

2015

# The influence of key socioeconomic and health factors on rural migrants' health satisfaction in China

Jingfeng Liu  
*Iowa State University*

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**The influence of key socioeconomic and health factors on rural migrants' health  
satisfaction in China**

by

**Jingfeng Liu**

A thesis submitted to the graduate faculty  
in partial fulfillment of the requirements for the degree of  
MASTER OF SCIENCE

Major: Sociology

Program of Study Committee:

Robert E. Mazur, Major Professor

Frederick O. Lorenz

Abdi M. Kusow

Iowa State University

Ames, Iowa

2015

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## TABLE OF CONTENTS

	Page
<b>ABSTRACT</b> .....	iii
<b>CHAPTER 1: GENERAL INTRODUCTION</b> .....	1
Background.....	1
Thesis organization.....	5
<b>CHAPTER 2: THE INFLUENCE OF KEY SOCIECONOMIC AND HEALTH FACTORS ON RURAL MIGRANTS' HEALTH SATISFACTION IN CHINA</b> .....	6
Abstract.....	6
Introduction.....	7
The Background and Significance of the Research.....	7
Research Focus and Data.....	9
Review of Literature.....	10
Research Hypotheses.....	16
Methodology.....	16
Data description.....	17
Sampling.....	17
Operationalization.....	18
Data analysis.....	19
Results and Discussion.....	20
Descriptive statistics.....	20
Multiple linear regression analyses.....	22
Discussion.....	23
Conclusion.....	24
Summary of Research.....	24
Limitations.....	25
Implications.....	25
<b>CHAPTER 3: GENERAL CONCLUSION</b> .....	27
<b>ACKNOWLEDGEMENTS</b> .....	29
<b>BIBLIOGRAPHY</b> .....	30

**ABSTRACT**

Migrants, especially those working as unskilled laborers, often experience social, cultural, economic exclusion which can negatively impact their health. Rural-to-urban migrants in China, a country with more than 166 million rural migrants in 2013, suffer serious institutional discrimination under the household registration system (Hukou). The influence of several key socioeconomic and health related factors on China's rural migrants' health satisfaction were analyzed, using data from the Longitudinal Survey on Rural Urban Migration in China (RUMiC) 2009. Using OLS regression, factors that are significantly and positively associated with health satisfaction level are education, urban-rural income differences, low expenditures on medical services, perceived health status, and psychological status. Monthly household income and financial linkages were not significant, and lower occupational status was moderately associated with health satisfaction level, contrary to expectation. Possible explanations such as migrants' underestimating their health problems and implications of these findings in China for other countries experiencing similar migration are discussed.

## CHAPTER 1: GENERAL INTRODUCTION

### Background

Migration involves, at a minimum, people changing their place of residence from one administrative area to another. More generally, migration can be interpreted as a process of physically shifting to a new geographical area, adapting to a new social, economic, and cultural environment. It is a universal phenomenon which substantially affects lives of people and the environment in sending and receiving areas (Virupaksha, Kumar, & Nirmala, 2014). It is a fundamental population process, alongside mortality and fertility. Reasons for migration have been discussed by researchers, such as push-pull theory (Lee, 1966) referring to conditions in sending areas and receiving areas, respectively. For example, unfavorable employment conditions, environment pollution, high living costs, repressively political control, etc., can all be considered as push factors in the areas of origin for migrants. Pull factors in receiving areas include career opportunities, wide range of quality services and amenities, cleaner environment, acceptable living costs, democratic political system, etc.

Although the overall motive for migration is usually to have a better life in the destination area and/or earning income to aid family members left behind, costs are an inevitable artifact of migration. Migrants often face segregation and exclusion based on government policies and social institutions. While migrants integrate into labor markets, they are often limited to occupations with high risks of health damaging effects. At the same time, migrants are often excluded from public services (social services, public education, housing, medical services, political participation, etc.) (Urquia & Gagnon, 2011). Segregation and exclusion exist in migrant receiving areas, not only in the Global South such as China and South Africa during the apartheid era (Alexander & Chan, 2004), but also in developed countries such as the U.S.

(Abraido-Lanza, Chao, & Florez, 2005), Japan, and countries in Europe (Urquia & Gagnon, 2011). Such practices contribute to maximizing benefits derived from labor-intensive economic activities provided by migrants at the lowest price to maintain the advantageous social and economic status of residents in receiving areas (Alexander & Chan, 2004; Rechel, Mladovsky, Ingleby, Mackenbach, & McKee, 2013).

Further, threats to migrants and the wellbeing of those left behind are also documented in the research literature. Family disruption in developing countries is often detrimental for the psychological health of both migrants and their family members left behind (Lu, 2012; Lu, 2010). According to Rechel et al. (2013), 80% of labor migrants in Russia didn't have formal labor contracts, were living in hazardous conditions, and their occupations were concentrated in construction, manufacturing, and services industries. Anti-migrant attitudes were fostered by the popular media and state agencies. These factors that threaten migrants in Russia are not uncommon in other countries (Walsh & Walsh, 1987; Abraido-Lanza et al., 2005).

