

Psychosocial Wellbeing Among Rural Migrant Workers in China: Did the 2008 Financial Crisis Worsen Their Vulnerability?

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Abstract

Background. Since 1980, China has been experiencing the largest migration in human history to urban areas. Rural migrant workers are exposed to disproportionate stress, a sense of marginality, language barriers and low social positions. Stress plays a significant role in the development of psychosocial challenges, including anxiety, hostility and depressive symptoms, as well as diagnosable conditions, including compulsive and post-traumatic stress disorders. This project questions whether rural migrant workers were particularly vulnerable in terms of psychosocial wellbeing after the collapse of Lehman Brothers, one of the major incidents marking the worst turmoil of the 2008 financial crisis.

Methods. Data from the Rural Urban Migration in China (RUMiC) 2007-08 and 2008-09 datasets were used for analyses. General Health Questionnaire (GHQ) -12 scores, categorised as the presence of common mental disorders (CMDs) vs. the absence of CMDs, were chosen as the dependent variable. Socioeconomic status was measured as per *hukou* status, job nature and working hours, each treated as an independent variable. City, gender, age, ethnicity and educational level were taken into account as confounders. Cross-tabulations and binary logistic regression analyses were run. The software package STATA 14.2 was used for secondary data analysis.

Results. The more educational qualifications rural migrant worker samples received, the more likely they were to be free from CMDs. However, tertiary-educated rural migrant worker samples enjoyed similar levels of mental wellbeing as their counterparts who had completed elementary school or below. Additionally, there was no statistical evidence to suggest that rural migrant worker samples were more likely to experience CMDs based on their job nature (non-manual vs. manual vs. self-employed vs. family business) or working hours (< 60 hours per week vs. 60-119 hours per week vs. ≥ 120 hours per week).

Conclusions. The optimal rural migrant workers' educational level, in terms of maximising their mental wellbeing, was between senior secondary school and post-secondary school level. However, socioeconomic factors, namely, job nature and working hours, were insignificant determinants of mental wellbeing of rural migrant workers. Moreover, there was no evidence suggesting rural migrant workers suffered from a distinct mental wellbeing between 2008 and 2009.

Keywords: psychosocial wellbeing, educational attainment, occupation security, internal migration, financial crisis

1. Introduction

Since 1980, China has been experiencing the largest migration in human history, as hundreds of millions of rural dwellers relocate, temporarily or permanently, to urban areas (Gong et al., 2012, p. 843; Editorial, 2014, p. 1902). According to the China Population Census, the rural migrant worker, also known as rural-urban migrant worker or locally referred to as *nonmingong* (农民工), population increased from 30 million in 1980, to 132 million in 2006 and 262 million in 2010 (National Bureau of Statistics, 2007; Fong & Tong 2015, p. 1087).

In China, each citizen is assigned as either a rural or urban *hukou* status (户籍), based on their maternal *hukou* status (Fu & Ren, 2010, p. 593; Song & Sun, 2016; Tani, 2017, p. 48). The *hukou* system, also known as the household registration system, was initiated in 1958 to control the movement of the Chinese population (Gallagher et al., 2009, p. 30; Fan, 2008, p. 66). Those in possession of a rural *hukou* can only gain access to

state benefits and opportunities designated for rural Chinese communities (Young, 2013, p. 28; Davin, 1999, p. 7; Gaetano, 2015, p. 30; Chan & Zhang, 1999, p. 819). When individuals migrate to urban spaces, they remain ineligible for any social welfare - including healthcare, unemployment insurance, pensions, subsidised education and housing - allocated to urban Chinese communities (Fan, 2008, p. 68; Wang, 2005; Chan & Zhang, 1999, p. 819; Tani, 2017, p. 48). Primarily due to their rural *hukou* status, rural migrant workers endure long working hours and insecure employment, while tolerating overcrowded and insalubrious living conditions (Lau et al., 2012, p. 526; Li et al., 2007, p. 718).

High unemployment in agricultural provinces has meant that many local rural dwellers are increasingly migrating to cities (Chan, forthcoming; Chan, 2015, p. 36). In Dongguan, for example, due to the significant reduction in aggregate supply of labour to both the agricultural and industrial sector, rural workers usually possessed short work tenure, in part, leading to the rise in rural unemployment or underemployment (Chan, 2010a, p. 517). This research project exclusively focuses on rural migrant workers, a population that continue to face significant socioeconomic difficulties.

Rural migrant workers are exposed to disproportionate stress, a sense of marginality, language barriers and low social positions (Song & Sun, 2016; Cheung, 2013, p. 122; Bankston & Zhou, 1997; Kulis et al., 2009; Noh & Avison, 1996; Young, 2001). Stress plays a significant role in the development of psychosocial challenges, including anxiety, hostility and depressive symptoms, as well as diagnosable conditions, including compulsive and post-traumatic stress disorders (Yu et al., 2017, p. 468; Lin et al., 2011, p. 172; Cheung, 2013, p. 122; Cheung, 2014). Here psychosocial wellbeing pertains to the influence of social factors on an individual's mind or behaviour (Martikainen et al., 2002, p. 1091).

