

Understanding the Mental Health Status of Migrant Workers in China¹

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Abstract

After the series of suicides committed by workers in electronic manufacturing factories in China, the mental health status of rural to urban migrant workers in Chinese cities began to attract increasing scholarly attentions. Using the 2010 survey of migrant workers in Pearl River Delta and Yangtze River Delta, this study examines the effects of working conditions, residential environment, and victimization on the mental well being of migrant workers. It further analyzes whether higher educational level boosts or buffers the relationship between these risk factors and mental health. The results show that poor living and working conditions and crime victimization have negative influence on migrant workers' psychological health. However, most working conditions only affect migrant workers with less than high school education, but have no influence on those who have a high school degree or above.

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During the year of 2010, a total of 14 young migrant workers have committed suicides in plants of Foxconn, the world's largest electronic outsourcing manufacturer, in different cities of mainland China. This human tragedy quickly became the focus of the world news and mental health problems among the new generation of migrant workers began to attract the attention of government officials, entrepreneurs, scholars and the public. The suicides raised heated discussions about the causes of mental illness among rural-to-urban migrant workers. Is it due to the factory's militarized management style or the worker's personal characteristics? How much impact do economic pressure, working conditions or residential environment have on migrant workers' mental health status? Are the mental health issues resulted from social exclusion of rural migrants in Chinese cities? How could policies be modified to assist migrant workers to be assimilated into urban society?

Many recent studies on the mental health status of migrant workers in China are in the fields of medical science, epidemiology, and psychology. Most of these studies are descriptive and only focus on a narrow range of risk factors, mainly demographic characteristics and socioeconomic status (Gong et al. 2008; Jiang, Zhang and Wang 2007; Li et al. 2007; Wong et al. 2008). After the series of suicides at Foxconn occurred in 2010, Chinese sociologists began to join the discussion about migrant worker's mental health and attempted to explore the influence a wider scope of social factors, including social capital (Hu and Chen 2012; Liu 2011), working conditions (Liu, Zheng and Sun 2011; Liu 2011), migration stress (including cultural shock, difficulties of integration, and economic pressure) (He, Huang and Zeng 2010; Liu 2011), and the perceived meaning of migration (He, Huang and Zeng 2010; Wong et al. 2008). However, the existing studies tend to be small-scale and at a single location and focus only on a subset of influencing factors. There has not been any previous study examining the influence of residential environment and unexpected life shocks, such as victimization, on migrant worker's mental health status. Some people suspect

that highly educated migrant workers are more likely to be unsatisfied with working and living circumstances and have stronger sense of unfairness. However, no study has examined whether higher educational attainment intensifies the harm of daily stressors and negative life events to mental well being.

To fill the gap in the literature, this study examines roles of working conditions, residential environment, and victimization in influencing migrant workers' psychological well-being using the Survey of Migrant Workers in Pearl River Delta (PRD) and Yangtze River Delta (YRD) in 2010. In addition, this study aims to examine the moderating effect of education on the relationship between different stressors and mental health. It is unclear whether educational attainment increase or reduce the negative relationship between the stressors and mental health.

This following sections first review recent literature on theoretical perspectives and empirical studies related to migrant workers' mental health. Then, multivariate regression models are estimated to predict mental health status measured by GHQ-12 (General Health Questionnaire). Multivariate models disaggregated by educational levels are used to examine whether education has a buffering or boosting effect on the relationship between stressors and psychological well being. Finally, implications for China's internal migration policies are discussed according to the findings of this study.