Therefore, issues of migrants' well-being, specifically their health status, are receiving increasingly attention from researchers. The 'healthy migrant' effect refers to a common phenomenon that migrants' health status tends to be better than that of their counterparts in receiving areas, despite their disadvantaged socioeconomic status (SES) and less access to medical services (Urquia & Gagnon, 2011). Several reasons for this effect have been noted. First, migrants tend to be self-selected, with healthy people being more willing to migrate (Frisbie, Cho, & Hummer, 2001). Second, due to limited access to medical services and lack of formal medical records for migrants in receiving areas, some illnesses and health problems do not receive a proper medical diagnosis, so migrants' poor health conditions might not be addressed (McDonald & Kennedy, 2004; Urquia & Gagnon, 2011). Third, mortality or injury rates among

migrants may be artificially low because injured or sick migrants are more likely to return to their origins for medical treatment due to limited access to medical services in receiving areas (Liang H., 2013; Fong, 2008).

The health advantages enjoyed by migrants tend to diminish over time (Landale, Oropesa, & Gorman, 2000). Pressures of acculturation in receiving areas which are unfamiliar and have many uncertainties (Salanta & Lauderdale, 2003), work-related stressors such as physically demanding and labor-intensive occupations (Walsh & Walsh, 1987), lack of access to local medical services and adoption of negative health or living habits in receiving areas are all possible explanations for this 'regression toward the mean' in the health status of migrants.

Although there are some common features across societies in policies of local governments in receiving areas regarding migration issues, significant differences also exist. For this thesis, we focus on migrants' health issues within China, the largest developing country which moved up its rank of GDP from 11<sup>th</sup> in 1980 to 2<sup>nd</sup> in 2012 (World Bank, 2012), and unprecedented scale of rural-to-urban migration that has been taking place for three decades. In total, 269 million people with rural household registration (Hukou) worked in non-agricultural sectors. Among them, the number of rural-to-urban migrant workers, i.e., rural people who migrated out of their registered township into urban areas for a living, is more than 166 million. Researchers have documented the deprived living and working conditions of rural-to-urban migrants and various types of health damaging factors in urban areas for these migrants (Liang H. , 2013; Treiman, 2012). Certain well recognized effects on migrants' health have been documented in China. Lu & Qin (2014) found that the healthy migrant effect was supported by data from a national longitudinal survey.

Compared to other countries, the situation in China shares some similarities with others countries, though certain differences also exist. Rural-to-urban migration in China is similar to that in Indonesia, a populous nation with rapid economic development during the past three decades. Both of these countries experience unbalanced development between rural and urban areas, e.g., medical services are more concentrated in urban areas (Lu, 2010). Moreover, unskilled laborers constitute the majority of rural migrants in both countries; psychological distress, information barriers and constrained access to preventive care were also found in studies of migrants in Indonesia (Lu, 2010). Compared to Indonesia, where migration is relatively free of strict institutional constraints, China has long had restrictive migration control policies led by the household registration system, namely the Hukou system (Chan & Buckingham, 2008). This system was established not only for the purpose of recording Chinese citizens' demographic information, but also to continuously fuel the economic engine based on cheap labor (Pun, 2005). The Hukou system in China can be viewed as an example of differential exclusion in developing countries, i.e., expanding supply of cheap labor without institutional support or equal financial compensation. Regarding such strict migration control, some researchers suggested that the Hukou system can be described as a quasi-apartheid 'pass' system with large scale abuses of human rights (Alexander & Chan, 2004). Conditions common to the systems in China and South Africa during the apartheid era, such as strong state control, unbalanced rural and urban development, less developed industrial structures with huge demand for unskilled labor, and stagnant rural economies which supplied labor (Alexander & Chan, 2004). But the ideological foundations of those two systems were divergent. While racial discrimination which was at the core of South Africa's apartheid ultimately led to its abolition (Alexander & Chan, 2004), what



can be done for China's Hukou system? What are the prevailing threats to Chinese rural to urban migrants' well-being, especially to their health?

In chapter two, rural-to-urban migrants in China are taken as a case study, with particular focus on how migrants' health satisfaction level is related to relevant social, economic and other factors.

#### Thesis organization

This thesis was organized using the alternative format as specified by ISU's Graduate College. Chapter one is this general introduction. Chapter two is a case study in the format of a journal article with an introduction, literature review of previous studies, methodology, results, discussion and conclusions with a summary of the case study, limitations, and implications. Chapter three contains the general conclusion of the case study and its implications in a broader context.

## **CHAPTER 2: THE INFLUENCE OF KEY SOCIECONOMIC AND HEALTH FACTORS ON RURAL MIGRANTS' HEALTH SATISFACTION IN CHINA**

Jingfeng Liu, Robert Mazur

### Abstract

Migrants, especially those working as unskilled laborers, often experience social, cultural, economic exclusion which can negatively impact their health. Rural-to-urban migrants in China, a country with more than 166 million rural migrants in 2013, suffer serious institutional discrimination under the household registration system (Hukou). The influence of several key socioeconomic and health related factors on China's rural migrants' health satisfaction were analyzed, using data from the Longitudinal Survey on Rural Urban Migration in China (RUMiC) 2009. Using OLS regression, factors that are significantly and positively associated with health satisfaction level are education, urban-rural income differences, low expenditures on medical services, perceived health status, and psychological status. Monthly household income and financial linkages were not significant, and lower occupational status was moderately associated with health satisfaction level, contrary to expectation. Possible explanations such as migrants' underestimating their health problems and implications of these findings in China for other countries experiencing similar migration are discussed.