Following the Lehman bankruptcy, from the fourth quarter of 2008, firms which established pre-crisis relationships with less financially healthy lenders had a slimmer chance of obtaining loans, or paid higher interest rates if they needed to borrow. These financial constraints, in part, resulted in mass redundancies as firms decided to reduce employment to cut operational expenses (Reich, 2014, p. 1). The credit crisis morphed into recessions across developed economies around the globe (Wim, 2009, p. 1; Bourkhis & Nabi, 2013, p. 68). Simultaneously, world trade collapse in agricultural products – particularly natural resources - occurred between the second quarter of 2008 and the third quarter of 2009, marking the steepest fall of world trade in recorded history (Gawande et al., 2011, p. 5; Braun, 2008, pp. 2, 8). In 2008, financial turmoil worldwide resulted in an estimated total loss of US\$50 trillion. Existing studies argued the economic meltdown was exacerbated due to the aftermath of Lehman Brothers' bankruptcy in September 2008 (Aisen & Franken, 2010, p. 3; Jones, 2010, p. 2).

By the end of the third quarter of 2008, Guangdong, the most popular province for rural migrant workers seeking occupational development, recorded that a total of 7,148 enterprises had been liquidated or moved to areas with lower production costs (Chan, 2010b, p. 665). By the end of the fourth quarter of 2008, as many as 8,500 enterprises and over 50,000 factories had been shut down (Chan et al., 2010, p. 59; Chan, 2010a, p. 665). From a nationwide perspective, multimillion China-based factories were closed as a direct result of the 2008 financial crisis (Zhang, 2015, p. 66).

The liquidation of many labour-intensive enterprises and factories created increased unemployment rates among rural migrant workers (Liu 2011 p. 73). At the end of 2008, the Ministry of Agriculture estimated approximately 20 million of a total of 130 million rural migrant workers had lost their jobs (Zhang, 2015, p. 69; Chen et al., 2012). Of those employed in September 2008, only 2.90% (8.7 million out of 279 million) were unemployed in April 2009 (Zhi et al., 2013, p. 259). Here statistics indicate that most rural migrant workers remained employed or those being laid-off were reemployed by April 2009, despite the mass liquidation of firms and factories caused by the financial crisis. However, as Huayong Zhi et al. (2013, p. 259) argued, less than half of laid-off rural migrant workers in late 2008 were rehired in non-agricultural jobs by April 2009 (Jia, 2014, p. 39). The majority of rural migrant workers were therefore denied the opportunities to engage in urban jobs, opportunities that they were predominantly motivated by to migrate from rural to urban spaces.

1.1 Educational Attainment and Psychosocial Wellbeing

Bao Liang Zhong et al. (2015, p. 2), and Yang Cao and Zhenhui Liu (2015, p. 464), measured the levels of psychosocial wellbeing of poorly educated rural migrant workers. They found that rural migrant workers with an education of junior high school level or below suffered from lower earnings, worse working conditions and greater social strain, when compared to their better educated counterparts (Zhong et al., 2015, p. 5; Cao & Liu, 2015, p. 465). Findings corresponded with results obtained from alternative studies (e.g. Zhu et al., 2012, pp. 497, 501; Frenkel & Chongxin, 2015, pp. 262, 266, 268).

1.2 Socioeconomic Difficulties and Psychosocial Wellbeing

According to Article 5 of *The Temporary Regulation on the Administration of Cross-Provincial Employment of Migrant Workers*, issued by the Ministry of Labour in 1994, urban job opportunities for rural migrant workers should be considerably restricted, a policy in favour of employment security for local urban dwellers (Li, 2006, p. 59). As a consequence, since 1997, the reform of state-owned enterprises (SOEs) in cities has significantly discriminated against rural migrant workers in the urban labour market, as SOEs favour the recruitment of unemployed local urban dwellers. By the end of the 1990s, local governments had forced SOEs to dismiss rural migrant workers, creating more job vacancies for local urban residents (Sylvie et al., 2011, p. 2). Not only did rural migrant cohorts fail to gain job security, they were denied the right to employee benefits. In profit-sharing firms, for example, local urban workers were exclusively eligible for a share of company profits (Maurer-Fazio & Dinh, 2004, p. 174). With the least occupational security, welfare and status, rural migrant workers were generally permitted to work in positions that local urban dwellers were unwilling, or less willing, to undertake (Knight et al., 1999, p. 74).