Literature Review

Since the end of 1980s, surplus labors in rural China have started migrating to cities on a massive scale. The number of inter-county temporary migrants has increased from 22 million in 1990 to 79 million in 2000, and then reached 221 million in 2010 (Liang and Ma 2004; NBS 2011). Restricted by their educational levels and skills, migrant workers in Chinese cities usually take low-status and low-paid jobs in economic sectors such as

manufacturing, construction, service, and hotels and restaurants (Huang and Zhan 2005; Wang, Zuo and Ruan 2002). Their jobs are usually physically demanding and distained by local residents. Many of them work long hours (>10 hours a day and 6 or 7 days a week) and receive very low wages (Li et al. 2007). Since a majority of migrant workers are not registered as local residents according to the *hukou* system, they are not entitled to enjoy the benefits available to local residents, such as subsidized housing, social security, medical care and children's education. Harsh working conditions, unequal treatment, discrimination, and the lack of social support would make migrant workers feel excluded, insecure, and unfair, which further leads to psychological problems.

Recent studies have widely reported that mental health problems are more prevalent among migrant workers than among the general population (Gong et al. 2008; Li 2004; Liao, Mao and Gong 2010). Compared to local-born urban workers, rural-to-urban migrant workers have poorer mental health conditions, but they are mentally healthier than non-migrants in rural areas (Li et al. 2007). Sociologists have identified a variety of influencing factors for mental illness of migrant workers. This study focuses on the impacts of residential environments, working conditions, and victimization on migrant workers' mental health. The following section discusses how these factor influence migrant workers' psychological well-being and how educational attainment could moderate the effects.

Residential environment

Since the end of 1980s, a massive flow of migrant workers have being moving into cities, but the institutional structure in Chinese cities was unable to accommodate these new comers. Not registered as local residents, migrant workers do not have access to public rental and public purchase housing provided by work units or municipal governments. The formidable high housing price and ineligibility of receiving bank mortgage prevent migrant

workers from purchasing housing on the private market. The housing choices available to temporary migrants are very limited. Renting private housing or living collectively in employees' dorms/work sheds are the two most common types of accommodation for temporary migrants in multiple cities in China (Logan, Fang and Zhang 2009; Wu 2007; Wu 2002). Due to the immature of rental market and lack of regulations, temporary migrants occupy far less space and endure poorer housing conditions than local residents (Wu 2002; Zhou and Cai 2008). Shown by a study of migrant workers in state-owned enterprises, 78.5% of them live in dorms provided by the employers with per capita living space of only 3.8 square meters (Knight, Song and Huaibin 1999). In addition, temporary migrants also tend to live in dwellings that are less likely to be equipped with kitchen/bathroom facilities, have functions (such as being used as working sites) other than serving as residences, and more likely to be temporary structure. Finally, migrant workers tend to be concentrated in urban rural transitional areas at the edge of cities, which provide small apartments of low quality.

Housing quality and neighborhood environment have long been identified as a determinant of mental health (Evans 2003; Evans et al. 2000; Kasl and Harburg 1975; Wandersman and Nation 1998; Weich et al. 2002). Residential crowding and loud exterior noise sources are found to be predictors of psychological distress (Evans 2003). Malodorous air pollution increases negative emotions, and some toxins cause behavioral disturbances, such as self-regulatory ability, and aggression. Insufficient daylight is linked to higher risk of depressive symptoms (Evans 2003). Therefore, I hypothesize that:

Hypothesis 1: Migrant workers have smaller living space and fewer facilities (such as hot water, shower, bathroom, kitchen, TV, and air conditioner) are likely to have poorer mental health.

Working conditions

A hundred years ago, Karl Marx has discussed the association between production activities and worker's mental health. Marx uses the concept of "alienation" to explain the experience of workers factories. He argued that when labour is estranged and infused into product, it no longer belongs to the worker. Production becomes "forced labour" which is external, unpleasant, and painful to the worker. The production activity does not only alienate labour but also alienates the worker himself by "exerting power over him" and "emasculating the worker's physical and mental energy, his personal life" (Elster 1989: 40). According to Marx's theory of alienation, the production activities directly affect worker's psychological well-being. Thus, working conditions and labor rights are important and major risk factors for mental health problems among rural migrant workers in China.