## Introduction

### The Background and Significance of the Research

Migration – internal and international - is occurring on a massive scale and has significant consequences for migrants and societies. Prominent examples include Latino migration to the U.S. (Landale, Oropesa & Gorman 2000; Escobar, Nervi & Gara 2000; Abraido-Lanza, Chao & Florez 2005) and rural to urban migration fueling massive urbanization in Indonesia and China (Chan & Zhang 1999; Lu 2010; Hugo 2002). Significant differences in the distribution of public social resources (e.g., health care, education and housing) and in the level of economic development exist between migrant sending areas and destinations. Migrants are exposed to different cultural customs, economic structures, and systems of social stratification (Lindstorm & Munoz-Francoa, 2006), and hazardous working environments, higher living expenses, reduced social support (especially those living without family members), and limited access to public welfare systems for health care and medical support (Walsh & Walsh, 1987; Mou, et al., 2009; Lu, 2010). Factors that influence migrants' health status have become a critical aspect of research on migration.

While most internal migration is driven by economic factors, migrants are entitled to important rights, and should be able to access labor markets and social services without institutional barriers or discrimination (Lu, 2010). In China, however, a dual household registration system (Hukou system) was created to distinguish rural and urban residents (Chan, 2010, Zhang 2001). Not merely a residence registration system, this system constitutes two politically, economically, culturally and socially differentiated societies (Liang Z. , 2004; Fan, 2002; Li & Li, 2007; Cai, Zhang, & Du, 2002; Chan & Buckingham, 2008). The 1958 *Act of Household Registration in the People's Republic of China* established the segregation of rural

and urban households and controlled their spatial mobility (Wu & Treiman, 2004). In education, medical care and prevention, housing, occupational insurance, etc., the Hukou system divided the country in two different societies, with a huge gap in income between rural and urban areas (Knight & Song, 1999). Most benefits resulting from decades of economic development accrue to urban residents, with the well-being of people with rural Hukou and their environment experiencing deterioration (Treiman, 2012).

After two decades of strict migration control, rural to urban migration was stimulated by policy reforms in the 1980s when global investment began to flood into China's cities with a rapidly increasing demand for low-skilled laborers. Although restrictions imposed by the Hukou system began to be relaxed, institutional barriers still restrict rural migrant workers from accessing public services such as health, unemployment and occupational insurance, enrollment of their children in local public schools without extra charges. The level of education that people receive is one of the most important social assets for achieving a better life (Chan & Buckingham, 2008; Wang F., 2004; Palmer & Xu, 2013).

Hence, it is valuable to understand how health satisfaction level and relevant factors are interrelated in China where household registration system constrains freedom of movement. This system maintains inequitable access to social welfare and public resources for people with different types of Hukou. The scale of migrant workers living between these 'two worlds' due to the severe lack of institutional support and ability to reside permanently is remarkable in human history. In 2013, the population of migrant workers who travel outside the area of their registered township is more than 166 million, while the total number of migrant workers is approximately 269 million (NBS 2014).

Migrant workers have quite limited access, if any, to city health care services, public education for children, living and housing insurance and other public welfare under this dual household registration system (Wu & Treiman, 2004; Liu, 2003). Nonetheless, they significantly contribute to economic production (Palmer & Xu, 2013); according to the Fifth National Census (NBS 2000), rural migrant workers are prominent in the tertiary industries (52%), manufacturing (68%), and construction (80%) and contribute to local and central governmental finance through taxes. Without official local resident identity (not limited to non-agricultural Hukou, but also having a different origin from a city's natives) they have little political and social visibility, participation or bargaining power to secure their legally enshrined civil and labor rights, thus constitute a vulnerable social group (Liang H. , 2013; Zhan, 2011).

#### Research Focus and Data

This research focuses on the health status of migrant workers, specifically factors that influence their perceived health satisfaction level. There is a subtle but important difference between self-reported health status and satisfaction level of health status. The former reflects self-evaluation of one's health status, while the latter could reflect one's ability and/or willingness of making changes in current status. Sometimes people might be aware of problems regarding their health status, but awareness doesn't necessarily lead to action to improve their health status, especially when they feel satisfied in their current status or there are barriers (e.g., too expensive) to make changes. Health satisfaction level is more directly related to the attitude about one's health, if people is not satisfied with their health status, they are more likely to take real actions to resolve this discordant situation. After all, actions are directly triggered by dissatisfaction rather than perceptions about the situation. Hence, in this study we are interested

in how key factors affect migrants' health satisfaction level, an important prerequisite to seeking qualified medical care or defending their legally protected right as citizens and workers.

We analyze the Longitudinal Survey on Rural Urban Migration in China (RUMiC) initiated by researchers at the Australian National University, the University of Queensland and the Beijing Normal University and supported by the Institute for the Study of Labor (IZA). RUMiC was established to study the patterns and effects of migration in China, and was designed to provide a longitudinal dataset covering a five-year time span. The survey of rural-to-urban migrants (the Urban Migrant Survey in this dataset) was selected for the study. Explanatory variables from the RUMiC pertaining to migrants of interest for understanding self-report satisfaction level of health condition are education level, employment type, income, medical insurance coverage and personal expenses for sickness and injury, psychological health and self-report health status in last three months and social capital/networks. The interrelations among those variables based upon previous literatures are discussed below.

