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Experiences of Stigma and Health Service Utilization among Young Rural-to-urban Migrants in China: The Mediation Role of Social Capital

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Abstract

Previous studies revealed that experiences of stigma may negatively affect health service utilization (HSU) among young rural-to-urban migrants. Existing literature also suggested social factors including social capital may mediate such negative effect. However, data are limited regarding the mediation role of social capital among this vulnerable population. Therefore, the current study aimed to examine the associations among experiences of stigma, social capital, and HSU among young rural-to-urban migrants in China. A sample of 641 young rural-to-urban migrants was recruited through a venue-based sampling approach in Beijing, China. Participants were assessed on sociodemographic characteristics, experiences of stigma, and social capital in their urban communities. Self-reported frequency of physical examinations (regularly, irregularly, none) was used as an indicator of HSU. Structural equation modeling (SEM) was performed to examine the direct effect of stigma on HSU as well as the mediation effect of social capital. Among the 641 young rural-to-urban migrants, 32.3% (195/603) reported never having physical examinations while 50.6% (305/603) reported having them irregularly. The final model showed a goodness of fit ($\chi^2/df=1.7$, $CFI=0.98$, $RMSEA=0.03$, $WRMR=0.74$). Results of SEM revealed that both of the direct and indirect paths from experiences of stigma on HSU were statistically significant. There was a partial mediation effect of social capital on the association between experiences of stigma and HSU (delta z score=-5.49, $p<0.01$). Rural-to-urban migrants have a low rate of regular HSU. Experiences of stigma is associated with decreased likelihood of HSU. Social capital in the urban communities can mediate the negative effect of stigma on HSU and plays a mediation role between experiences of stigma and HSU. Therefore, to increase HSU among

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migrants, targeted interventions to reduce stigma and increase social capital at the migration destinations are needed.

Keywords

Stigma; Social capital; Health service utilization; Migrant; China

Introduction

With the implementation of the “open-door” policy in China in the late 1970s and the economic reforms in the middle of the 1980s, urban China had witnessed a rapid growth in economics and modernization (Anderson, Huang, & Ianchovichina, 2003). Such rapid growth in urban China widened the income gap between the urban and rural areas, and attracted a large number of rural residents to migrate to urban centers for economic opportunities and better lives (Anderson et al., 2003). It is estimated that there were more than 200 million rural-to-urban migrants in China in 2016 (China National Bureau of Statistics [CNBS], 2016).

The rural-to-urban migrants were defined as the individuals who move from rural areas to urban centers for jobs without obtaining permanent local household registrations. Because of the existing household registration system in China, it has been difficult for the migrants to change their rural residence to urban residence permanently (Zhang, 2001). Most of these migrants are restricted from seeking legitimate employments in urban areas due to the lack of local household registrations (Li et al., 2006; Li, Stanton, Fang, & Lin, 2005; Roberts, 2001). Consequently, a large number of the rural-to-urban migrants have poor employment conditions, such as having demeaning jobs (e.g., dirty, difficult, and dangerous), long working hours, more working days, and less pay (Li et al., 2006; Li et al., 2007; Roberts, 2001).

Given the lack of urban household registration, low levels of income, and poor employment conditions, rural-to-urban migrants in China often reported having limited access to healthcare resources and low rates of health service utilization (HSU) (Chen, 2006; Hong et al., 2006; Li et al., 2006). A cross-sectional study conducted among 4,208 rural-to-urban migrants in China found that only 19% of them would go to formal clinics when they got sick while 58% of the migrants would do nothing or self-treating (Li et al., 2006). The top three reasons for not seeing a doctor for treatment included excessive cost, limited time, and inconvenience (Li et al., 2006).

Existing studies also suggested other factor, such as social stigma, was associated with limited access to healthcare resources and low rates of HSU (Chen et al., 2011; Li et al., 2007). Stigma is defined as a social undesirable attribute or mark which is used to separate a group of individuals from the mainstream population (Goffman, 1963; Stafford & Scott, 1986). Moving from rural areas to urban centers for better economic opportunities and lives, migrants are characterized as low-educated, incapable, and ill-mannered (Chen et al., 2011; Roberts, 2001). These characteristics may increase the stigma against rural-to-urban migrants. In addition, the dual household registration system (urban vs. rural) causes

inequalities in social status between rural and urban residents (Kuang & Liu, 2012). This divide of socioeconomic status (SES) may further exacerbate the stigma against rural-to-urban migrants.