Migrant cohorts are often required to accept jobs with long working hours, limiting the time they are available to maintain social bonds with family, or build metropolitan networks (Li et al., 2007, pp. 717-718). These forms of discrimination discourage them from aggregating their social resources and exhibiting social confidence (Li et al., 2007, pp. 717-8; Shen et al., 1998, p. 5370). Further evidence demonstrating their failure to secure social resources includes, for example, their experiences of residential segregation from local urban residents due to their denigration as “second-class citizens”, and uncommon dialects and customs (Zhan, 2011, p. 265). Existing Chinese studies argue social subordination in association with rural migrant status is related to higher levels of perceived discrimination (Hu & Chen, 2012; Jin et al., 2012; Lin et al., 2011; Yang et al., 2012).

These discriminatory circumstances aggravate rural migrant workers’ levels of distress (Liu et al., 2008). A total of 48 existing studies demonstrate that rural migrants facing greater exclusion displayed symptoms of social strain. Symptoms included interpersonal sensitivity, social anxiety and hostility (e.g. Zhong et al., 2013, p. 1571; Liu et al., 2009; Li et al., 2008; Liu et al., 2008). Here social exclusion, in part, referred to the separation of networks between local urban residents and rural migrant workers. The latter experienced substantial difficulties when establishing connections with the former (Zhan, 2011, p. 265).

2. Research Aims and Hypotheses

Aforementioned literature (Li, 2006; Sylvie et al., 2011; Maurer-Fazio & Dinh, 2004; Knight et al., 1999; Li et al., 2007; Shen et al., 1998; Hu & Chen, 2012; Jin et al., 2012; Yang et al., 2012; Zhong et al., 2013; Liu et al., 2009; Liu et al., 2008; Zhan, 2011) rarely explores the intersection between socioeconomic and psychosocial challenges faced by rural migrant workers during the 2008 financial crisis. Furthermore, most of these studies restrictively address migrant cohorts’ encounters in the regions of Pearl River Delta (珠江三角洲) and the Yangtze River Delta (长江三角洲). These regions are limited to provinces/cities – including Guangdong, Shanghai, Jiangsu, Zhejiang and Anhui - where the majority of rural migrant workers are situated (e.g. Fong & Tong, 2015; Zhang, 2015).

This project expanded the sociological inquiry into broader geographical contexts and studied rural migrant workers’ experiences within and beyond both delta regions. A total of 15 provinces/cities with the greatest concentration of rural migrant workers, including Guangzhou, Shenzhen, Nanjing and Shanghai were examined (Table 1). The research aim was to gain a better understanding of the causal association between socioeconomic and psychosocial challenges encountered by rural migrant workers during the 2008 financial crisis. The project questions whether rural migrant workers were particularly vulnerable in terms of psychosocial wellbeing after the collapse of Lehman Brothers, one of the major incidents marking the worst turmoil of the 2008 financial crisis. Vulnerability in sociological discussion refers to the experiences of conditions that would harm ones’ social values. These conditions include poverty and inequality, marginalisation, access to insurance and housing quality (Brooks, 2003, p. 4).

In the late 2000s, rural migrant workers contributed approximately 16% - 24% of GDP, in addition to around 33% - 40% of net income in rural China (Wang, 2010, p. 218). Circumstances which inflict psychosocial challenges on rural migrant workers reduce their workplace efficiency and capacity for work, potentially compromising national economic growth (Wang et al., 2017, p. 1386; Liu et al., 2011, p. 210). Furthermore, discrimination and alternative forms of social exclusion are human rights abuses, prompting the need for early identification and intervention (World Health Organisation, 2013).

This project set up two hypotheses, as follows:

Hypothesis 1:

Socioeconomic challenges faced by rural migrant workers were negatively associated with their psychosocial wellbeing in China, between 2008 and 2009.

Hypothesis 2:

Socioeconomically insecure rural migrant workers were more vulnerable in terms of psychosocial wellbeing, relative to their socioeconomically secure counterparts, in 2009 than in 2008.

3. Ethics

This study received approvals from Rural Urban Migration in China (RUMiC) team to conduct secondary data analysis in accordance with an end user license agreement obtained from Institute of Labour Economics (IZA).

4. Research Design and Data

4.1 RUMiC Data

Data from the RUMiC 2007-08 and 2008-09 datasets were used for analysis. RUMiC is a large-scale, five-year longitudinal and representative survey of Chinese rural migrants from 2008 to 2012 (Zhao, 2015, pp. 88-9; Lee & Zhao, 2015; Zhang, 2017, p. 115; Akgüç et al., 2014). The survey was the joint venture of researchers at the Australian National University, the University of Queensland and the Beijing Normal University, with support from the IZA (Fang et al., 2015; Fang, 2017, p. 15). The RUMiC consists three of independent surveys: the Rural Household Survey (RHS), the Urban Household Survey (UHS), and the Migrant Household Survey (MHS). Both wave 1 (in 2008) and wave 2 (in 2009) of the MHS include detailed information about personal characteristics, educational attainment, socioeconomic status and mental health status, as shown in **Table 2** (Tani, 2015; Lee & Zhao, 2015).