## Review of Literature

The health of international and internal migrants has been the subject of significant research interest (Abraido-Lanza, Chao, & Florez, 2005; Escobar, Nervi, & Gara, 2000; Hugo, 2002; Lindstorm & Munoz-Francoa, 2006; Lu, 2010; Palmer & Xu, 2013; Liang H. , 2013). Analyses of migrants' health status generally involve factors such as level of education, employment type, years in present occupation, social capital, income, and the individual or combined effects of these variables on medical expenditures, psychological status, and health satisfaction level. Migrant workers tend to toil long hours, receive little or no training, are

exposed to environment hazards and risks of occupational injury, and have little job security (Chen et al. 2014; Gransow et al. 2013).

Inconsistencies exist between protection of migrants' occupational health reflected in law and official policies and the lack of prevention and protection against occupational injuries (Gransow, Zheng, Leong, & Ling, 2013). Medical treatments that employers are legally required to provide for workers' injuries are often unfulfilled. Because medical compensation from employers and social insurance programs are either insufficient or wholly lacking, injured migrant workers often have to bear considerable expenses for their medical treatment (Chen, Ding, Cook, & Pong, 2014), often seeking medical services from informal or unlicensed providers because of financial reasons (Chen, Ding, Cook, & Pong, 2014) or foregoing treatments altogether. Liang (2013) found that migrant workers tend to 'get used to' their hazardous working conditions and pay less attention to their health status out of sense of helplessness, with little hope that workers can obtain reimbursements for medical expenses or improve their working conditions. Under such circumstances, perception of one's health status becomes very important for workers, particularly for migrants with chronic disease or exposed to heavy metals or harmful chemicals which are not readily detected in the short term but which negatively affect human health over the long term (Liang H. , 2013). Awareness of one's health status is a vital precondition for seeking qualified medical care or organizing together to defend the right to proper medical care, a decent working environment, legally protected compensation for occupational harm etc. The latter is an essential aspect for labor and migrants protection, though it is beyond the scope of this study.

This neglect of personal health conditions and health related hazards in the workplace is also derived from the assumption that migrants are usually positively selected as having good

health (McDonald & Kennedy, 2004; Frisbie, Cho, & Hummer, 2001; Hayward & Heron, 1999). Migrants are usually healthier than average among people in their communities of origin since good health is a necessity for migration to new areas (McDonald & Kennedy, 2004; Chen, Ding, Cook, & Pong, 2014). Owing to an unfamiliar environment, possible institutional barriers, higher expenses for health and medical care and higher living expenses during the recovery period after illness or occupational injury, migrants often obtain health or medical care in their areas of origin (Hu, Cook, & Salazar, 2008; Xiang, 2007). Migrants have limited access to health screening and prevention services in their destination area, resulting in under-diagnosis of health problems and underestimating the severity of their illness by refusing to seek formal medical care (Chen, Ding, Cook, & Pong, 2014). All of these might lead to under-recording of migrants' health problems.

Moreover, any initial health advantage that migrants may have tends to decrease or vanish with length of urban residence (Liang H. , 2013; Pun, 2005; Abraido-Lanza, Chao, & Florez, 2005; Escobar, Nervi, & Gara, 2000). Deteriorated health status might due to unfamiliar social and environmental contexts, intensive and exhaustive daily work, health damaging working and living conditions, and insufficient income to pay for medical services (Liang H. , 2013; Walsh & Walsh, 1987).

Regarding the influence of household income on ability and willingness to pay for health and medical care, psychological health status and overall satisfaction level of health, the existing literature is also a helpful guide. Regarding employment, 31% were working in manufacturing, doing mainly low skilled, physically demanding, manual work (Pun, 2005; NBS, 2014), and 22% were working in construction (with high risk of occupation-related injury) (Pun, Lu, & Zhang 2012; NBS 2014). According to the official sources (NBS 2014), 84.7% worked over 44 hours per week, the maximum working hours per week stipulated in the 1994 Labor Law. Although



household income has been increasing since economic reform in 1980s even after taking inflation into account, the income gap and especially the benefits associated with public welfare between the migrant population and citizens with urban Hukou have not narrowed significantly (Treiman, 2012). In 2012, according to the NBS (2013), the average annual income for urban citizens was about 29547 RMB (\$4766), while the average annual income for migrant workers was 25829 RMB (\$4166) (NBS 2013). The difference is not as noticeable as taking the other influential factors into calculations. Coverage rates of the five basic types of insurance are all very low: occupational (29%), medical (18%), old age (16%), unemployment (9%), and maternity (7%) (NBS 2014). Even though the income gap between these two groups with different household registration appears to be small, disposable income is quite limited for migrants compared to urban citizens. Since the ratio of per capita disposable income between urban and rural households is 3.03:1 (NBS 2014), a large portion of migrant workers' income needs to be sent back to their hometown for their children's and parents' daily expenses, education and medical care, which is similar to studies of migrants in Indonesia (Lu, 2010). Limited expenditures by migrants for their own needs in urban areas has negative implications for their health (Lu, 2010); Poortinga (2006) found that a limited increase in their income might not increase migrants' chances of having better medical services or achieving better health.