Experiences of stigma can directly affect access to healthcare resources and HSU among rural-to-urban migrants through three mechanisms (Chen et al., 2011; Wang, Li, Stanton, & Fang, 2010). First, some migrants may be unwilling to visit healthcare facilities because of the fear of being stigmatized by providers or being seen as ill by their employers (Chen et al., 2011). Second, most of the rural-to-urban migrants tend to be isolated and living in the migrant villages within the city given their poor socioeconomic status (Chen et al., 2011). These villages are often away from the healthcare centers and have limited healthcare resources, which may restrict the accessibility of healthcare services among migrants. Third, without having local household registrations, many rural-to-urban migrants were also not entitled to employment-based health insurance or healthcare services available to urban residents, and the costs of medical visit or treatment might further affect their HSU (Hong et al., 2006; Li et al., 2006; Li et al., 2007).

Experiences of stigma may also affect migrants' HSU through its negative effect on the migrants' social capital reconstruction process in the destination communities (Chen et al., 2011). Social capital is defined as a kind of social asset (e.g., social resources, social trust, social connections and interaction), which can empower a group of people to efficiently achieve their goals (Bourdieu, 1985; Chen, Stanton, Gong, Fang, & Li, 2009; Coleman, 1988; Portes, 1998). Due to the lack of local household registration, migrant workers were stigmatized by urban residents (Kuang & Liu, 2012). The stigma against rural-to-urban migrants may impede them from reconstructing social capital in the migration destinations. For instance, a previous study found that the stigma against rural-to-urban migrants undermined migrants' trust in urban residents (Chen et al., 2011). High levels of stigma may lead to low levels of social capital, which in turn may affect the utilization of health service in migration destinations. When migrants perceived or experienced stigma in the destination communities, they might be less willing to seek help from the local residents and to make a full use of healthcare resources that may be available to them (Chen et al., 2011). Besides the stigma pertinent to the household registration and low SES among young migrants, they may perceive stigma related to their sexual risk behaviors, which might further impair their social capital as well as HSU.

Although some studies demonstrated the relationship between experiences of stigma and HSU (Chen et al., 2011; Hong et al., 2006; Turan et al., 2017), limited data are available in this regard among rural-to-urban migrants, especially younger migrants. In addition, there are also few studies investigating the mediation role of social capital on the association between stigma and HSU. To address the literature gaps, the current study explored the associations among experiences of stigma, social capital, and HSU in young rural-to-urban migrants. Based on the existing literature, we hypothesized that: a) experiences of stigma were negatively associated with HSU; and b) social capital might mediate the negative association between stigma and HSU.

Methods

Data source and study sample

The data of this study were derived from the baseline survey of a theory-based HIV behavioral intervention study which was implemented in Beijing, China from 2011 to 2012 (Li et al., 2014). The study aimed at increasing condom use and reducing HIV risk among young rural-to-urban migrants.

The sampling and recruitment procedures were described in detail elsewhere (Li et al., 2014). Briefly, venue-based sampling approach was employed, and young rural-to-urban migrants were recruited from their workplaces (e.g., shops, offices, factories), migrant settlements, streets, and job markets. The inclusion criteria were migrants: a) 30 years of age; b) without a permanent household registration; c) having been in Beijing for at least 3 months; d) being unmarried or if married, not living with their spouse in Beijing; and e) sexually active (e.g., had one or more sexual partners in Beijing). Exclusion criteria included unwillingness to provide informed written consent or unwillingness to be randomized to either of the intervention conditions. Initially, 660 rural-to-urban migrants were recruited but 19 of them were excluded from the program evaluation because they reported an age >30 years on the survey, although they were identified as 30 during the initial screening (Li et al., 2014), resulting in a sample of 641 young migrants in the study.

The questionnaire was administered one-on-one or to small groups in private settings in the community. Interviewers began with a description of the purpose of the assessment and reassurance of confidentiality and a brief instruction on how to mark the answers on the questionnaire. The interviewers provided assistance during the survey upon request. Upon completion, all participants received a small gift equivalent to 2 U.S. dollars as a token of appreciation for their participation. The current study protocol was approved by the Institutional Review Boards at both Wayne State University in the United States and Beijing Normal University in China.

Measures

Socio-demographic characteristics—Participants provided information on socio-demographic characteristics including age, gender, ethnicity (Han or non-Han), marital status (unmarried, unmarried but living together, married, and divorced/widowed/separated), years of being migrant workers in Beijing, years of education, monthly income in Chinese currency Yuan (CNY), frequency of home visit (at least once every six month, once a year, once every two years, once every three or more years, and never), and health status (very good, good, fair, poor, and very poor).

Health service utilization—The frequency of regular physical examinations was used as an indicator of health service utilization (HSU). Participants were asked one question “Did you have any physical examinations?” The question could be responded as “Yes, regularly”, “Yes, but irregularly”, and “None”.