A pre-census was undertaken by the RUMiC survey team to form a sampling frame based on workplaces of migrant workers (Garnaut et al., 2008 pp. 177-178; Akgüç et al., 2014). Under this frame, 5,000 migrant households were selected by simple random sampling, based on samples' birth month, for face-to-face interviews (Kong, 2010, pp. 137, 146; Akgüç et al., 2014). A total of 8,500 respondents were interviewed (Tani, 2015; Meng et al., 2010; Lee & Zhao, 2015; Zhang, 2017, p. 115). The wave 1 survey took place between March and May 2008, and the wave 2 survey between March and May 2009 (Meng et al., 2010). Migrants were defined as individuals who had left their rural households and resided in urban regions for six months or longer (Meng et al., 2010; Connelly & Maurer-Fazio, 2015; Kong, 2010, p. 136; Demurger & Wang, p. 2016).

The 2008 financial crisis had a severe impact on industries where rural migrant workers were concentrated, including manufacturing, construction and services industries (Kong, 2010, p. 149). As a result, as indicated by **Table 3**, the attrition rate of wave 2 of the MHS was as high as 58.4% (Akgüç et al., 2014). Due to sample attrition, an equivalent number of new households were supplemented in wave 2 based on exactly the same sampling procedures as those used in wave 1 (Zhao, 2015, pp. 88-9; Kong, 2010, p. 149).

While survey teams gathered new respondents to participate in the wave 2 survey as a compensation, these replacements were unlikely to share an identical socioeconomic status, common mental health conditions and demographic characteristics as those lost (Meng et al., 2010). Therefore, this project only analysed data from respondents who took part in both wave 1 and wave 2 of the survey. In doing so, potential non-response bias, ascribed to the high attrition rate, was reduced. This also facilitated direct comparison between the wave 1 and wave 2 datasets, for the purposes of studying how psychosocial wellbeing of rural migrant workers was affected as an outcome of the 2008 financial crisis.

4.2 GHQ-12

The MHS datasets include the General Health Questionnaire (GHQ-12), developed by David Goldberg (1972), a self-administered screening questionnaire compiled to assess respondents with minor, common mental disorders (Friedman, 2013; Goldberg et al., 1997; Sanchez-Lopez & Dresch, 2008, p. 839). The GHQ-12 comprises 12 items, each examining an aspect of mental or psychosocial wellbeing on a four-point (less than usual, no more than usual, rather more than usual, or much more than usual) scale (Tani, 2015; Goldberg & Williams, 1998; Montazeri et al., 2003, p. 66; Zulkefely & Baharudin, 2010, p. 74). Assessed pathologies include depressive symptoms, anxious symptoms, distress, a sense of loneliness and isolation (Zhong et al., 2015, p. 2; Shen et al., 1998, pp. 5370, 5372; Liu et al., 2009; Li et al., 2008). This project employed the bi-modal (0-0-1-1) scoring method, resulting in a score for each item of either 0 or 1, in addition to a total score between 0 (best status of wellbeing) and 12 (worst status of wellbeing) (Crockett et al., 2009, p. 335; Hankins, 2008, p. 355; Akay et al., 2012a, p. 424; Akay et al., 2012b, p. 5). This project corresponded with existing Chinese literature, adopting the

cut-off point of 3/4 for common mental disorders (CMDs) diagnosis (Liang et al., 2016; Politi et al., 1994; Ip & Martin, 2006, p. 91).

GHQ-12 scores, categorised as the presence of CMDs vs. the absence of CMDs, were chosen as the dependent variable. Socioeconomic status was measured as per *hukou* status, job nature and working hours, each treated as an independent variable. City, gender, age, ethnicity and educational level were taken into account as confounders.

The formula of inferential binary logistic regression model was written, as follows:

$$Y_{\text{CMDs}} = \alpha + \beta_{\text{gender}} X_{\text{gender } i} + \beta_{\text{age}} X_{\text{age } i} + \beta_{\text{ethnicity}} X_{\text{ethnicity } i} + \beta_{\text{hukou}} X_{\text{hukou } i} + \beta_{\text{education}} X_{\text{education } i} + \beta_{\text{job}} X_{\text{job } i} + \beta_{\text{workinghours}} X_{\text{workinghours } i}$$

where $Y_{\text{CMDs}} = \log(\text{Odds}_i)$;

$\text{Odds}_i = \log[\pi_i / (1 - \pi_i)]$;

$\pi_i = \exp(\alpha + \beta_{\text{gender}} X_{\text{gender } i} + \beta_{\text{age}} X_{\text{age } i} + \beta_{\text{workinghours}} X_{\text{workinghours } i}) / [1 + \exp(\alpha + \beta_{\text{gender}} X_{\text{gender } i} + \beta_{\text{age}} X_{\text{age } i} + \beta_{\text{workinghours}} X_{\text{workinghours } i})]$

5. Statistical Method

The software package STATA 14.2 was used for secondary data analysis.

