



Personal, Social, and Ecological Influences on Loneliness and  
Satisfaction among  
Rural-to-Urban Migrants in Shanghai, China

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ABSTRACT

This study examined personal, social, and ecological influences on loneliness and satisfaction among rural-urban migrants in Shanghai, China. Data used in this study were from the Shanghai Rural-to-Urban Migrant Worker Survey conducted by the Institute of Demographic Research, Fudan University, China. A host of demographic, socioeconomic, psychological, and ecological factors were identified as strong correlates of loneliness and satisfaction. In addition to upward social mobility manifested in socioeconomic achievement and improvement in living condition, living arrangement, psychosocial factors, and ecological contexts also exhibited important influences on mental well-being of rural-to-urban migrants in Shanghai. Friendly and helpful attitudes and equal treatment of the receiving urban community were associated with better mental health of these migrant workers. The effect of private or institutional discrimination was overwhelmingly negative on migrant mental well-being over and above other demographic, socioeconomic and psychological variables. Establishing neighborhood public facilities such as library and gym and taking measures to encourage family reunion of the migrants seem to be potentially fruitful ways to promote migrant mental well-being in China. But most essentially, policy makers should consider ways to reduce institutional inequalities disadvantaging rural-to-urban migrants and to help change the perennial image of rural-to-urban migrants as secondary citizens in cities.

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## **Personal, Social, and Ecological Influences on Loneliness and Satisfaction among Rural-to-Urban Migrants in Shanghai, China**

### **Background**

A considerable amount of evidence has shown that migration is associated with increased risks for poor mental and physical health (Kasl and Berkman 1983; McKay, Macintyre, and Ellay 2003; Noh and Avison 1996). However, much of the current literature that addresses the link between migration and health has been limited to internal or international migrants seeking permanent resettlements in the Western societies. Few attempts have been made to examine the health issues of migrants in Asia and other developing areas who are, in most part, economically driven and temporary migrants.

China is an interesting and unique setting to study rural-to-urban migrants and their mental well-being. It is a developing country, the most populated in the world, and undergoing explosive growth and large-scale social transformations as a result of the three-decade economic reforms from a planned economy toward a market economy. Concomitant with these dynamic societal forces in recent decades is the rapidly growing size of rural-to-urban migrant population in nearly all large Chinese cities. The Chinese governmental statistics show that there are approximately 114 million rural-to-urban migrants in China accounting for 23.2% of total rural labor and 9% of the total population in China (China National Bureau of Statistics (CNBS) 2003). Nationwide, 13% of all rural families have at least one family member who migrated to urban areas (China National Bureau of Statistics (CNBS) 2001). According to 2000 Chinese Census data (Statistics Bureau of Shanghai 2002), in Shanghai, one of the fastest growing city in China attracting

great numbers of rural laborers, 25 percent of its entire population, or nearly 4 million individuals, were designated as rural-to-urban migrants who came to Shanghai from rural areas, townships, or small cities to pursue economic opportunities and better life chances. This number alone is close to the total population size of Norway or Singapore! Moreover, as modernization, industrialization, and globalization in China proceed, it is anticipated that the rural-to-urban migration process will accelerate at an annual increase of approximately 8.5 million migrants in the coming decade (Li et al. 2006b). Mainly galvanized by factors such as the growingly relaxed governmental control on rural-to-urban population movement starting from the late 1970s,<sup>1</sup> the increasing rural-urban income disparity,<sup>2</sup> the rural labor surplus,<sup>3</sup> and the simultaneous increase of labor needs of

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<sup>1</sup> Until recently, there had been strong governmental control on migration from rural to urban areas in China mainly through the official household registration (“*hukou*”) system (Zhang 2001). Under the “*hukou*” system, each individual is officially registered as either a rural or an urban resident and rural residents are not permitted to freely relocate to urban areas (Li et al. 2006a). Even after the economic reform took place in the late 1970s and rural-to-urban migration became more and more attractive and feasible, the administrative procedures required of migrants to legitimately stay and work in cities were often cumbersome and costly. Meanwhile, local governments typically restricted the types of work available to migrants by proscribing the hiring of migrants in certain occupations (Li et al. 2006b). This situation has improved in recent years. For example, the Beijing municipal government abolished the employment restriction in 2001 and waived some fees for the “work/residency permit” in 2002. In addition, migrants without the temporary residency permit are no longer subjected to incarceration and/or deportation by the urban public security agencies due to the nationwide abolishment of the deportation law in 2003. These regulatory changes are, in part, responses to the growing concern about the welfare of rural-to-urban migrants.