Experiences of stigma—Experiences of stigma were assessed with a 20-item scale which has been validated among Chinese migrants (Lin et al., 2011). This scale measures

discriminatory acts or unfair treatment experienced or perceived by participants during work and life. The sample item included “When I look for a job, I do not have the same opportunity as others” and “If something got lost, people will first suspect me”. Items were scored from 1 (never happened) to 4 (frequently happened). The total score ranged from 20 to 80 with a higher score indicating a greater level of stigma. Internal consistency estimate (Cronbach alpha) for this scale in the current study was 0.94.

Social capital—Social capital was assessed with a 14-item scale which measures three following factors: trust (social trust with local residents), norm (perceived generalized norms and neighborhood connections), and interaction (social interaction with local residents) (Chiu, Hsu, & Wang, 2006). Four items (Cronbach alpha=0.75) were used to measure “trust” (e.g., when you encounter difficulties in Beijing, who is willing to help you?). Items were scored on a 4-point scale (1=no friends anywhere; 2=people from hometown; 3=migrants from other places; 4=Beijing local residents) with higher values indicating migrants have more “trust” in Beijing. Five items (Cronbach alpha=0.63) were used to measure “norm” (e.g., in your neighborhood, how well do people get along with each other?). Items were scored from 1 (not well at all) to 4 (very well) with higher values indicating migrants tend to conform more to the norm of reciprocity and establish more neighborhood connections in Beijing. Social interaction was measured with five items (e.g., who is most likely to enjoy leisure activities with you? Cronbach alpha=0.80). Items were scored on a 5-point scale (1=never have these activities; 2=family or relatives; 3=people from hometown; 4=migrants from other places; 5=Beijing local residents). High values indicated more social interaction in Beijing. In this study, the Cronbach alpha for the 14 items was 0.77. Total score of the aforementioned three factors was used as a composite score for social capital. The composite score ranged from 14 to 61, with higher values indicating higher levels of social capital in Beijing.

Statistical analysis

First, descriptive statistics were reported on sociodemographic characteristics (e.g., age, gender), HSU, experiences of stigma, and social capital. *Mean (Standard deviation, SD)* was used to describe continuous variables (e.g., age, years of being migrant workers in Beijing), and *frequencies (percentages)* were used to describe categorical variables (e.g., gender, health status). Normality tests were conducted to examine whether experiences of stigma and social capital were normally distributed. If the variables of interest were skewly-distributed, robust maximum likelihood method (estimator=MLR in Mplus) would be used to estimate the parameters of measurement model in confirmatory factor analysis (CFA). In the current study, missing values were handled using multiple imputations for all variables except the dependent variable (e.g., HSU).

Second, bivariate analyses were performed to examine the relationships of HSU with sociodemographic characteristics, experiences of stigma as well as social capital. *ANOVA* tests were used to examine the relationships between continuous variables and HSU, *Chi-square* tests for the relationships between categorical variables and HSU. *Spearman* correlation analyses were performed to examine the associations among experiences of stigma, social capital, and HSU.

Third, SEM was performed to examine the hypothesized associations among experiences of stigma, social capital, and HSU. In the measurement model, the average scores of trust, norm, and interaction were considered as the indicators of social capital. Item parcel approach was used to separate the stigma scale into three parcels named as “S1”, “S2”, and “S3”, and the mean scores of parcels of stigma were considered as the indicators of latent variable (Matsunaga, 2008). Modification indices were used to guide the improvement of model fit when necessary.

In the structural model, the direct and indirect effects from experiences of stigma to HSU were examined by using bias-corrected bootstrap procedure based on 1000 bootstrap samples (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Because HSU was an ordinal outcome, the structural model was tested by using robust weighted least squares (WLS) approach (estimator=WLSMV in Mplus). Bias-corrected confidence intervals for the direct and indirect paths were reported (Shrout & Bolger, 2002). As delta method is used as a default approach to examine mediation effect in Mplus software, delta z score and p value were used to evaluate the mediation effect of social capital (Muthen & Muthen, 2018). Only sociodemographic characteristics that were significantly associated with HSU in the final model were included as covariates in the SEM.

Multiple indices were used to evaluate goodness of fit of measurement and structural models in the current study. These indices included χ^2/df , *Comparative Fit Index (CFI)*, *Root Mean Square Error of Approximation (RMSEA)*, *Standardized Root Mean Square Residual (SRMR)*, and *Weighted Root Mean Square Residual (WRMR)*. $\chi^2/df < 3$, $CFI > 0.95$, $RMSEA < 0.06$, $SRMR < 0.08$, and $WRMR < 1.00$ indicate a good model fit (Wang & Wang, 2012).