6. Data Analysis

The legal retirement age in China was 60, although rural migrant workers running small businesses were not bound to the statutory retirement age due to the absence of an employment contract (James 2007 p. 60). It is noteworthy that rural migrant worker samples might under-report their ages, as a result of their socioeconomic needs to continue working rather than retiring. Also, according to the *People's Republic of China (PRC) Labour Law*, the minimum age for working was 16 (Library of Congress 2015). This project therefore restrictively analysed sample data between the age of 16 and 64.

Cross-tabulations were employed in order to crudely assess the relationships between each categorical confounder or explanatory variable, and the response variable. Here response variable was categorised as better mental health or worse mental health, a categorisation based on the cut-off point 3/4 of GHQ-12 scores. Then, Chi-square tests were performed to examine whether population means of two samples were equal, or substantially different. One Chi-square test, for example, aimed to analyse the differences in mental health conditions between male and female rural migrant worker samples. Next, logistic regression was performed for wave 1 and 2 data separately, for the purpose of measuring the impact on mental health imposed by several health predictors, after controlling specific characteristics of rural migrant worker samples. Here significance level was set at 0.05.

7. Results

7.1 Cross-tabulations

7.1.1 Education Level and Mental Health

In line with existing literature, rural migrant worker samples enjoyed different levels of mental health by education level between 2008 and 2009 (Chi-square test: $p < 0.001$; $N = 2,364$). Education level was measured by the highest educational qualification samples received. The poorest educated samples, those who completed elementary school or below, were most likely to develop CMDs (12.09% diagnosis rate in 2008 and 17.27% diagnosis rate in 2009). In 2008, rural migrant worker samples who had received secondary and post-secondary, but not tertiary education, were least likely to suffer from CMDs (between 3.33% and 5.74% diagnosis rates). In 2009, while all non-tertiarily educated rural migrant worker samples encountered more mental health struggles (between 6.47% and 17.27% diagnosis rates of CMDs), samples with tertiary education levels were not diagnosed with CMDs (**Table 4**). While the mental health of the majority of rural migrant worker samples was seemingly affected by the 2008 financial crisis, the most educated samples were unlikely to experience any adverse impact on their mental wellbeing.

7.2 Binary Logistic Regression

7.2.1 Education Level and Mental Health

In 2008, when looking at rural migrant worker samples who did not receive tertiary education, keeping confounders and alternative explanatory variables constant, the odds of being CMDs-free for samples reaching junior middle school, senior middle school and post-secondary school level were 1.56, 1.41 and 1.30 times that

of samples finished elementary school level or below at 0.05 significance level. This suggests that the more educational qualifications rural migrant worker samples received, the more likely they were to be free from CMDs. However, it was not statistically significant to argue tertiary-educated rural migrant worker samples enjoyed different levels of mental wellbeing than their counterparts who had completed elementary school or below (Table 5).

In 2009, the odds of rural migrant worker samples finishing up to junior middle and senior middle school being free from CMDs were 1.79 and 1.35 respectively that of samples possessing educational qualification of up to elementary school level at 0.05 significance level. This again indicates that the more education rural migrant worker samples had completed, the less likely they were to suffer from CMDs. However, those who obtained post-secondary educational qualifications were no less likely to develop CMDs than those who, at most, had received elementary education (Table 5).

7.2.2 Occupational Conditions and Mental Health

Despite existing literature argues that both educational level and occupation play an important role in rural migrant workers' psychosocial and mental wellbeing, there was no evidence to suggest that rural migrant worker samples were more likely to experience CMDs based on their jobs (non-manual vs. manual vs. self-employed vs. family business) or working hours (< 60 hours per week vs. 60-119 hours per week vs. \geq 120 hours per week) at 0.05 significance level (Table 5). These findings suggest rural migrant worker samples undertaking non-manual jobs, alongside those working less than 60 hours per week, did not experience fewer psychological challenges.