<sup>2</sup> Approximately 70% of the Chinese population live in rural areas. 25% of rural Chinese households lived on less than one US dollar a day in 1999, compared to only 1% of urban households in the same economic status (Anderson, Huang, and Ianchovichina 2003). Rural incomes were 55% of urban incomes in 1983 compared to 31% in 2005 (\$402 per capita in rural areas and \$1,296 per capita in urban areas) (China National Bureau of Statistics (CNBS) 2006(a)). Nationwide, since the start of economic reforms in 1978 and as a result of the consequently rapid economic growth, China has experienced the largest increase in income inequality of all countries for which comparable data are available (Yang 1999). According to the World Bank (1997), China’s Gini coefficient increased from 28.2 in 1981 to 38.8 in 1995 based on official survey data. Another study that used internationally standard definitions for income estimated China’s Gini ratio at 38.2 in 1988 and 45.2 in 1995, a level of inequality that already surpassed that of many developing economies in Asia (Khan and Riskin 1998). An investigation conducted by the State Statistics Bureau Urban Social Economy Investigation Group showed that of the 1.25 billion Chinese people with investigations conducted, the 20 percent with higher income have got a wealth of as much as 42.4 percent of the total wealth in 1999 (People’s Daily Online English Edition 2000).

<sup>3</sup> The large surplus of rural labor has been caused mainly by two factors: First, a rapid growth in agricultural output largely thank to the rural economic reform with the introduction of the Household Contract

urban industries and communities, the currently observed rural-to-urban population movement is unprecedented in Chinese history (Li et al. 2006a).

There are at least three reasons for studying the mental health of rural-to-urban migrants in China. First, even though the proportion of the rural-to-urban migrants is substantial (about 9% of the total Chinese population and 13% of the population aged 15 to 64), and despite the increasing societal concern about the welfare of the migrants, little attention has been paid to the health status and behavior of these Chinese migrants. Limited evidence has shown that rural-to-urban migrants are facing disproportionately higher risks for poor health due to various reasons such as substandard living conditions, ultra-exploitation at work, unprotected hazardous work environment, and the lack of financial assistance to seek care when ill (Xiang 2003). While the link between migration and health in China is generally under-researched, there is even less evidence on mental health status than that on physical diseases among migrants. A thorough search of electronic databases including MEDLINE, PsycINFO and Sociological Abstract (CSA) only pointed to two articles on this topic. The first study was a small-scale survey research conducted in Shenzhen, China (Sheng et al. 1998). Shen and colleagues examined the mental health symptoms among 371 migrant workers in Shenzhen, a city adjacent to Hong Kong in the province of Guangdong, China. They measured mental health status using the Chinese version of the Symptom Checklist-90 (SCL-90) instrument which was designed to help evaluate a broad range of psychological problems and symptoms of

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Responsibility System in 1979 (Wakabayashi 1990). The increased productivity of agricultural sectors led to the surplus of rural labor. Second, China's accession to the World Trade Organization (WTO) mandated that China should gradually decrease the duties on imported farm and eventually eliminate some quotas of imported agricultural products (Anderson, Huang, and Ianchovichina 2003). As a result, the needs for Chinese agricultural products will decrease and the surplus of rural labor will increase.

psychopathology and has been well validated in Western studies (Derogatis 1994). Based on this measurement approach, Shen et al.'s study reported that migrant workers had poorer mental health status than had their non-migrant counterparts and general population in China. More recently, Li and colleagues conducted a qualitative study on migrant worker's mental health in Beijing. They documented that psychological symptoms such as hostility, social isolation, poor social adjustment, substance abuse, and sleep disorder were not uncommon among the young rural-to-urban migrants in Beijing they interviewed. For example, one respondent in Li et al.'s study (2006b) revealed that he "drank eight bottles of beer at one time and said: 'for people like us, when we felt bad, smoking and drinking are the only way to divert ourselves [from bad feelings].'" (Li et al., 2006b: 6). The Chinese literature is similarly scant with extant research in migration and health focusing mainly on sexually transmitted diseases (STDs), HIV and reproductive health (Xiang 2003). More research should be conducted to examine the status, distribution, and etiology of mental health problems among rural-to-urban migrants.