Descriptive statistics, bivariate analyses, and correlation analyses were performed using SAS software version 9.4 (SAS Institute, Inc., Cary, NC). CFA and SEM were performed using Mplus version 7.0 (Muthen & Muthen, Los Angeles, CA).

Results

Descriptive statistics

Participants' sociodemographic characteristics are shown in Table 1. The *mean (SD)* age of the participants was 24.1 (3.3) with a range from 17 to 30 years. More than half of the individuals were male (58.7%, 376/641) and unmarried (60.4%, 387/641). The majority (95.9%, 615/641) of the participants were of Han ethnicity. The *mean (SD)* years of being migrant workers in Beijing and education were 3.6 (2.5) and 10.1 (2.5), respectively. About two-thirds (61.2%, 392/641) of the participants visited their hometown once a year. More than two-thirds (77.9%, 499/641) of the migrants reported being in good health status.

Nearly one-third of the participants (32.3%, 195/603) reported never having any physical examinations while more than half (50.6%, 305/603) of the participants reported having physical examinations irregularly. The *mean (SD)* scores of experiences of stigma and social capital were 30.7 (10.2) out of a maximum score 80 and 34.4 (6.0) out of a maximum score 61, respectively. According to the tests for normality, both experiences of stigma (Shapiro-

Wilk=0.89, $p<0.01$) and social capital (Shapiro-Wilk=0.99, $p<0.01$) were skewly-distributed. Thus, robust maximum likelihood method would be employed to estimate the parameters of measurement model in CFA.

Bivariate and correlation analyses

Table 2 shows the bivariate analyses of HSU with sociodemographic characteristics, experiences of stigma as well as social capital. Results of bivariate analyses indicated that HSU was significantly associated with age, gender, marital status, years of being migrant workers in Beijing, years of education, monthly income, and frequency of home visit.

In addition, the associations among experiences of stigma, social capital, and HSU were statistically significant. Results of bivariate analyses and correlation analyses indicated that HSU was significantly associated with experiences of stigma (correlation coefficient=-0.30, $p<0.01$) and social capital (correlation coefficient=0.27, $p<0.01$) (Table 3).

Measurement model

At first, results of CFA suggested that the fit of measurement model of stigma and social capital was unsatisfactory ($\chi^2/df=7.0$, $CFI=0.95$, $RMSEA=0.10$, $SRMR=0.06$). According to the modification indices, one path between “trust” and “interaction” indicators of social capital was added, then the modified (and final) measurement model showed a good fit ($\chi^2/df=1.3$, $CFI=1.00$, $RMSEA=0.02$, $SRMR=0.03$). The inclusion of such a path between “trust” and “interaction” was also supported by previous literature that suggested correlations among three components (i.e., trust, interaction, norm) of social capital (Chiu et al, 2006). All the factor loadings in the final measurement model were statistically significant. The standardized factor loadings of the final measurement model are shown in Figure 1.

Structural model

Adjusting for the sociodemographic characteristics that were significantly associated with HSU, results of SEM indicated a good fit for the final SEM ($\chi^2/df=1.7$, $CFI=0.97$, $RMSEA=0.03$, $WRMR=0.76$). Experiences of stigma were negatively associated with both social capital (standardized path coefficient=-0.35, $p=0.03$) and HSU (standardized path coefficient=-0.20, $p<0.01$). Social capital was positively associated with HSU (standardized path coefficient=0.32, $p=0.02$). The path coefficients of the final SEM are shown in Table 4.

Mediation analysis

Results of mediation analysis indicated that both of the direct and indirect paths from experiences of stigma to HSU were statistically significant. There was a partial mediation effect of social capital on the relationship between experiences of stigma and HSU (delta z score=-5.49, $p<0.01$). Results of mediation analysis are shown in Table 5. The final mediation model is shown in Figure 1.

Discussion

Using structural equation modeling, the current study examined the associations of HSU with experiences of stigma and social capital among young rural-to-urban migrants. The results showed that rural-to-urban migrants reported a low level of regular HSU. Results of SEM revealed that experiences of stigma were negatively associated with HSU and social capital could mediate the negative relationship between stigma and HSU. To the best of our knowledge, this is one of the first studies to examine the mediation role of social capital on the association between experiences of stigma and HSU among young rural-to-urban migrants.