8. Discussion

8.1 Education Levels, Socioeconomic Expectations and Mental Health

Education level is a primary predictor of how well rural migrant workers can adapt and remain satisfied with their socioeconomic status. Based on aforementioned studies, better educated samples should expect, and experience, better working conditions, with less discrimination and social exclusion, resulting in better mental health (Zhong et al., 2015, p. 5; Cao & Liu, 2015, p. 465; Zhu et al., 2012, pp. 497, 501; Frenkel & Chongxin 2015, pp. 262, 266, 268). However, when there is a significant discrepancy between expected and actual socioeconomic outcomes, better educated rural migrant workers could suffer from poorer mental health (Cheng et al., 2013, pp. 2162, 2164; Nielsen & Smyth, 2006, p. 5).

The higher the education level of rural migrant workers, the more likely they were to be aware of occupational and social equality rights. This means better educated rural migrant workers had higher expectations of getting a fair share of occupational and social welfare (Chan & Ngai, 2010). Based on existing literature, rural migrant workers who obtained higher educational qualifications resulted in greater career advancement and decreased chances of facing social marginalisation, leading to better mental health. Meanwhile, rural migrant workers with higher education level expected more for their social and occupational development, resulting in a greater risk of widening the gaps between expected and actual rewards in life and, as a consequence, poorer mental health (Cheng et al., 2013, pp. 2162, 2164; Nielsen & Smyth, 2006, p. 5).

These arguments corresponded to the findings that indicated why better educated rural migrant worker samples were less likely to suffer from CMDs, yet the most and least educated samples were at greater risk of being diagnosed with CMDs. Findings revealed that the optimal educational level to enhancing mental wellbeing was between senior secondary school and post-secondary school level within rural migrant worker communities.

8.2 Occupational Security and Mental Health

In spite of the associations between socioeconomic and mental wellbeing among China's rural migrant workers, findings did not suggest that rural migrant worker samples in non-manual jobs and working fewer hours enjoyed better mental health than those engaging in manual tasks and committing to over 60 hours of work per week (Hu & Chen, 2012; Jin et al., 2012; Lin et al., 2011; Yang et al., 2012; Hu et al., 2012).

Based on the availability of the datasets, this project considered job nature and weekly working hours when measuring occupational security, despite the fact that there are many alternative predictors of job security, including wage earnings and risks of unemployment (Chan, 2010b, pp. 666-77; Solinger, 2006, p. 184, 191; Frenkel & Yu, 2015, p. 267). Here longer working hours experienced by rural migrant worker samples might not necessarily worsen their mental health if such a circumstance inferred higher wage earnings and slimmer risks of unemployment, factors which could potentially compensate for the negative mental impacts caused by prolonged working hours (Chan, 2016, p. 6).

It is noteworthy that rural migrant workers were denied non-wage incomes, including housing subsidies and health care services, due to their rural *hukou* status. However, additional studies argue that having higher wage earnings was associated with more remittance, allowing rural migrant workers to send the surplus their rural-based families (Yang & Fang, 2000 p. 9; Cai, 2003; DeWind & Holdaway, 2008, p. 221). Sending remittance in this case represented stronger family ties, higher degrees of interconnectivity between rural migrant workers and families, better familial standards of living, and greater emotional support for the rural migrant workers (Cai, 2003, pp. 472-3). This project was unable to explore earnings, or even remittance levels, as part of the inferential statistical model, limiting the applicability of findings when measuring occupational security. Without including extensive socioeconomic predictors of mental health in the model, these functional shortcomings might help explain the failure to suggest a positive association between socioeconomic and mental wellbeing among rural migrant worker samples in the findings, an association that existing studies supported.

Another possibility to explain why there was no association between socioeconomic and mental wellbeing between 2008 and 2009 was the introduction of the *Labour Contract Law* on 1st January 2008. The *Labour Contract Law* 2008 significantly improved the socioeconomic security enjoyed by rural migrant workers through, for example, requiring all employers to sign labour contracts with employees, protecting long-service employees against dismissal and limiting the use of temporary contracts (Wang et al., 2009, p. 487, 490; Xu, 2013, p. 244). Under the implementation of the *Labour Contract Law*, China's labour regulations resulted in significant improvement in employment security as relative to those of other countries. According to the measure of Employment Protection Legislation (EPL) strictness, as applied to the Organisation for Economic Co-operation and Development (OECD) countries, China ranked third in EPL strictness among OECD countries after the enforcement of the Law (Gallagher et al., 2013, p. 2). The enhancement in rural migrant workers' occupational security could plausibly raise their job satisfaction to some extent, reducing the possible socioeconomic drivers towards mental illnesses faced by these samples. The argument was supported by Qian Gao et al. (2012, p. 1196) and Haiyan Wang et al. (2009, pp. 487, 489) who claimed rural migrant workers with permanent or longterm contracts (1 year and above) were significantly more likely to enjoy social insurance coverage. Here social insurance coverage in urban China referred to pensions, medical, unemployment, work injury and maternity insurance.

