eudaimonic well-being (Ryff et al., 2003). Accordingly, in

China, migrant adolescents meeting greater hardship may be more resilient than urban native adolescents, and experiences of victimization stress may not damage migrants' psychological well-being as severely as anticipated. Future research on migration and health should consider victimization stressors and how migrant resilience may offset the negative influence of social stress.

This study also underscores the analytical importance of trans-local ties with the migrants' sending community. Trans-local ties with friends in the home community are as vital as local ties with parents, teachers, and local friends in safeguarding the psychological health of migrant adolescents. Equally important is the finding that social ties not only directly predict mental health but also serve as a moderating mechanism in the victimization–health link that matters far more for migrant adolescents than for their urban native counterparts. Specifically, stronger local ties with their teachers and friends, as well as more trans-local ties with their home relatives and friends, notably dilute the influence of victimization on migrants. Local and trans-local ties also exhibit equally strong moderating effects, implying that both are potent stress-coping resources for migrants. Overall, with respect to the migration and health field, the findings support our expectation that research into the locality of migrants' social ties can enhance knowledge of the stress-buffering mechanisms advanced by the social stress paradigm.

Our results have salient implications for the provision of health care to internal migrant children in urban China. The focus of migrant health care in China has been on infectious diseases, maternal health, and occupational diseases (Hu et al., 2008). The mental health of migrant workers and particularly their children is not yet regarded as a priority (Chen, 2011) despite the growing population of migrant children. As our findings suggest, identifying ways to strengthen the ability to handle social stresses, such as victimization, and enhancing supportive relationships in receiving and origin communities should be integral to mental health promotion efforts among migrant adolescents.

Our study has several limitations worth noting. First, as this is a cross-sectional study, we only present associations. The short duration of observation also means that while we are able to capture the contemporaneous effects of victimization and social ties, we still know little about their long-term causal effects on the health of young migrants. Moreover, retrospective accounts of victimization and perceptions of social relationships may be influenced by pre-existing mental health problems. We are unable to preclude this possibility because our results are based on cross-sectional data. Second, our victimization measure has only eight items. We do not determine different forms of victimization (e.g., verbal/social versus covert, property versus violence) or examine their differential effects on mental health because there may not be sufficient variation in the data to detect statistical significance. Future research should devise a more comprehensive assessment of the various forms of victimization and the characteristics of perpetrators. Third, as this study was conducted in Guangzhou, our findings are by no means generalizable to all migrant-receiving cities in China.

In closing, a key message from this study is that research on migrant children's health needs to recognize victimization as a stressor and differentiate between the types of social ties that migrants have with their receiving and origin communities. A more coherent understanding of how victimization interacts with such coping resources will help to improve the management of health among rural-to-urban migrant adolescents in China.

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Table 1  
Descriptive statistics for rural-to-urban migrant and urban native adolescents in Guangzhou.

	Range	Migrant adolescents (N = 482)		Urban native adolescents (N = 838)		Test statistics <sup>a</sup>	p Value
		Mean / %	(SD)	Mean / %	(SD)		
Psychological health	5 – 20	13.57	(3.92)	13.24	(4.00)	t = 1.13	p = 0.268
Victimization	0 – 24	2.61	(3.25)	2.35	(2.98)	t = 1.00	p = 0.324
Local ties with host community							
Parent-child ties	8 – 32	21.11	(5.05)	22.08	(4.78)	t = 3.72	p = 0.001
Local family ties with relatives	1 – 4	2.98	(0.85)	2.41	(0.89)	t = 3.49	p = 0.001
Teacher-child ties	5 – 20	13.82	(3.31)	13.40	(3.09)	t = 0.44	p = 0.666
Ties with local friends	1 – 4	2.67	(0.85)	3.00	(0.72)	t = 8.15	p = 0.000
Neighborhood cohesion	4 – 20	15.16	(4.10)	15.92	(3.79)	t = 3.08	p = 0.004
Trans-local ties with home community <sup>b</sup>							
Contact with home relatives	1 – 4	3.04	(0.88)	–	–	–	–
Never		6%		–			
Seldom		21%		–			
Sometimes		38%		–			
Often		35%		–			
Contact with home friends	1 – 4	2.39	(0.94)	–	–	–	–
Never		14%		–			
Seldom		40%		–			
Sometimes		32%		–			
Often		14%		–			
Sociodemographics							
Age (years)	12 – 18	14.71	(0.80)	14.42	(0.61)	t = 4.74	p = 0.000
Gender							
Male		57%		52%		$\chi^2 = 4.31$	p = 0.046
Female		43%		48%			
School type							
Public school		26%		98%		$\chi^2 = 222.66$	p = 0.000
Private school for migrant children		74%		2%			
Household amenities (number)	0 – 14	8.73	(2.88)	9.77	(2.35)	t = 3.08	p = 0.004
Housing type							
Urban village		45%		40%		$\chi^2 = 1.55$	p = 0.219
Factory dormitory		4%		2%			
Working class apartment		43%		44%			
Middle/upper class apartment		8%		14%			
Migration variables <sup>b</sup>							
Years of residence in Guangzhou	1 – 18	8.67	(4.43)	–	–	–	–
Fluency in Guangzhou dialect							
Cannot understand or speak at all		4%		–			
Understand but cannot speak		12%		–			
Understand and speak some		39%		–			
Understand and speak well		45%		–			
Perceived receptivity of Guangzhou natives to non-natives	1 – 5	3.78	(0.94)	–	–	–	–
Not accepted at all		2%		–			
Not quite accepted		7%		–			
Average		28%		–			
Quite accepted		39%		–			
Well accepted		24%		–			