The proportion of never having any physical examinations among young rural-to-urban migrants in the current study (32.3%) was higher than that of another study (20.3%) among 2,478 migrant workers in Beijing, China (Peng, Chang, Zhou, Hu, & Liang, 2010). The possible reason for this difference is the different age ranges of the participants in the two studies. The participants in the current study were young rural-to-urban migrants no more than 30 years old while the migrants in Peng's study aged from 15 to 65 years old. Those older migrants might be more likely to have physical examinations due to their increased aging-related health concerns (Peng et al., 2010). As a matter of fact, our data also suggested that older migrants were more likely to have some or regular physical examinations (data were not showed but available upon request). With the increase of age, migrant workers may have more health problems and would be more likely to have regular physical examinations to monitor their health status in urban areas (Sun et al., 2014). In addition, among those young rural-to-urban migrants who reported having physical examinations in the current study, only 25.3% (103/408) of the migrants reported having them regularly. Male migrants who were in Beijing for a longer time were more likely to have regular physical examinations. The possible explanation is that these "long-term" migrants may have a more stable living arrangement, better employment conditions, and better social capital (Hong et al., 2006; Li et al., 2006). These factors may increase their access and utilization of healthcare resources in urban areas.

The current study confirmed our hypothesis that experiences of stigma may also affect migrants' HSU through its influence on social capital reconstruction. Rural-to-urban migrants need to reconstruct their social capital in order to integrate into the urban areas and utilize social resources at their migration destinations. However, the experiences of stigma may create barriers for reconstructing social capital among migrants. Limited social capital may restrict rural-to-urban migrants from getting access to healthcare resources and utilizing healthcare services. Instead, better social capital may alleviate the negative effects of stigma on HSU. With the reconstruction of social capital, migrants can develop trusting relationships with urban residents and have more interactions with them, which in turn may increase migrants' willingness to seek help from local residents and their utilization of healthcare services (Chen et al., 2011; Hong et al., 2006).

To increase the likelihood of HSU among rural-to-urban migrants and help them get better access to healthcare resources, targeted interventions to reduce stigma and help with the process of reconstructing social capital at migration destinations are needed. At societal

level, structural efforts should be made to reduce stigma against rural-to-urban migrant workers. Migrant workers have made a significant contribution on China's urban development and economic growth in the past decades, but these contributions are not fully recognized by society (Li et al., 2007; Wang et al., 2010). Instead, this population is often stigmatized by the urban residents and restricted from better occupational opportunities because of the dual household registration systems (i.e., urban vs. rural) in China (Li et al., 2007). Therefore, future public education among urban residents to improve their recognition about the contribution that migrant workers have made towards the socioeconomic development in urban areas may help to reduce stigma against rural-to-urban migrants (Li et al., 2007). In addition, policies efforts should also be made to reduce the restrictions of employment and lives against rural-to-urban migrants and help them get involve in the community-based activities, which may be helpful to increase their interactions with local urban residents and reconstruct social capital in their communities (Brune & Bossert, 2009; Wang et al., 2010). At an individual level, psychological counseling and interventions are needed to help rural-to-urban migrants cope with stigma, reconstruct social capital, and integrate to the society of urban areas (Wang et al., 2010).

The current study has several limitations. First, only one variable was used as an indicator of HSU. In addition, the indicator of HSU did not have time frame. This would threaten the construct validity of this measurement and the internal validity of this study. Second, the causal relationships cannot be warranted with the cross-sectional data. Third, all outcome measures were self-reported and subject to recall bias and social desirability bias. Due to social desirability and the intervening aspects of intervention trial, the self-reported outcome (health service utilization) might be overestimated. Four, two dimensions (trust and interaction) of social capital had relatively low factor loadings (e.g., 0.11 and 0.24) which could be improved in the future research. Fourth, the intervention trial was conducted from 2011 to 2012, and dataset was somewhat dated. However, the associations among stigma, social capital, and HSU might not change with time increase. Finally, the participants were recruited from one urban district in Beijing and might be not representative of other migrant populations in China. Therefore, caution should be given when generalizing the results from the current study to other migrant populations elsewhere.

Despite these limitations, the current study found that rural-to-urban migrants had a high level of never having HSU and low level of regular HSU. We provided preliminary data on the associations among experiences of stigma, social capital, and HSU in young rural-to-urban migrants and suggested that social capital could mediate the negative influences of stigma on HSU. To help migrants get access to healthcare resources and utilize healthcare services in urban areas, targeted interventions focusing on reducing experiences of stigma and increasing social capital are needed.