Studies of contemporary migrant workers in Chinese cities found that delayed pays, working over hour, and forced labor are positively associated with migrant workers' psychological problems (Liu, Zheng and Sun 2011; Liu 2011). Migrant workers who have experienced delayed pays may feel greater economic pressure. Longer work hours would leave migrant workers less leisure time to recover from work related stress. If the productive activities are forced, workers may develop more negative affect or resentment towards the employers. In addition, migrant workers who have complained about labor rights issues are more likely to be mentally unhealthy (Liu, Zheng and Sun 2011). Moreover, working environments affect migrant workers' mental health. Exposure to poisonous particles, toxic gas and noise, and lack of safety protections, may direct harm the physical health and mental health of migrant workers (Liu, Zheng and Sun 2011).

Hypothesis 2: Poor working environment and infringement of labor rights are associated with poorer mental health of migrant workers.

Crime Victimization

In Chinese cities, the local residents often attribute increased crime rates to the inflow of rural migrant workers. National Police data showed that the number crimes committed by migrant workers accounts for about 1/3 of the total in 2000 and over 50% of crimes in medium and large cities was committed by migrants, because these cities have larger shares of migrant population (Wang 2002). However, migrant workers are also more likely than local residents to become victims of violent crimes (Xu and Song 2005).

Numerous studies have documented the distress stemmed from crime victimization (MacMillan 2001). Victims of physical and sexual abuse have higher prevalence of anxiety, depression, and post-traumatic stress disorder (PTSD) symptomology (Hjorth and Ostrov 1982). Kilpatrick et al. (1985) found that victims have significantly higher rates of “nervous breakdowns”, suicidal ideation, and suicide attempts than nonvictims. Victims of attempted rape, completed rape, and attempted sexual molestation are more likely to have mental health problems than did victims of attempted robbery, completed robbery, aggravated assault, or completed molestation (Kilpatrick et al. 1985).

Hypothesis 3: Crime victimization is associated with worse psychological health of migrant workers.

The Role of Education

Migrant workers with higher educational levels tend to experience better working conditions, living environment, higher income and less migration stress. Therefore, educational level is expected to be associated with better psychological health. In addition to this direct impact, how people deal with environmental occurrences and life circumstances

vary along the line of education. Educational level could moderate the relationship between stressful experience and mental health in one of the two ways.

First, the mental health of highly educated migrant workers may be more adversely affected by risk factors, such as poor living environment and harsh working conditions, and life shocks, than those with lower education. Migrant workers with higher levels of education tend to expect a higher socioeconomic advancement in migration destinations and decent working and living conditions. The discrepancy between the reality and their expectations produces feelings of dissatisfaction, disappointment and unfairness. Given their high expectations, highly educated migrant workers may be more sensitive to poor working and living conditions and unfair treatments by employers or local residents. Thus, these life circumstances could generate greater adverse mental health consequences among individuals of higher educational levels.

Hypothesis 4: The negative effects of poor living and working conditions and crime victimization are stronger among highly educated migrant workers than among those with lower educational levels.

Second, education could protect migrant workers from the harm of negative experiences in life and work to their mental health. People with higher education tend to have relatively more prestigious and high-skill jobs that bring them higher economic return and socioeconomic status. Even when they work for longer time or in a harmful and dangerous environment, their economic and social rewards could provide great comfort and relieves their negative feelings. Moreover, psychological research has found that individuals with higher educational level and socioeconomic status tend to possess greater mastery (locus of control) and self-esteem, which encourage positive problem solving and reduces depression

(Turner, Lloyd and Roszell 1999).

In addition, migrant workers with higher educational attainment may have the knowledge and resources to more effectively cope with adverse events, or obstacles in life. For example, when their rights are infringed by employers, they have the option to quit because they are qualified for many other jobs and they have the financial capability to live for a short period without a job. Many migrant workers with minimum education simply suffer more from poor working conditions, because they have neither the leverage to negotiate with employers nor the skills or capital that allows them to leave the company.