Second, although the majority of these migrants are young with a median age of 32.8 years (China National Bureau of Statistics (CNBS) 2001) and thus they may be able to endure minor ailments for the time being, they will plausibly suffer undue health problems when they get older. Given the health problems that today's migrants are facing, "it may not be exaggerating to suggest that China will have a huge population of unproductive, and even ill people comprised of former migrants, in one or two decades" (Xiang 2003:6). It is further conceivable that the future disease burden associated with current migration processes would considerably slow down the highly applauded and widely attended development processes in China. Another illustration of the significant

implications of migrant health for the larger society can be found in the case of the SARS epidemic in Beijing in 2004. Because of migrants' temporary or "floating" nature (without permanent residency in the cities), and due to their poor living conditions compounded by their reluctance of seeking timely health care, they were the most worrying group during the SARS epidemic and have been blamed as a cause for the spreading of the disease from cities to the countryside (Xiang 2003). Rural-to-urban migrants have also been blamed in large part for the HIV/STD epidemic in China (Wu and Zhou 1996). Migrant health is thus an important public health issue that warrants serious investigation and policy attention.

Third, research on mental health among migrants has been conducted mostly in Western settings (Chen et al. 2004). As a result, it is largely unknown whether theories and findings in mental health and migration based on Western cultures and contexts can be generalized to other societies. Because the rural-urban dualism and a unique household registration system ("*hukou*") in China, rural-to-urban migrants are denied a great amount of public services and the extent of institutional discrimination and social stigma against this population segment is just stunning (Li et al. 2006b; Xiang 2003). Under these circumstances, rural-to-urban migrants in China offer a unique opportunity to examine the cultural variations in the effects of social stressors on mental health and explore whether the stress process paradigm, as a theoretical framework most widely held in the sociology of mental health, can be used to understand the antecedent factors contributing to mental health among rural-to-urban migrants in China.

Evidence is abundant that social stressors from various sources result in ill health of various forms (Noh and Avison 1996). It is widely accepted in the stress literature that

chronic strains, compared to life events and daily hassles, exert the most lingering and detrimental impacts on physical and mental health (Thoits 1995). For example, long-term poverty, strained social relationships, and perceived discrimination have all been reported as chronic stressors that likely harm health (Barrett and Turner 2005; Berkman et al. 2000; Drentea 2000a, 2000b; Mirowsky, Ross, and Reynolds 2000; Seeman 2000; Williams and Williams-Morris 2000), whereas social support at the individual level or social capital at the community level have been frequently reported as stress-buffering resources in general (Cohen and Wills 1985; Kawachi and Berkman 2000, 2001; Wen, Browning, and Cagney 2003; Wen, Cagney, and Christakis 2005).

For migrants, either internal or international, either voluntary or forced out of military violence or political chaos, the minority status in the host community, the resultant marginality, the truncated social support networks, the intrapsychic adjustment challenges, and other factors associated with the uprooting process of migration plausibly produce an excessive amount of social stress thereby causing a higher-than-average amount of mental health complications among migrants. A longitudinal study conducted on over 600 Koreans in Canada indicated that the stress process paradigm provided a useful perspective for understanding immigrant mental health; that chronic stressors particularly related to the migrant status contributed to Korean immigrants' psychological distress; and that social resources functioned as protective factors against mental health problems and exerted deterrent effects on the experience of stressors and their subsequent distressful consequences (Noh and Avison 1996).

Specifically to rural-to-urban migrants in China, suboptimal socioeconomic conditions, social isolation, and discrimination are common stressors in their daily lives.