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References

- Anderson K, Huang J, & Ianchovichina E (2003). "Long-run Impacts of China WTO Accession on Farm-nonfarm Income Inequality and Rural Poverty (World Bank Policy Research Working Paper #3052). Washington, DC: World Bank.
- Bourdieu P (1985). The Form of Capital In: Richardson J, editor. Handbook of Theory and Research for the Sociology of Education. Greenwood Press; New York: 1985, p: 241–258.
- Brune N, & Bossert T (2009). Building Social Capital in Post-conflict Communities: Evidence from Nicaragua. *Soc Sci Med*, 68(5), 885–893. doi:10.1016/j.socscimed.2008.12.024. [PubMed: 19155112]
- Chen W (2006). Comments on the Papers "Health Indicators and Geographic Mobility among Young Rural-toUrban Migrants in China" and "Too Costly To Be Ill: Healthcare Access and Health-Seeking Behaviours among Rural-to-Urban Migrants in China". *World Health Popul*, 2006: 4–4. doi:10.12927/whp.2006.18281.
- Chen X, Stanton B, Gong J, Fang X, & Li X (2009). Personal Social Capital Scale: An Instrument for Health and Behavioral Research. *Health Educ Res*, 24(2), 306–317. doi:10.1093/her/cyn020. [PubMed: 18469318]
- Chen X, Stanton B, Kaljee L, Fang X, Xiong Q, Lin D, Zhang L, Li X (2011). Social Stigma, Social Capital Reconstruction and Rural Migrants in Urban China: A Population Health Perspective. *Hum Organ*, 70(1), 22–32. [PubMed: 21516266]
- Chiu C, Hsu M, & Wang E (2006). Understanding Knowledge Sharing in Virtual Communities: An Integration of Social Capital and Social Cognitive Theories. *Decision Support Systems*, 42(3), 1872–1888. doi:10.1016/j.dss.2006.04.001.
- China National Bureau of Statistics (CNBS) (2016). CNBS News Release. Beijing, China: 2016 Characteristics of Chinese Rural Migrants: 2016.
- Coleman J (1988). Social Capital in the Creation of Human-Capital. *American Journal of Sociology*, 94, 95–120.
- Du H, Li X, & Lin D (2014). Individualism and sociocultural adaptation: Discrimination and social capital as moderators among rural-to-urban migrants in China. *Asian journal of social psychology*, 18(2), 176–181. doi:10.1111/ajsp.12085
- Du H, Li X, Lin D, & Tam C (2014). Cultural Orientation and Social Capital as Predictors of Condom Use among Internal Migrants in China. *Health Education Journal*, 75(1), 61–71. doi:10.1177/0017896914563321.
- Goffman E (1963). *Stigma: Notes on the Management of Spoiled Identity*. Englewood Cliffs, NJ: Prentice Hall; 1963.
- Hong Y, Li X, Stanton B, Lin D, Fang X, Rong M, & Wang J (2006). Too Costly To Be Ill: Healthcare Access and Health-Seeking Behaviours among Rural-to-Urban Migrants in China. *World Health Popul*, 8(2), 22–34. [PubMed: 18277099]
- Kuang L, & Liu L (2012). Discrimination against Rural-to-urban Migrants: the Role of the Hukou System in China. *PLoS One*, 7(11), e46932. doi:10.1371/journal.pone.0046932. [PubMed: 23144794]
- Li X, Stanton B, Chen X, Hong Y, Fang X, Lin D, Mao R, Wang J (2006). Health Indicators and Geographic Mobility among Young Rural-toUrban Migrants in China. *World Health Popul*, 8(2), 5–21. [PubMed: 18277098]
- Li X, Stanton B, Fang X, & Lin D (2005). Social Stigma and Mental Health among Rural-to-Urban Migrants in China: A Conceptual Framework and Future Research Needs. *World Health Popul*, 8(3), 14–31.
- Li X, Zhang L, Fang X, Xiong Q, Chen X, Lin D, Mathur A, Stanton B (2007). Stigmatization Experienced by Rural-to-urban Migrant Workers in China: Findings from A Qualitative Study. *World Health Popul*, 9(4), 29–43. [PubMed: 18567950]