8.3 Rural Migrant Workers' Mental Health in 2009

After the collapse of Lehman Brothers, between late and to early 2009, consumer demands on "made in China" products were dampened and the number of export orders from China dried up (Haan, 2010, p. 759). This resulted in a substantial surplus of rural migrant workers and created mass urban unemployment. China's National Bureau of Statistics (NBSC) statistics, released in March 2009, revealed that an estimated 23 million rural migrant workers were laid-off between third quarter of 2008 and first quarter of 2009 (Huang et al., 2010 p. 3). The majority of this cohort returned to villages and re-engaged in agricultural work (Chan 2010b p. 660; Fang & Cai, 2009, p. 513). During the first quarter of 2009, an estimated 10 million of those dismissed rural migrant workers returned to villages (Zhang, 2015, p. 69; Chen et al., 2012). Moreover, the mass unemployment caused by the 2008 financial crisis also impacted rural migrant workers who had started their small businesses in cities, in part because these small business owners were not protected by the *Labour Contract Law* (Fang & Chan, 2009, p. 516).

Unforeseen financial uncertainty significantly worsened the relative socioeconomic security of all rural migrant workers in 2009. Jikun Huang et al. (2010) argued both employed and laid-off rural migrant workers encountered some extent of barriers to maintain their socioeconomic wellbeing after the mass unemployment, leading to financial difficulties in making ends meet and sending remittance to families. As a consequence, rural migrant worker samples with varying degrees of socioeconomic wellbeing, as measured by job nature and working hours, did not suffer from different levels of mental illness in 2009, relative to those sampled in 2008.

9. Conclusions

This research demonstrated the 2008 financial crisis did not worsen the socioeconomic vulnerability faced by rural migrant workers. It is noteworthy that educational attainment is a prominent indicator if rural migrant workers would like to enhance their socioeconomic wellbeing. However, due to the unforeseen financial uncertainty and mass unemployment between 2008 and 2009, better educated rural migrant workers' occupational expectations should be realistic. Otherwise, they could be disappointed with their occupational attainment, leading to possible negative impacts on their psychosocial wellbeing. Since the introduction of 2008 *Labour Contract Law* might also affect the socioeconomic profile of rural migrant workers, future research should analyse additional waves of the MHS (i.e. wave 3, wave 4 and wave 5) to better understand both the

socioeconomic and psychosocial wellbeing of such cohorts. Moreover, additional socioeconomic factors should be taken into account in order to fully address job security faced by rural migrant workers in further detail.

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Appendix

Table 1. Migrant Household Survey (MHS)-Spatial Coverage

Spatial Unit	MHS-City
Coverage (provinces/cities)	Bengbu
	Chengdu
	Chongqing
	Dongguan
	Guangzhou
	Hefei
	Hangzhou
	Luoyang
	Nanjing
	Ningbo
	Shanghai

Shenzhen
Wuhan
Wuxi
Zhengzhou

Source: MHS Wave 1 and 2.

Table 2. Questionnaire Modules

	MHS-Wave 1	MHS-Wave 2
Personal characteristics	✓	✓
Social insurance	✓	✓
Health status	✓	✓
Supplementary health condition questions	✓	✓
Subject wellbeing	✓	✓
Risk and preferences	✓	✓
Education and training background	✓	✓
Employment situation	✓	✓
Information on young children (<= 16 years old)	✓	✓
Information on adult children (> 16 years old)	✓	
Information on spouse living apart	✓	✓
Information on parents	✓	✓
Information on siblings	✓	✓
Social network	✓	✓
Information on farmland	✓	✓
Life events	✓	✓
Comparison of satisfaction level and income	✓	✓
Household income, expenditure, assets	✓	✓
Durable good listing	✓	✓
Present housing and living conditions	✓	✓
Information on rural hometown	✓	✓

MHS refers to Migrant Household Survey.

Wave 1 data were collected between March and May 2008.

Wave 2 data were collected between March and May 2009.

Table 3. Attrition Rates

Wave 1	5,007	8,446
Wave 2	5,243	9,347
Tracked	1,821	3,512
(Attribution rate)	63.6%	58.4%
Add members		409
New samples	3,422	5,426

Source: MHS Wave 1 and 2.