On average, migrants are less educated than urban residents (Wang and Shen 2008). China 2000 Census Data showed that 10.3% of the adult migrants (15 years or older) were illiterate, 24.2% finished elementary school, 52.2% finished middle school, and 13.3% finished high school (Li et al. 2006b). Among female migrants, 50% only finished elementary school (China National Bureau of Statistics (CNBS) 2001). Most of the migrants are living in crowded and poor sanitary conditions (Huang and Yang 2000), making meager wages despite their highly demanded labor and services in the cities, and working in jobs that urban residents generally find inferior and undesirable (e.g., garbage and recyclable collection, bicycle or shoe repair) (Li et al. 2006b). Many migrants also have to endure being exploited by their employers because of their “illegal status” in the cities. Migrants from rural areas have rural *hukou* (registered as rural residents) and thus are required by the government to obtain annual permits for legitimate employment and residence in cities. The costs of administrative procedures for getting these permits that have to be renewed every year are often prohibitively high for migrants, however. Hence, many migrant workers could not afford getting the permits and therefore end up being taken advantage of by their employers and willing to settle for less wages and benefits from their work because most rural laborers want to stay in the cities to pursue economic rewards and enjoy urban conveniences despite the poor living conditions, harsh work environment, and various challenges they are facing in the rural-to-urban transition.

Because of the deep socioeconomic and cultural gulf between urban and rural settings and residents, and because persistent and overwhelming stigma attached to the rural *hukou* and countryside upbringing in many urbanites’ perceptions, it is very difficult for rural-to-urban migrants to make friends with local urban residents. Not surprisingly, as

a result, many migrants do not have any friends in big cities except knowing some fellow villagers (Li et al. 2006b). Such de facto social isolation from mainstream networks likely provokes a sense of lost social capital that most migrants enjoy in their communal lives at home villages prior to moving to big cities. The truncated social networks and lessened social support may subsequently lead to a perceived diminution and impaired self-worth. Perhaps partly because of the difficulty of obtaining fruitful and pleasant social relationships with urban residents, partly because of rural migrants' intra-group attraction and the needs to survive the harsh outside conditions and myriads of challenges intertwined with the processes of rural-to-urban transition, recent years have witnessed growing spatial clustering of migrants with common place of origin in large cities. For example, there are a number of well-known migrant communities or "migrant villages" in Beijing, such as "Wali" and "Laiguangyin" in the Chaoyang district and "Dongshang" and "Zhongguan" in the Haidian district, each of which has at least 10,000 migrant residents (Li et al. 2006b). And among migrant communities in Beijing, the most studied and exposed "Zhejiang village," which was demolished in 1996 and rebuilt in 1998, had about 100,000 migrants in 1995 (Zhang 2001). The Yongsheng community located in the Jiading district in Shanghai is another good example of such spatial clustering among migrants. Such congregation of migrants in urban villages may help maintain the stock of social capital (e.g., from kinship or friendship ties) and group identity for migrants. Just like ethnic social support networks allow immigrants in the United States and Canada to feel connected and supported while being able to live relatively separated from the larger society (Kuo and Tsai 1986; Noh and Avison 1996; Portes 1983), the spatial concentration of rural-to-urban migrants in urban China may function as structural and cultural cushions

to buffer stress of various forms for these newcomers in Chinese cities, who were originally from rural areas arriving in the city with a hope of obtaining job opportunities and economic rewards, acquiring useful skills and experiences that may aid their labor market success, and a plan for saving as much as possible to support families back home and/or for future use. On the other hand, in spite of the potential economic and emotional benefits, residential segregation may discourage social interaction between migrants and urbanites and have negative consequences on their mutual trust and understanding. Making friends with urban residents outside the migrant community is presumably important because it would be a strong signal of social integration and assimilation into the host urban community deemed as more powerful and socioeconomically more resourceful by both migrants and urbanites.