- Li X, Lin D, Wang B, Du H, Tam C, & Stanton B (2014). Efficacy of Theory-Based HIV Behavioral Prevention among Rural-to-Urban Migrants in China: A Randomized Controlled Trial. *AIDS Educ Prev*, 26(4), 296–316. doi:10.1521/aeap.2014.26.4.296. [PubMed: 25068178]
- Lin D, Li X, Wang B, Hong Y, Fang X, Qin X, & Stanton B (2011). Discrimination, Perceived Social Inequity, and Mental Health Among Rural-to-Urban Migrants in China. *Community Ment Health J*, 47(2), 171–180. doi:10.1007/s10597-009-9278-4. [PubMed: 20033772]
- MacKinnon D, Lockwood C, Hoffman J, West S, & Sheets V (2002). A Comparison of Methods to Test Mediation and other Intervening Variable Effects. *Psychol Methods*, 7(1), 83–104. [PubMed: 11928892]
- Maneze D, Salamonson Y, Poudel C, DiGiacomo M, Everett B, & Davidson P (2016). Health-Seeking Behavior of Filipino Migrants in Australia: The Influence of Persisting Acculturative Stress and Depression. *J Immigr Minor Health*, 18(4), 779–786. doi:10.1007/s10903-015-0233-x. [PubMed: 26050239]
- Matsunaga M (2008). Item Parceling in Structural Equation Modeling: A Primer. *Communication Methods and Measures*, 2(4), 260–293. doi:10.1080/19312450802458935.
- Muthen L, Muthen B (2017). *Mplus User's Guide*. Eighth Edition. Los Angeles, CA: Muthen & Muthen.
- Peng Y, Chang W, Zhou H, Hu H, & Liang W (2010). Factors associated with Health-seeking Behavior among Migrant Workers in Beijing, China. *BMC Health Serv Res*, 10:69. doi:10.1186/1472-6963-10-69. [PubMed: 20298613]
- Portes A (1998). Social Capital: Its Origins and Applications in Modern Sociology. *Annual Review of Sociology*, 24, 1–24.
- Roberts K (2001). The Determinants of Job Choice by Rural Labor Migrants in Shanghai, China. *Economic Review*, 12(1), 15–39. doi:10.1016/S1043-951X(01)00041-4.
- Shrout P, & Bolger N (2002). Mediation in Experimental and Nonexperimental Studies: New Procedures and Recommendations. *Psychol Methods*, 7(4), 422–445. [PubMed: 12530702]
- Stafford M, & Scott R (1986). Stigma Deviance and Social Control: Some Conceptual Issues In: *The Dilemma of Difference: A Multidisciplinary View of Stigma*. New York: Plenum; 1986, p:77–91.
- Sun X, Chen Y, Tong X, Feng Z, Wei L, Zhou D, Tian M, Lv B, Feng D (2014). The Use of Annual Physical Examinations among the Elderly in Rural China: A Cross-Sectional Study. *BMC Health Serv Res*, 14:16. doi:10.1186/1472-6963-14-16 [PubMed: 24423046]
- Thi M (2017). Social Capital, Migration and Social Integration. *Proceeding of the 3rd International Conference on Education*, 3: 353–363.
- Turan B, Budhwani H, Fazeli P, Browning W, Raper J, Mugavero M, & Turan J (2017). How Does Stigma Affect People Living with HIV? The Mediating Roles of Internalized and Anticipated HIV Stigma in the Effects of Perceived Community Stigma on Health and Psychosocial Outcomes. *AIDS Behav*, 21(1), 283–291. doi:10.1007/s10461-016-1451-5. [PubMed: 27272742]
- Wang B, Li X, Stanton B, & Fang X (2010). The Influence of Social Stigma and Discriminatory Experience on Psychological Distress and Quality of Life among Rural-to-urban Migrants in China. *Soc Sci Med*, 71(1), 84–92. doi:10.1016/j.socscimed.2010.03.021. [PubMed: 20403653]
- Wang J, & Wang X (2012). *Structural Equation Modeling: Applications using Mplus*. New York: John Wiley, p: 17–21.
- Zhang L (2001). Migration and Privatization of Space and Power in Late Socialist China. *American Ethnologist*, 28(1), 179–205. doi:10.1525/ae.2001.28.1.179.

Figure 1.

Final model of experiences of stigma, social capital, and HSU among young rural-to-urban migrants ($n = 603$). All factor loadings were significant at $p < 0.05$ level. *: $p < 0.05$; **: $p < 0.01$; ***: $p < 0.001$. HSU: health service utilization; S1-S3: parcels of experiences of stigma. Age, monthly income, and marital status which were significantly associated with HSU in bivariate analyses were adjusted as covariates in the SEM.

Table 1.