Education attainment and professional training are usually deemed to be an important pathway to upward social mobility. Non-manual work usually requires more education and skills (Treiman, 2012). Enrollment in high-quality public schools in urban areas involves different types of institutional and economic barriers for migrants (Chan & Buckingham, 2008; Wang F. , 2004; Chan K. , 1994). People with higher levels of education are better informed, eager to understand advances in the health sector, and more readily use such services (Song & Burgard,

2008) . However, some studies found a negative effect of education on migrants' self-reported health (Palmer & Xu, 2013; Yuan, 2009), because they tend to have higher expectations for their financial and social return that cannot be met because of social barriers such as the Hukou system or social and cultural identity-based exclusion (Zhan, 2011). When they fail to realize their expectation, their satisfaction level could be worse than for people with lower education and correspondingly lower expectations.

Overall psychological status tends to deteriorate after leaving one's origins, mainly because of separation from family members, sudden loss of former networks and difficulties of establishing new ones, and the lack of formal social support mechanisms in their destinations (Sluzki, 1992; Palmer & Xu, 2013; Li, Wang, Ye, Jiang, Lou, & Hesketh, 2007; Li, Stanton, Fang, Xiong, Yu, & Lin, 2009). In particular, the programs for psychological counseling and mental health services were insufficient generally, and people who seek counseling often experience stigmatization and discrimination (Phillips, 1998; Chen J. , 2011).

Besides the direct impact of social capital on health satisfaction (Schultz, O'Brien, & Tadesse, 2008; Poortinga, 2006), social capital might directly impacts psychological status (Sluzki, 1992; Lu, 2010) and, thereby, self-rated health satisfaction. The influence of social capital can be context sensitive. Its influence can be simply one of the elements in combination with cultural or economic factors (Abel, 2008; Xu, Perkins, & Chow, 2010). Some studies found few connections between personal networks and migrants' health status (Yuan, 2009), while others argued that neighborhood cohesion is positively associated with self-reported health (Wen, Fan, Jin, & Wang, 2010). Some common features of social capital among rural migrant workers in China is that they are more likely to organize according to personal and informal ties based on kinship or with those from the same area of origin rather than through formal organizations

(Qian, 2008; Zhang, 2001; Liang H. , 2013). They usually live in suburban areas of the cities and have limited, if any, daily contact with the urban residents, which means the social capital is difficult to accumulate in local urban communities (Liang H. , 2013; Zhang, 2001).

Researchers have investigated the influence of educational attainment, employment type, income, health care expenditures, social capital and psychological status on migrants' health status and self-reported health status (Chan & Buckingham, 2008; Chen, Ding, Cook, & Pong, 2014; Chen J. , 2011; Gransow, Zheng, Leong, & Ling, 2013; Wen, Fan, Jin, & Wang, 2010). Few researchers studied the influence of those factors on the satisfaction level of health status. But the distinction between self-reported health and satisfaction level of one's health condition is valuable for investigating the extent to which rural migrant workers with limited economic and social resources express concern and make real efforts to improve their health status, working and living environments. According to previous researchers, migrant workers in China are more likely to neglect or overlook their health problems, given their limited options (Liang H. , 2013).

A useful perspective can be gained from the theory of cognitive dissonance, which indicates that individuals tend to either adapt their cognition/attitude/belief to align with their situation or change their behavior or situation to reduce the dissonance and mitigate the psychological stress (Festinger, 1957). Migrants with limited resources to change their situation may adapt their perspective on their health status by downplaying any health problems, or filtering out negative information about their living or working environment.

However, the existed literature on migrants' health satisfaction is quite limited. Some studies focused on differences in the perceived quality of health care services between local residents and migrants, instead of satisfaction level about personal health status (Li, et al., 2014). Some focused on migrants' overall wellbeing, job satisfaction and related factors compared to

the average satisfaction level of local residents (Zhu, Wang, Fu, Zhou, & Zhao, 2012; Zhu, Geng, Yang, Chen, Fu, & Jiang, 2013; Aalto, et al., 2014). Migrants' lower health-related quality of life and lower job satisfaction were revealed in these studies. Numerous studies investigated factors that influence migrants' mental wellbeing. Variables such as length of stay in destination areas, acculturation stress, educational intervention, socioeconomic status, self-rated economic and health were all associated with migrants' mental health (Qiu, Caine, Yang, Chen, Li, & Ma, 2011; Zhu, Geng, Yang, Chen, Fu, & Jiang, 2013; Li, et al., 2014; Im, Lee, & Lee, 2014). Few studies focused on migrants' health satisfaction. Our study attempted to address this research gap by analyzing the effects of factors that influence migrants' health satisfaction level, thereby, understanding how rural migrants with limited social and economic resources perceive realities around them. More specifically, to what extent are they satisfied with their health status when experiencing disadvantaged medical and social status?

### Research Hypotheses

Factors hypothesized to positively influence level of health satisfaction are: education level, occupational status, household income, urban vs. rural income comparison, social capital in terms of financial linkages, *low* expenditure on medical services, perceived health status, and psychological status.

### Methodology

This research analyzes the influence of education level, occupational type, income, social capital (financial linkages among their social network, more specifically), expenditures on medical services, perceived health status, and psychological status on health satisfaction level.