Hypothesis 5: The negative effects of poor living and working conditions and crime victimization are weaker among highly educated migrant workers than among those with lower educational levels.

Data and Method

This study uses data from a survey of 4,152 migrant workers in Pearl River Delta and Yangtze River Delta (Liu, Zheng and Sun 2011). The sample of migrant workers was selected from 19 cities and 3,264 state-owned, collectively owned, foreign investment, and private-owned enterprises from different sectors and of sizes (from as small as 30 persons to as large as thousands of employees). Due to the lack of a sampling frame of migrant workers, the researchers adopted a non-probability sampling method. They first estimated the distribution and composition of migrant workers in Pearl River Delta and Yangtze River Delta using official statistics and census data. Based on the size of their migrant population, they selected 19 cities, and determined the sample size for each city. Within cities, they assigned sampling quotas to selected enterprises according to migrant workers' gender, employment sector, and migration origins. This sampling method allows the sample to

closely resemble the migrant worker population in these two areas in terms of socio-demographic characteristics, which improves the representativeness of the sample and the reliability of statistical inference. A cases-wise deletion of observations that have missing values for any of the variables in the analysis results in a final sample of 3,755 migrant workers.

Dependent Variable

The dependent variable for this study is GHQ-12 (General Health Questionnaire) (translated into Chinese), a commonly used measure of current mental health. The items are constructed measuring two major areas – the inability to carry out normal functions and the appearance of new and distressing experiences (See Table 1). GHQ has relatively high validity and reliability in both clinical and general populations (Goldberg and Huxley 2012). The sum of the scores for 12 questions is calculated and used as a continuous variable indicating the mental health status of migrant workers, with larger values referring to better psychological health.

[Table 1 about here]

Independent Variables

This study mainly focuses on the effects of residential environment, working conditions, and crime victimization on migrant workers' mental health. Residential environment is measured by three variables (See Table 1): housing type (including employee's dormitory, rental housing and purchased housing), housing inadequacy (the availability of twelve types of residential facilities²), and living space per person in square meters. Working conditions are measured by 9 dummy variables, including whether the

² The facilities include hot water, shower, bathroom, balcony, kitchen, washing machine, TV, fan, wardrobe, water fountain, air conditioner, and refrigerator.

respondent had a labor contract, experienced forced labor in the past year, worked without safety protection, worked in harmful environment, had ID or other documents withheld by employers, experienced delayed pays, had complained to employers about labor right issues, experienced infringement of labor rights, and had industrial injuries, and one continuous variable of average work hours per day. Crime victimization is measured by four dummy variables indicating whether the respondent had been victims of theft, fraud, robbery, or sexual harassment during the past year.

In addition to these independent variables, socio-demographic characteristics including gender, marital status, physical health, *Hukou* status, education, income, the type and size of company are controlled for. (Age is not controlled for because it is highly correlated with marital status.) Gender, marital status and *Hukou* status are three dummy variables. Health is reported by respondents on a five-point Likert scale. Education is measured by a dummy variable indicating whether respondents have a high school degree or equivalent technical school diplomas. Types of companies include state-owned, private, foreign investment, and small business companies. An ordinal variable is used to indicate the size of companies, which ranges from 1 (fewer than 9 employees) to 7 (above 3,000 employees). To account for the different living standards at different migration destinations, a relative measure of income is constructed using monthly income divided by self-reported monthly living expenses. Finally, indicators of migration stress, including loss of social network, difficulties in contacting with local residents, and obstacles in life related to non-local *Hukou* are also included in the multivariate regression (see the measures in Table 1).

Analysis methods

First, the descriptive statistics of social and demographic variables, working

conditions, residential environment, victimization experiences, and migration pressure for migrant workers are presented and comparisons are made between migrant workers with a high school (or equivalent) degree and those without a high school (or equivalent) degree. Chi-square test and t-test are used to examine whether the differences between these two groups are significant. Social class has long been demonstrated to have a protective effect on mental health (Hollingshead and Redlich 1958), one mechanism of which is through class differences in the magnitude of stress. The comparisons here could reveal whether higher educational attainment prevents migrant workers from being exposed to stressors in residential and work environment.