Sociodemographic characteristics among young rural-to-urban migrants

Variables	Total (%)
<i>N</i> (%)	641 (100.0)
Age (<i>Mean, SD</i>)	24.1 (3.3)
Gender (%)	
Male	376 (58.7)
Female	265 (41.3)
Ethnicity (%)	
Han	615 (95.9)
Non-Han	26 (4.1)
Marital status (%)	
Unmarried	387 (60.4)
Unmarried but living together	47 (7.3)
Married	205 (32.0)
Divorced, widowed, or separated	2 (0.3)
Years of being migrant workers in Beijing (<i>Mean, SD</i>)	3.6 (2.5)
Years of education (<i>Mean, SD</i>)	10.1 (2.5)
Mean monthly income in CNY (<i>Mean, SD</i>)	2423.5 (1185.8)
Frequency of home visit (%)	
At least once every 6 mo.	159 (24.8)
Once a year	392 (61.2)
Less than once a year	90 (14.0)
Health status (%)	
Very good	264 (41.2)
Good	235 (36.7)
Fair	123 (19.1)
Poor or very poor	19 (3.0)
Health service utilization (%)	
Regularly	103 (17.1)
Irregularly	305 (50.6)
None	195 (32.3)
Stigma (<i>Mean, SD</i>)	30.7 (10.2)
Social capital (<i>Mean, SD</i>)	34.4 (6.0)

Table 2. Bivariate analysis of health service utilization ($n=603$)

	Health service utilization			<i>p</i>
	Regularly (<i>n</i> =103)	Irregularly (<i>n</i> =305)	None (<i>n</i> =195)	
Age (Mean, SD)	25.8 (3.1)	24.2 (3.1)	23.2 (3.3)	<0.01 ^a
Gender (%)				<0.01 ^b
Male	77 (74.8)	158 (51.8)	118 (60.5)	
Female	26 (25.2)	147 (48.2)	77 (39.5)	
Ethnicity (%)				0.17 ^b
Han	102 (99.0)	289 (94.8)	187 (95.9)	
Non-Han	1 (1.0)	16 (5.3)	8 (4.1)	
Marital status (%)				0.05 ^b
Unmarried	52 (50.5)	188 (61.6)	124 (63.6)	
Unmarried but living together	15 (14.6)	18 (5.9)	12 (6.2)	
Married	35 (34.0)	98 (32.1)	59 (30.3)	
Divorced, widowed, or separated	1 (1.0)	1 (0.3)	0 (0.0)	
Years of being migrant workers in Beijing (Mean, SD)	3.8 (2.1)	3.9 (2.7)	3.1 (2.3)	<0.01 ^a
Years of education (Mean, SD)	9.9 (2.5)	10.5 (2.5)	9.6 (2.4)	<0.01 ^a
Mean monthly income in CNY (Mean, SD)	2288.4 (1084.9)	2222.6 (111.8)	2903.7 (1286.8)	<0.01 ^a
Frequency of home visit (%)				<0.01 ^b
At least once every 6 mo.	30 (29.1)	83 (27.2)	41 (21.0)	
Once a year	39 (37.9)	194 (63.6)	133 (68.2)	
Less than once a year	34 (33.0)	28 (9.2)	21 (10.8)	
Health status (%)				0.08 ^b
Very good	44 (42.7)	110 (36.0)	93 (47.7)	
Good	36 (35.0)	121 (39.7)	65 (33.3)	
Fair	17 (16.5)	67 (22.0)	31 (15.9)	
Poor or very poor	6 (5.8)	7 (2.3)	6 (3.1)	
Stigma (Mean, SD)	25.6 (6.4)	29.9 (9.9)	34.4 (11.1)	<0.01 ^a
Social capital (Mean, SD)	36.7 (5.2)	35.2 (5.5)	31.8 (6.5)	<0.01 ^a

Note:

^a: ANOVA test;^b: Chi-square test.

Table 3.

Correlation matrix

	Health service utilization	Stigma	Social capital
Health service utilization	1.00		
Stigma	−0.30 ***	1.00	
Social capital	0.27 ***	−0.17 ***	1.00
S.E.	0.69	0.51	6.02

Note:

, $p < 0.01$;*, $p < 0.001$;

S.E.: Standard error.

Table 4. Path coefficients ($n=603$)

Paths	β	<i>Std. β</i>	95% <i>C.I.</i>	<i>S.E.</i>	<i>p-value</i>
Stigma--»Social capital	-0.04	-0.35	-0.09~-0.01	0.02	0.03
Social capital--»Health service utilization	5.14	0.32	2.66~26.67	2.25	0.02
Stigma--»Health service utilization	-0.40	-0.20	-0.55~-0.22	0.09	<0.01

Note: *Std. β* : Standardized estimate; *C.I.*: Confidence interval; *S.E.*: Standard error.

Table 5. Results of mediation analyses ($n=603$)

Effects	β	Std. β	95% C.I.	S.E.	p-value
Total effect	-0.62	-0.32	-0.78~-0.46	0.09	<0.01
Indirect effect	-0.23	-0.11	-0.34~-0.14	0.04	<0.01
Direct effect	-0.40	-0.20	-0.55~-0.22	0.09	<0.01

Note: Std. β : Standardized estimate; C.I.: Confidence interval; S.E.: Standard error.