## Data description

This study utilizes data from three parts of the Longitudinal Survey on Rural Urban Migration in China (RUMiC) conducted in second wave in 2009: the urban, rural and the migrant household survey. The migrant household survey was also designed to study the overall pattern and influence of massive migration in China. For this study, only the survey of rural-urban migrants ('urban migrant survey') was utilized for analysis. Data at the individual level are primarily focusing on household composition, education and employment status and the overall situation of their children. At the household level, heads of the household or their spouses were asked questions about their social networks, lifecycle events, household income and assets, living conditions and information on their rural home villages.

## Sampling

The survey of migrants was conducted by a professional survey organization (Datasea Marketing Research), covering 15 major migrants receiving cities in nine provinces or metropolitan areas in China. The design of the survey questionnaire was a collective effort involving researchers from Australian National University, University of Queensland, Beijing Normal University and Institute for the Study of Labor (IZA). A large of rural migrant workers in Chinese cities live in dormitories or construction sites near their workplaces. The sampling was based on workplaces rather than residences. The sample size for each of these 15 cities was proportional to the population size of the city. The total number of workers was recorded in addition to the number of rural migrant workers in each workplace, so that the survey team could estimate the proportion that rural migrants represented among all workers. A random sample of migrant workers was selected from each workplace. Overall, there were some difficulties tracking rural migrant workers due to unstable employment status and urban residence, including

seasonal and circular migration. The average attrition rate from the first wave of the survey to the fourth one was 53%. The project did not identify any possible bias associated with sample attrition.

Individual level data include education level, occupation type, perceived health status, cost of medical services, and psychological status. Household level data concerned household income, urban income comparing to those of people in their home villages, and the dependent variable, health satisfaction level; only one representative, either the household head or the spouse, was asked to respond. A total of 3422 cases are in the second dataset. The third dataset contained data on financial linkages within individuals' social networks; only responses from the household head were used in this study. This analysis is based on data for the 2517 households for which complete data are available.

#### Operationalization

- Education Level of the household head – detailed responses were recoded into 3 ordinal categories (elementary school or less; up to junior middle school; higher than junior middle school)
- Occupational Type of the household head – detailed responses were recoded into 4 ordinal categories, reflecting increasing job skill level (construction and manufacturing; security, property management or service and transportation; sales, retail and other moderate skilled activities; professionals and private business and self-employed)
- Household Income - the amount of monthly family income from various sources (labor income, net income of the family business, asset income and transfer income) was divided by the OECD-modified scale for household consumption units (a value of 1.0 for the household head, 0.5 for each additional adult member, and 0.3 for each child)

Haagenars *et al.* (1994) was recorded into three income groups (up to 1250 RMB (\$202); 1250-1999 RMB (\$323); 2000 RMB or more)

- Comparison of Urban Income to Rural Income – comparison of the migrants' household income with income of people in their home villages - three categories (urban lower than rural; urban and rural are similar; urban higher than rural)
- Financial Linkages – receiving and/or giving money (involving relatives or friends) – three groups (no giving no receiving; either giving or receiving; gave and received)
- Cost of Medical Services - expenditures on medical services in 2008 recoded into 3 groups (none; less than 200 RMB (\$32); 200 RMB or more)
- Perceived Health Status – three categories (average or poor; well; excellent)
- Psychological Status – a combined index for self-reported psychological status based on four questions (felt that you are playing a useful part in things; felt constantly under strain; been able to enjoy your normal day to day activities; been feeling unhappy and depressed) with a three-item scale for each questions. The response coding was reversed for the second and fourth items, so that all scores then progressed in a positive direction. Response scores for these four questions were combined into an index, with values ranging from 4 to 12, and then collapsed range into three categories (4-8 = low to moderate; 9-10 = good; 11-12 = very good)
- Health Satisfaction - three categories (not satisfied or uncertain; satisfied; very satisfied)

#### Data analysis

SPSS statistics software version 19.0 was utilized, mainly using the OLS regression model to estimate the effect of all independent variables discussed above on the dependent variable, namely, health satisfaction level.

## Results and Discussion

### Descriptive statistics

Several key socioeconomic dimensions are considered in this study. A modest proportion of migrant household heads interviewed (21%) attained education higher than junior middle school. Most (68%) had up to junior middle school level education, while a few (11%) had only elementary school or less. Migrants had diverse occupations: 24% were in construction or manufacturing; 33% in security, property management, or service and transportation; 28% in sales, retails or other moderate skilled activities; and 16% were professionals, ran a private business or were self-employed. Most (81%) were in their current occupation less than 8 years. The average household monthly income was 1736 RMB (\$280), ranging from 300 RMB (\$48) to 9000 RMB (\$1452); 31% of households had income up to 1250 RMB (\$202), 38% had income 1250-1999 RMB (\$323), and 31% had 2000 RMB or more. When comparing their urban income with that of their counterparts in their home villages, 47% viewed their present income as higher, 41% considered them to be similar, and only 12% thought that they now earned less. Regarding social capital, the dimension measured was financial linkages - receiving and/or giving money (involving relatives or friends) in the preceding 12 months; 61% neither received nor gave any money, 12% either received or gave money, and 27% both received and gave money.