<sup>a</sup>T-tests assess the two-sample mean differences of continuous variables. Chi-square tests are used for the categorical variables of gender, school type and housing type. Both tests include the variance inflation factor to account for school clustering.

<sup>b</sup>For the migrant-specific variables, the frequency distributions were listed alongside the mean and standard deviation values.

Table 2

Standardized OLS regression coefficients of main effects of victimization and social ties on psychological health among rural-to-urban migrant and urban native adolescents.<sup>a</sup>

	Migrant adolescents (N = 482)		Urban native adolescents (N = 838)	
	1a	2a	1b	
Victimization	-0.274 (0.246) ***	-0.268 (0.246) ***	-0.337 (0.147) ***	
Local ties with host community				
Parent-child ties	0.140 (0.023) ***	0.141 (0.021) ***	0.184 (0.032) ***	
Local family ties with relatives	0.049 (0.229)	0.054 (0.239)	0.026 (0.113)	
Teacher-child ties	0.163 (0.042) **	0.126 (0.038) **	0.092 (0.040) *	
Ties with local friends	0.046 (0.179) +	0.063 (0.186) +	0.080 (0.147) *	
Neighborhood cohesion	0.033 (0.141)	0.012 (0.144)	0.015 (0.143)	
Trans-local ties with home community				
Contact with home relatives	-	0.010 (0.286)	-	-
Contact with home friends	-	0.103 (0.255) *	-	-
Sociodemographics				
Age	0.010 (0.196)	0.009 (0.194)	0.006 (0.152)	
Gender (1 = male; 2 = female)	-0.177 (0.295) ***	-0.165 (0.312) ***	-0.155 (0.298) ***	
School type (1 = public; 2 = private)	-0.354 (0.443) **	-0.314 (0.439) **	-0.010 (0.570)	
Household amenities	0.058 (0.124) +	0.058 (0.162) +	0.067 (0.182) +	
Housing type	0.016 (0.160)	0.012 (0.155)	0.008 (0.174)	
Migration variables				
Years of residence in Guangzhou	-	-0.023 (0.171)	-	-
Fluency in Guangzhou dialect	-	0.012 (0.198)	-	-
Perceived receptivity of Guangzhou natives to non-natives	-	0.068 (0.208)	-	-
$R^2$	0.230	0.244	0.257	
$F$ -statistics	9.65***	29.88***	40.04***	

<sup>a</sup> All models control for school fixed effects. Robust standard errors clustered by school are in parentheses.  
+ $p < 0.10$ ; \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

Table 3a

Standardized OLS regression coefficients of victimization/social ties interactions on psychological health among rural-to-urban migrant adolescents (N = 482).<sup>a</sup>