Next, the impact of socio-demographic characteristics, living and working conditions, victimization and migration stress on mental health is examined using OLS linear regression models. The first two models are established for migrant workers with less than high school education and those with high school education or more respectively. Coefficients are compared across model 1 and model 2 to determine if education acts to boost or buffer the impact of stressful experiences in life or work. The third model is estimated using the full sample.

Results

Table 2 shows the socio-demographic characteristics and working and living conditions for two groups of migrant workers of different levels of education. The asterisks represent the levels of statistical significance of t-tests or Chi-square tests. Migrant workers with lower educational levels tend to be older, more likely to be females and married, and less healthy than migrant workers with high school education or above. The average age is 32.25 years for migrant workers without high school degree and 27.69 years for those with high school education. Females account for 47% of migrant workers without a high school

degree, and 43% of their counterparts with a high school degree. About 68% of migrant workers with lower than high school education are married, compared with only 42% for those with high school degree. High school education is also associated with higher monthly income (relative to living expenses) among migrant workers. The ownership types and sizes of companies where migrants work are significantly different between the two groups.

Migrant workers with a high school degree are more likely to work for state-owned and foreign-investment companies compared with migrant workers of lower levels education, a larger proportion of whom working in private companies or for small business. The size of company tends to be smaller for workers of low levels of education.

[Table 2 about here]

In terms of residential environment, migrant workers with a high school degree have different housing types, better facilities, larger living space per person compared with those without high school education. Highly educated migrant workers are more likely to live in employee's dormitory instead of rental housing, possibly because a smaller proportion of them are married. On average, the living space is 11.12 m² (about 120 feet²) for migrant workers of low education levels and 15.67 m² (about 169 feet²) for migrant workers with a high school degree. The housing for the group of higher education is also less likely to be inadequate.

With regard to working conditions, migrant workers with a high school degree have much better circumstances than their counterparts with lower levels of education. Significant differences are found in multiple aspects. A higher percentage of migrant workers with high school education have signed labor contracts with employers (75% vs. 62%). Compared with migrant workers with a high school degree, more migrant workers without a high school degree reported working without safety protections (5% vs. 3%), working in harmful environment (21% vs. 17%), complaints about labor rights (24% vs. 21%), and industrial

injury (12% vs. 9%). In addition, migrant workers without high school education reported longer work hours (9.54 hrs per day) than the more educated group (8.89 hrs per day).

The most common type of victimization experienced by migrant workers is theft, followed by fraud. During the year prior to the survey, above 20% migrant workers in both group had been victims of theft, and 7% of migrant workers without high school education and 8% of those with high school education were victims of fraud. Robbery and sexual harassment occurred less often to migrant workers. But highly educated migrant workers are more likely to become victim of robbery than workers of lower education.

[Table 3 about here]

Table 3 presents OLS regression models predicting migrant workers' mental health using socio-demographic characteristics, residential environment, working conditions, and victimization. The model in column (1) is estimated for migrant workers of lower than high school education. Column (2) presents the model for migrant workers with a high school education or more. The last column shows the model using the full sample. Disaggregating the models by educational level allows me to examine how the relationship between stressful experiences and mental health varies across the two groups of migrant workers. It will show whether having higher educational levels increases or reduces the negative mental health consequences of adverse living and working conditions.

In terms of social and demographic status, being male, having higher income, and better health are linked to greater mental well being. For migrant workers with high school education, working for small business brings mental health benefits compared with jobs in state-owned companies. Next section examines the effects of living environments. Migrant workers living at places with better facilities tend to be psychologically healthier than those whose housing lacks necessary facilities. Crowded residential space has a harmful impact on mental health for migrant workers of less than high school education, but not for those who

have a high school degree. My hypothesis 1 is supported by the effects of residential facilities and living space. Housing type does not affect the mental health status of migrant workers.