Several key dimensions of health are included in this study. In 2008, 34% reported no money spent on medical services, 37% spent less than 200 RMB (\$32) on medical services, and 29% spent 200 RMB or more. In terms of their current health status, 15% reported average or poor, 48% felt well, and 37% reported excellent health. The index for self-reported psychological status showed that 34% were not very confident in handling daily stresses and tasks and didn't



enjoy their daily lives, 43% were confident in handling daily stresses and tasks and did enjoy daily lives, and 23 % were feeling very confident in handling daily stresses, tasks and did enjoyed their daily lives. For the dependent variable, level of health satisfaction, 14% were very satisfied, 61% were satisfied, 20% were uncertain, and 6% were not satisfied.

Table 1 presents the means, standard deviations, and correlations for all variables. Perceived health status, psychological status, educational level and comparison of urban to rural income are positively associated with health satisfaction, while expenditure on medical services and occupation type are negatively associated with health satisfaction. What is especially noteworthy is the correlation between perceived health status, a self-reported assessment, and health satisfaction level (0.398), which is distinctively higher than other correlations. The high correlation between these two variables might reflect that they are both subjective measurements. Based on one of our initial purposes in this study, i.e., investigating the possibility of underestimating personal health problems, more objective measurements are suggested for future researches.

**Table 1** *Summary of Means, Standard Deviations, and Correlations for all variables (n=2517)*

	M	SD	Correlations									
			1	2	3	4	5	6	7	8	9	
1. Health Satisfaction Level	1.880	.615	-									
2. Education Level	2.090	.560	.094	-								
3. Occupation Type	2.360	1.011	-.036	.077	-							
4. Household Income	2.000	.789	.034	.105	.069	-						
5. Comparing Income	2.350	.684	.091	.023	.055	.174	-					
6. Financial Linkages	1.660	.876	-.031	.032	.045	.065	.065	-				
7. Expenditure on Medical Services	1.950	.794	-.174	.017	.010	.022	.018	.099	-			
8. Perceived Health Status	2.210	.689	.398	.084	.003	.086	.080	-.069	-.173	-		
9. Psychological Status	1.890	.747	.174	.048	.009	.086	.079	-.047	-.125	.258	-	

### Multiple linear regression analyses

Table 2 presents the results of multiple linear regression. Five of the eight variables analyzed are significantly related to migrant workers' level of health satisfaction. As hypothesized, health satisfaction is higher for those who have more education, view their urban income as higher than their rural counterparts' income, had lower expenditures on medical services, have good perceived health status, and have good psychological status. Three variables did not yield the expected results. Household income and financial linkages were not significant, and occupation type had a moderate negative relationship. This model explains 18.3% of the variance in migrant workers' level of health satisfaction. Multicollinearity among the independent variables in this model was checked and not significant; the Variance Inflation Factors for all independent variables were only slightly above 1.

**Table 2** *Multiple Linear Regression Model of Health Satisfaction level (n=2517)*

Independent Variables	Standardized Estimate	T Ratio	p-Value
Education Level	0.066	3.623	<0.001***
Occupation Type	-0.044	-2.405	0.016*
Household Income	-0.015	-.813	0.416
Comparing Income	0.063	3.399	0.001**
Financial Linkages	0.004	.197	0.844
Expenditure on Medical Services	-0.106	-5.749	<0.001***
Perceived Health Status	0.354	18.592	<0.001***
Psychological Status	0.063	3.371	0.001**
R-squared	0.183		

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

## Discussion

Education was significantly and positively related to satisfaction level of health, a result consistent with previous research (Treiman, 2012; Chan & Buckingham, 2008; Wang, 2004). The moderate negative relation between occupation type and health satisfaction is rather surprising. The lowest ranked occupation type was construction or manufacturing. Workers in these sectors usually have intense labor demands, less job security, and the highest risk of occupational injuries (Liang H., 2013; Pun, Lu, & Zhang, 2012; Gransow, Zheng, Leong, & Ling, 2013). Conversely, those in the highest ranked occupations are professionals and business owners who usually have much better working conditions and higher incomes. From this perspective, migrants' actual health status is expected to be better for those with higher ranked occupations (Treiman, 2012; Chan & Buckingham, 2008). This result suggests that migrant workers may underestimate their health related problems. Migrant workers in disadvantaged occupations are usually powerless to change their working and living conditions. Consequently, adapting their perceptions about their situation (underestimating their real health problems or developing an overly-positive view of their health conditions) might reflect unconscious efforts to resolve their cognitive dissonance (Festinger, 1957). This method of mitigating mental stresses for disadvantaged people has been observed in other studies in China (Peilin Li and Wei Li, 2007).

In terms of the non-significant relationship between household income and health satisfaction level, higher income means more available resources to change their real condition and correspondingly, less likelihood of overestimating their actual health status. Lu (2010) and Poortinga (2006) found out that limited income increasing might not significantly improve migrants' living and health conditions, because a large portion of their income usually needs to

be sent back to their communities of origin to support the relatives they left behind. However, those who view their income in the city as higher than rural incomes had higher health satisfaction, as hypothesized.

That financial linkages was not significantly related to health satisfaction suggests that the resource exchanges address other types of needs (Yuan, 2009). This relationship tends to be context sensitive (Abel, 2008; Xu, Perkins, & Chow, 2010). In China, migrant workers' social networks tend to be informal and kinship or origin based rather than based on their urban community of residence, given their high level of mobility (Liang H. , 2013; Qian, 2008; Zhang, 2001).