	I	II	III	IV	V	VI	VII
Victimization	-0.274 (0.188) ***	-0.276 (0.248) ***	-0.266 (0.193) ***	-0.259 (0.266) ***	-0.267 (0.216) ***	-0.262 (0.161) ***	-0.262 (0.169) ***
Local ties with host community							
Parent-child ties	0.143 (0.020) ***	0.137 (0.022) ***	0.137 (0.020) ***	0.137 (0.021) ***	0.146 (0.020) ***	0.154 (0.019) ***	0.142 (0.020) ***
Local family ties with relatives	0.055 (0.237)	0.056 (0.241)	0.052 (0.233)	0.057 (0.237)	0.056 (0.233)	0.059 (0.234)	0.058 (0.242)
Teacher-child ties	0.127 (0.037) **	0.125 (0.039) **	0.142 (0.035) **	0.127 (0.038) **	0.123 (0.038) **	0.121 (0.036) **	0.130 (0.040) **
Ties with local friends	0.063 (0.182) +	0.065 (0.185) +	0.067 (0.184) +	0.070 (0.186) +	0.065 (0.181) +	0.066 (0.187) +	0.064 (0.183) +
Neighborhood cohesion	0.013 (0.138)	0.015 (0.143)	0.010 (0.139)	0.016 (0.142)	0.015 (0.152)	0.018 (0.143)	0.011 (0.139)
Trans-local ties with home community							
Contact with home relatives	0.008 (0.289)	0.010 (0.283)	0.010 (0.286)	0.009 (0.282)	0.007 (0.285)	0.010 (0.281)	0.008 (0.278)
Contact with home friends	0.103 (0.255) *	0.105 (0.255) *	0.104 (0.252) *	0.106 (0.256) *	0.098 (0.255) *	0.108 (0.254) *	0.104 (0.248) *
Victimization/local ties interaction							
× Parent-child ties	0.055 (0.027)						
× Local family ties with relatives		0.045 (0.234)					
× Teacher-child ties			0.075 (0.016) *				
× Ties with local friends				0.078 (0.166) +			
× Neighborhood cohesion					-0.069 (0.142)		
Victimization/trans-local ties interaction							
× Contact with home relatives						0.111 (0.185) *	
× Contact with home friends							0.086 (0.188) *
$R^2$	0.246	0.245	0.248	0.249	0.248	0.255	0.249
$F$ -statistics	57.38***	43.34***	43.99***	35.91***	34.57***	37.33***	56.47***

<sup>a</sup> All models for migrants control for sociodemographic variables, migration variables, and school fixed effects. Robust standard errors clustered by school are in parentheses.+ $p < 0.10$ ; \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

Table 3b

Standardized OLS regression coefficients of victimization/social ties interactions on psychological health among urban native adolescents (N = 838).<sup>a</sup>

	I	II	III	IV	V
Victimization	-0.333 (0.156) ***	-0.334 (0.155) ***	-0.343 (0.131) ***	-0.343 (0.129) ***	-0.337 (0.146) ***
Local ties					
Parent-child ties	0.182 (0.032) ***	0.183 (0.032) ***	0.184 (0.031) ***	0.183 (0.032) ***	0.185 (0.032) ***
Local family ties with relatives	0.027 (0.112)	0.025 (0.114)	0.025 (0.113)	0.026 (0.112)	0.026 (0.111)
Teacher-child ties	0.092 (0.040) *	0.084 (0.041) *	0.094 (0.039) *	0.091 (0.040) *	0.092 (0.040) *
Ties with local friends	0.079 (0.148) *	0.079 (0.145) *	0.082 (0.146) *	0.079 (0.147) *	0.081 (0.148) *
Neighborhood cohesion	0.016 (0.143)	0.017 (0.143)	0.014 (0.143)	0.015 (0.143)	0.014 (0.141)
Victimization/local ties interaction					
× Parent-child ties	0.018 (0.010) +				
× Local family ties with relatives		0.053 (0.101) +			
× Teacher-child ties			-0.027 (0.028)		
× Ties with local friends				0.017 (0.130)	
× Neighborhood cohesion					-0.026 (0.112)
<i>R</i> <sup>2</sup>	0.259	0.259	0.257	0.257	0.257
<i>F</i> -statistics	46.12***	49.56***	38.19***	50.10***	43.63***

<sup>a</sup> All models for urban natives control for sociodemographic variables and school fixed effects. Robust standard errors clustered by school are in parentheses.+*p*<0.10; \**p*<0.05; \*\**p*<0.01; \*\*\**p*<0.001.