Violations of labor's rights are major risk factors for migrant workers with less than high school education but almost have no impact on migrant workers with high school education or above. For the first group, having labor contract is associated with better mental health, while experiences of forced labor, working in harmful environment, ID withheld by employers, and long work hours bring negative mental health consequences. In addition, migrant workers with less than high school education tend to have worse mental health if they had experienced any other labor right infringement during the prior year. These findings supports my hypothesis 2 that poor working environment and violations of labor rights are associated worse mental health. (Delayed pays has an unexpected positive effect on mental health among the group of low education.) Among these risk factors, only forced labor has a significant negative effect at the level of 0.1 for migrant workers with a high school degree.

The different effects between these two groups of migrant workers support my hypothesis 5 that education do act to buffer the negative influences of poor working conditions. Migrant workers with high school education may have more personal and social resources to copy with problems related to working conditions. Another possibility is that even if highly educated migrant workers reported violations of labor's rights, the problems are less severe and less frequent compared with the experiences of migrant workers with less than high school education.

Next block evaluates the relationship between victimization experiences and mental health. Being victims of fraud only reduces the mental well being of migrant workers with less than high school education, while it has no impact on the other group. Sexual harassment has a detrimental influence on mental health for both groups, providing support for my hypothesis 3. Theft and robbery do not affect migrant workers' psychological well-being.

The coefficients in the last block show that difficulties in interaction with local residents and obstacles in life due to *Hukou* status are negatively associated with migrant workers' mental health. Migrant workers are likely to be treated differently or discriminated against by local residents due to their identity as rural migrants, which is a source of psychological distress in daily life for migrant workers.

Discussion and Conclusion

Migrant workers in Chinese cities live in socially disadvantaged conditions and they have to deal with harsh working conditions, violations of labor rights, poor living environment, and unequal treatment and discrimination by local residents. Recent suicides committed by migrant workers reflect the miserable mental health status of this group. However, only a handful of studies have examined risks factors for mental well being of migrant workers in China. By examining the role of working condition, living environment, and victimization, this study does contribute to our understanding of the mental health status of Chinese rural migrant workers.

According to the results, migrant workers who are male, with higher income and better health tend to be psychologically healthier. Migrant workers with high school education in small businesses have greater psychological well-being compared with their counterparts in state-owned, private-owned, or foreign investment companies. Those who work for small businesses possibly run the business by themselves, which gives them more autonomy at work and less stress. In support of the first three hypotheses, living environment, working conditions, and victimization play important roles in determining the mental health status of migrant workers. Inadequate housing facilities and small living space are associated with mental illness. Regarding working conditions, no labor contract, forced labor, harmful work environment, long work hours, having complaints about labor conditions, and

infringement of labor rights all detrimental to migrant workers' mental health. Being victim of fraud and sexual harassment are also important predictors of psychological health problems.

Many of the risk factors only have influence on migrant workers of lower education but not on highly educated migrant workers, providing support for the buffering effect of education. First, the nature of work for highly educated individuals tends to be less monotonous, less physically demanding, and more rewarding. It explains why longer work hours has weaker influence on the mental health of the highly educated group than the group of lower education. Infringement of labor rights for white color workers is also not as severe as what happens to factory workers. Therefore, poor working conditions only bring negative mental health consequences to workers of low educational levels. Moreover, personal, social and financial resources related to education provide migrant workers stronger skills and more possibilities to tackle problems in life and work. Personal savings and family wealth are useful backups that provide the option of leaving the company if migrant workers meet any labor rights problems. Finally, migrant workers with high school education tend to be younger and unmarried. Thus, they are less likely to face the stress of supporting a family that possibly intensifies the impact of adverse life events on mental health.