The significant negative relation between medical expenditures and health satisfaction level, as expected, means that they did not have to spend hard earned income on medical services due to good health. Households with high medical expenditures may have members with serious illness or injury, and thus are more likely to report low health satisfaction. That both perceived health status and psychological status were positively associated with health satisfaction, as hypothesized, is consistent with previous research (Liang H., 2013; Pun, 2005).

## Conclusion

### Summary of Research

This study investigated the influence of rural-to-urban migrants' educational level, household income, urban-rural income comparison, financial linkages (as an indicator of social network), expenditures on medical services, perceived health status, and psychological status on their health satisfaction level in Chinese cities. It utilized data from the longitudinal survey on

rural-to-urban migration in China initiated by researchers at Australian National University, University of Queensland and Beijing Normal University, supported by the Institute for the Study of Labor.

The results of this study are similar to some previous studies on the relationships between key factors and health satisfaction level such as the positive effect of education, rural-urban income comparison, perceived health status, and psychological status on health satisfaction (Liang H., 2013; Pun, 2005). Some variables' are not significant, such as household income and financial linkages, possibly because of certain measurement features, yet insignificant results have also been found in previous research (Lu, 2010; Poortinga, 2006; Yuan, 2009). Some variables were consistent with the theory of cognitive dissonance (Festinger, 1957). This research results suggest the plausibility of underestimating health problems and overly-positive view of health condition for some rural-to-urban migrants.

#### Limitations

Data analyzed were drawn from three files with individual level and household level data. Only household heads were utilized from individual level data which were combined with the dataset in household level. Since heads of households were predominantly male, possible gender differences were not assessed. Operationalization of concepts could always be more comprehensive, for instance, other variables to capture other dimensions of social capital.

#### Implications

To the extent that the cognitive dissonance theory is applicable in this context, then problems and negative consequences of those problems are noteworthy for the academic community and policy makers. More educational programs may be needed for migrants to help them to understand their health status and recognize potential health threats. Policies and

programs to improve working and living conditions of this underprivileged group of migrant workers and their families' population are needed. As a country with large scale migration and urbanization, the situation in China could be instructive for other countries which also experience massive migration. Comparative studies of migration could lead to valuable insights regarding commonalities and important differences.

### CHAPTER 3: GENERAL CONCLUSION

Although remarkable achievements on economic development and poverty reduction have been made in China, it is still a developing country with many critical issues, problems and social conflicts. Whether these problems will be treated with seriousness and determination will have a profound influence on the future trajectory of this country with 18.9% of world's population (Chinese Official Population Clock, 2012). As a country with sharply unbalanced urban-and-rural development reflected by Gini coefficient of 0.449 in 2003 (Wu & Perloff, 2005) and a 'quasi-apartheid pass system' (Alexander & Chan, 2004), rural migrants have to face many difficulties and injustices in urban areas. In the same matter that Treiman (2012) noted that "China built an urban welfare state on the backs of the peasants," it can be stated that the development of metropolitan areas in China was built on the backs of rural-to-urban migrants. It is not only a concern of human rights but also a concern of social justice to pay more attention on migrants' well-being in China.

In this study, several key socioeconomic dimensions (education attainment, occupation type, monthly household income, urban-rural income comparison and social capital) and several key dimensions of health (expenditure on medical services, self-reported health status, and psychological status) of rural migrant workers were investigated in terms of their influence on migrants' health satisfaction level via data from the longitudinal survey on rural-to-urban migration in China initiated by researchers from Australian National University, University of Queensland and Beijing Normal University, and the Institute for the Study of Labor.

Positive effects of education, urban- rural income comparison, perceived health status, and psychological status on health satisfaction were found in the OLS regression model as hypothesized, consistent with previous research. The negative effect of medical expenditures on

health satisfaction was also as expected. While effects of household income and financial linkages were not significant, a probable the reason may be measurement issues, but similar insignificant results were also documented in previous research (Lu, 2010; Xu, Perkins, & Chow, 2010). Further, the negative effect of occupation type on satisfaction level might suggest, from the perspective of cognitive dissonance theory, the plausibility that some rural-to-urban migrants underestimate their health problems and take an overly-positive view of their health conditions. Research regarding migrants' tendency of having an overly-positive view of health conditions from the perspective of cognitive dissonance theory is limited in the literature. More in depth investigation of the applicability of this theory to issues of migrants' health satisfaction is warranted.

As a country with large scale migration and urbanization, the experiences and threatened well-being of both migrants and relatives they left behind in China could be instructive for other countries which also experience massive migration to navigate better pathways in terms of policy making and institutional protection for migrants with lower socioeconomic status. Both commonalties and differences between the situation in China and other countries are valuable so that more comparative studies from this point of view should be encouraged in future research.



## **ACKNOWLEDGEMENTS**

I would like to thank my committee chair, Dr. Mazur, and my committee members, Dr. Lorenz and Dr. Kusow for their guidance, support and instructive suggestions throughout the course of this research. Dr. Mazur's knowledge, experience, encouragement, meticulous and hardworking attitude and generous assistance are especially appreciated, particularly to improve my research and writing skills that will benefit my career and life in the future.

In addition, I would like to thank my best dear friend, Yani, for helping and encouraging me throughout the whole process of doing the research, and for making my time at Iowa State University a unique experience and an irreplaceable memory.

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