Table 4. Cross Tabulations, Migrant Household Survey (MHS)

Variable	GHQ-12 Score			
	2008		2009	
	Better	Worse	Better	Worse
Gender				
Male	1,355 (94.56%)*	78 (5.44%)*	1,117 (90.74%)	114 (9.26%)
Female	873 (92.38%)*	72 (7.62%)*	665 (88.90%)	83 (11.10%)
Age				
16-24	588 (93.93%)	38 (6.07%)	435 (90.81%)	44 (9.19%)
25-34	733 (94.22%)	45 (5.78%)	611 (91.06%)	60 (8.94%)
35-44	663 (93.38%)	47 (6.62%)	528 (89.95%)	59 (10.05%)
45-54	204 (94.01%)	13 (5.99%)	167 (87.43%)	24 (12.57%)
55-64	40 (85.11%)	7 (14.89%)	41 (80.39%)	10 (19.61%)
Ethnicity				
Han	2,196 (93.65%)	149 (6.35%)	1,755 (90.00%)	195 (10.00%)
Others	32 (96.97%)	1 (3.03%)	20 (90.01%)	2 (9.09%)
Hukou				
Urban hukou	23 (79.31%)*	6 (20.69%)*	62 (93.94%)	4 (6.06%)
Rural hukou	2,205 (93.87%)*	144 (6.13%)*	1,720 (89.91%)	193 (10.09%)
Highest education level				
Elementary school	320 (87.91%)*	44 (12.09%)*	230 (82.73%)*	48 (17.27%)*
Junior middle school	1,199 (94.26%)*	73 (5.74%)*	943 (90.07%)*	104 (9.93%)*
Senior middle school	597 (95.52%)*	28 (4.48%)*	520 (93.53%)*	36 (6.47%)*
Post-secondary school	87 (96.67%)*	3 (3.33%)*	74 (89.16%)*	9 (10.84%)*
Tertiary school or above	12 (92.31%)*	1 (7.69%)*	10 (100.00%)*	0 (0.00%)*
Job nature				
Non-manual	631 (95.03%)	33 (4.97%)	617 (90.87%)	62 (9.13%)
Manual	1,106 (93.41%)	78 (6.59%)	876 (89.66%)	101 (10.34%)
Self-employed	351 (93.60%)	24 (6.40%)	202 (91.40%)	19 (8.60%)
Family business	77 (91.67%)	7 (8.33%)	17 (85.00%)	3 (15.00%)
Working hours				
< 60 hours	907 (94.58%)	52 (5.42%)	684 (90.48%)	72 (9.52%)
60-119 hours	1,236 (93.35%)	88 (6.65%)	1,015 (90.22%)	110 (9.78%)
>= 120 hours	19 (90.48%)	2 (9.52%)	10 (83.33%)	2 (16.67%)

* GHQ-12 = General Household Questionnaire-12.

The cut-off point for good and bad mental health is $\frac{3}{4}$.

* represents the chi-square value of the cross-tabulation is 0.05 or above, otherwise under 0.05.

Table 5. Logistic Regression Models, Migrant Household Survey (MHS)

GHQ - 12	2008				2009				
	Odds Ratio	95% Conf. Interval	P-value	Odds Ratio	95% Conf. Interval	P-value	Odds Ratio	95% Conf. Interval	P-value
Gender									
Male	Reference	/	/	Reference	/	/			
Female	1.30	0.91 1.87	0.153	1.26	0.91 1.75	0.163			
Age									
16-24	Reference	/	/	Reference	/	/			
25-34	0.85	0.53 1.36	0.496	1.14	0.57 1.35	0.557			
35-44	0.78	0.47 1.28	0.327	1.22	0.52 1.30	0.402			
45-54	0.77	0.39 1.53	0.451	0.37	0.68 2.10	0.538			
55-64	1.18	0.43 3.21	0.753	0.61	0.71 3.79	0.250			
Ethnicity									
Han	Reference	/	/	Reference	/	/			
Others	0.41	0.05 3.11	0.387	0.52	0.07 3.98	0.529			
Hukou									
Urban hukou	Reference	/	/	Reference	/	/			
Rural hukou	0.22	0.08 0.62	0.004	1.59	0.57 4.48	0.378			
Highest education level									
Elementary school	Reference	/	/	Reference	/	/			
Junior middle school	0.45	0.29 0.70	0.000	0.58	0.39 0.87	0.008			
Senior middle school	0.35	0.20 0.61	0.000	0.30	0.17 0.50	0.000			
Post-secondary school	0.26	0.07 0.93	0.038	0.65	0.27 1.53	0.320			
Tertiary school or above	0.53	0.06 4.73	0.566	/	/	/			
Job nature									
Non-manual	Reference	/	/	Reference	/	/			
Manual	0.70	0.92 2.21	0.108	1.20	0.84 1.71	0.307			
Self-employed	0.83	0.69 2.12	0.502	0.86	0.49 1.52	0.609			
Family business	0.71	0.59 3.35	0.446	1.63	0.45 5.86	0.452			
Working hours									
< 60 hours	Reference	/	/	Reference	/	/			
60-119 hours	1.14	0.78 1.66	0.494	0.92	0.66 1.28	0.609			
>= 120 hours	1.72	0.37 7.97	0.490	1.64	0.33 8.11	0.545			

* GHQ-12 = General Household Questionnaire-12.

* GHQ-12 cut-off point is $\frac{3}{4}$.

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