According to the findings of this study, to improve the mental well-being of migrant workers, the governments have to mainly focus on providing better housing and enforce strict regulations to prevent employers from harming workers' rights. Currently, Chinese migrant workers have very few options to get access to housing in urban destinations, workers' dormitory and rental housing being two main sources of accommodation for migrant workers. However, both types of housing tend to be over-crowded, poorly equipped, and insalubrious. Migrant workers do not have access to housing of higher quality due to policy restrictions and economic capability. Public housing and economic purchase housing are not available to

individuals without a local *Hukou*. Even after working for years in urban destinations, migrant workers are still able to obtain local household registration (*Hukou*) and thus not entitled to enjoy the benefits of public housing. The government should make effort to provide affordable housing to migrant workers and to impel employers to improve the quality of workers' dormitories.

Harsh working conditions may be the most direct cause of mental health problems among migrant workers. Employers such as Foxconn were accused for its military management style, harsh punishment, and long work hours. Other smaller employers may use illegal means (such as withholding their id and delaying payments) to keep workers and force them to work for longer hours. Local governments should not turn a blind eye to these infringements of labor rights in order to attract more investments; instead it is the government's responsibility to enforce labor law and to protect migrant workers.

Physical health is another important factor that is closely related to mental well-being. Migrant workers' health status could be improved through enhanced working and living conditions and better availability of health care. Without an urban *hukou*, migrant workers often do not have health insurance and the insurance purchased by their employers tend to have many restrictions to use and cover only serious illness and hospital stays. I suggest that the government should provide better health insurance plans for migrant workers and require employers to purchase health plans for their employees.

Table 1. Measures for Selected Variables in the Analysis of Mental Health Among Migrant Workers in China

<i>Dependent variable</i>	
Mental health (GHQ-12)	<p>Have you recently...?</p> <ol style="list-style-type: none"> 1. Been able to concentrate on whatever you are doing; 2. Lost much sleep over worry; 3. Felt that you are playing a useful part in things; 4. Felt capable of making decisions about things; 5. Felt constantly under strain; 6. Felt you couldn't overcome your difficulties; 7. Been able to enjoy your normal day to day activities; 8. Been able to face up to your problems; 9. Been feeling unhappy and depressed; 10. Been losing confidence in yourself; 11. Been thinking of yourself as a worthless person; 12. Been feeling reasonably happy, all things considered
<i>Independent variables</i>	
Housing inadequacy (12 items)	<p>Does your place of residence have the following facilities?</p> <p>Hot water, shower, bathroom, balcony, kitchen, washing machine, TV, fan, wardrobe, water fountain, air conditioner, and refrigerator.</p>
Have difficulties in interaction with local residents (0=No 1=One or more difficulties)	<p>Do you feel hard to interact with local residents because of the following problems?</p> <ol style="list-style-type: none"> 1. Language problem; 2. Different values and ideas; 3. Different life style; 4. No opportunity to interact with local people; 5. Disparity in socioeconomic status; 6. Local people look down upon migrants; 7. Other problems.
Meet obstacles in life related to <i>Hukou</i> status (0=No 1=One or more problems)	<p>Do you meet the following obstacles or problems because you do not have a local <i>Hukou</i>?</p> <ol style="list-style-type: none"> 1. Punished because you do not have temporary residential permit; 2. Cannot apply to a certain job; 3. Cannot get certain documents at migration destinations (for example driver's license and passport); 4. Have to pay extra fees to enroll your children to local schools; 5. Have travel to migration origins to get birth permit every year; 6. Lack feelings of security in life; 7. Not trusted by local residents; 8. Being discriminated against; 9. Other.

Table 2. Descriptive Statistics for Variables Used in the Analysis of Mental Health by Levels of Educational Attainment: Survey of Migrant Workers in Pearl River Delta and Yangtze River Delta, 2010

	Lower than High School Education	High School Education or More
	Mean	Mean
Mental health (0-24)	15.05	15.26*
<i>Socio-demographic characteristics</i>		
Female	.47	.43**
Age	32.25	27.69***
Married	.68	.42***
Rural Hukou	.93	.72***
Yangtze River Delta	.51	.50
Monthly income relative to living expense (0.3-67.9)	2.98	2.64***
Health status (1-5)	3.76	3.85**
Company type		
State-owned	.17	.19***
Private	.61	.53
Foreign investment	.15	.22
Small business	.07	.06
Company size (number of employees) (1-7)	4.09	4.45***
<i>Residential Environment</i>		
Housing type		
Employee's dormitory	.38	.41***
Rental housing	.59	.51
Purchased housing	.03	.07
Housing inadequacy (0-12)	6.08	4.65***
Space per person (meter ²)	11.12	15.67***
<i>Working conditions</i>		
Labor contract	.62	.75***
Forced labor	.05	.05
Work without safety protection	.05	.03**
Harmful work environment	.21	.17***
ID withhold	.05	.06
Delayed pays	.04	.04
Work hours per day	9.54	8.89***
Complaints about labor rights	.24	.21*
Infringement of labor rights	.07	.05
Industrial injury	.12	.09**
<i>Victimization</i>		
Victim of theft	.20	.22
Victim of fraud	.07	.08
Victim of robbery	.02	.03**
Victim of sexual harassment	.004	.006
<i>Migration stress</i>		
Coworkers from same province (0-5)	2.63	2.68
Have difficulties in interaction with local residents	.65	.62
Meet obstacles in life related to <i>Hukou</i> status	.34	.37+
<i>N</i>		

Level of significance from t-test or Chi-square test: + p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table 3. Multivariate OLS Regression Models of Mental Health: Survey of Migrant Workers in Pearl River Delta and Yangtze River Delta, 2010

	Lower than High School Education (1)	High School Education or More (2)	Full Sample (3)
<i>Socio-demographic characteristics</i>			
High school education	--	--	0.05
Yangtze River Delta	0.17	-0.03	0.09
Female	-0.16	-0.24	-0.18+
Married	0.13	0.08	0.14
Rural <i>Hukou</i>	0.08	0.11	0.16
Income relative to living expense	0.04	0.03	0.04+
Health status	0.58***	0.46***	0.53***
Company type			
State-owned (reference)			
Private	-0.06	0.21	0.08
Foreign investment	0.01	0.20	0.09
Small business	0.28	0.78*	0.50*
Company size (number of employees)	-0.05	0.04	-0.00
<i>Residential environment</i>			
Housing type			
Employee's dorm (reference)			
Rental housing	0.15	0.13	0.15
Purchased housing	0.19	-0.04	0.04
Inadequate housing	-0.06*	-0.07*	-0.06***
Space per person	-0.01*	-0.00	-0.01*
<i>Working conditions</i>			
Labor contract	0.44**	0.21	0.29**
Forced labor	-0.64*	-0.68+	-0.65**
Work without safety protection	0.00	-0.54	-0.13
Harmful work environment	-0.38*	-0.29	-0.30*
ID withhold	-0.95***	0.42	-0.34
Delayed pays	0.65*	-0.35	0.29
Work hours per day	-0.12***	-0.01	-0.08**
Complaints about labor rights	-0.21	-0.26	-0.24*
Infringement of labor rights	-0.89***	0.39	-0.49*
Injury	-0.22	-0.03	-0.13
<i>Victimization</i>			
Victim of theft	0.21	0.02	0.08
Victim of fraud	-0.79***	-0.19	-0.55**
Victim of robbery	0.03	-0.19	0.01
Victim of sexual harassment	-2.40*	-2.46*	-2.21**
<i>Migration stress</i>			
Coworkers from same province	0.04	0.08+	0.05+
Difficulties in interaction with local residents	-0.28*	-0.45**	-0.34***
Obstacles in life related to <i>Hukou</i> status	-0.75***	-0.32*	-0.56***
Constant	14.71***	13.69***	14.01***
<i>N</i>	2,217	1,538	3,755
R-squared	0.132	0.073	0.098

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

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