Unfortunately, among rural-to-urban migrants, mistrust toward urban residents born and raised in the city seems to be prevailing. For example, a 23-year-old woman in Li et al.'s study (2006b), who had worked as a karaoke and dance club attendant for over six years in a city, described her feeling towards people in the city as such: "...people [in this city] are not good. I do not know how to describe them but...women are like shrews and men like thieves..." (2006b:6). Meanwhile, rural-to-urban migrants have been negatively "stereotyped" by urbanites. In the mindsets of many urbanites in China who feel privileged by their urban upbringing and thus perceive themselves as fundamentally superior to average countrymen, the common images of rural-to-urban migrants are of people who are poor, dirty, ignorant, greedy, irresponsible, and prone to violence and crime (for example, see Huai 1998). Indeed, a distinct crime category was recently created and used by the Chinese justice system to refer to crimes committed by rural-to-urban

migrants as “migrant crime.” Moreover, despite controversial over the way crime statistics were calculated for migrants as a group, it has been reported in the media that migrant crimes accounted for 60% of the total crimes in Beijing in 2001 and 70% of the total crimes in some suburban areas in Beijing (Li et al. 2006b; Shi 2002; Wu 2001). The negative perceptions held by urbanites and migrants toward each other, the consequent hostility and mistrust between the two, and a persistently segregated economy and labor market for migrants, jointly make it a real challenge for migrants to socialize with urbanites on a friendly and equal footing.

The negative attitudes of the host urban community toward rural-to-urban migrants also directly lead to everyday discrimination experienced by most migrants. Although urbanites enjoy the benefits from the cheap labor services provided by migrants typically in undesirable occupations, such as baby sitting, house keeping, and the handling of corpses, sewage, chemical wastes and construction, they tend not to treat or perceive migrant workers as equal, are less interested in understanding migrants’ unfulfilled emerging physical, mental, and social needs, and rarely invest in the social relationships with rural-to-urban migrants. In addition to feeling discriminated in private settings, migrants are also facing institutionalized discrimination. One good example of discriminatory policies is the local government’s published guidelines explicitly restricting certain occupations to employ migrant workers. For example, in Shanghai, migrants may not work for official or public services, for public security or environmental protection services, for the management of joint property in the city districts, for the sales departments in state-owned stores, or for the cleaning services in airports, railway stations and harbor facilities (Rouilleau-Berger and Shi 2005). The same kind of restrictions can be

easily found in other large cities as well (Li et al. 2006b; Wu 2001). These discriminatory policies aimed at controlling rural-to-urban migrant workers, the ongoing economic and social segregation separating newly arrived migrants from long-term dwelling urbanites, the oft acted out perceptions of migrants as undesirable outsiders or secondary citizens, and the seemingly permanent marginalization of migrants as a status group have all substantially contributed to the everyday experiences of private or public discrimination, social isolation, and economic deprivation among rural-to-urban migrants. According to the symbolic interaction theory (Goffman 1959, 1963; Stryker and Statham 1985) and the social stress theory (Lin and Ensel 1989; Thoits 1995), which have received considerable support from empirical research conducted in the U.S. or Canada (Berkman et al. 2000; Kuo 1976; Noh and Avison 1996; Noh et al. 1999; Williams and Williams-Morris 2000), these negative social and structural experiences plausibly lead to impaired mental well-being among struggling and unfairly treated migrants.

Mental well-being is considered an integral component of overall health according to WHO's health definition as well as lay perceptions (Bury 1997). Psychological distress is closely linked to a wide range of physical health outcomes and negatively affects quality of life in its own right (Mirowsky, Ross, and Reynolds 2000). Loneliness is an important aspect of psychological distress and is accorded sizable scholarly attention in Western contexts. Since the publication of the seminal work by Weiss (1973), research on loneliness has rapidly expanded with many works published in personality and social or health psychology journals. This literature documents that loneliness is a strong predictor of other mental health problems such as stress, depression, and anxiety, physical health conditions such as functional limitation, chronic conditions, and high blood pressure, and

unhealthy behavior such as smoking (Cacioppo et al. 2006; Hawkley et al. 2003; Hawkley et al. 2006; Russell 1996; Xiang et al. 1999). Extensive research has also been conducted on positive mental outcomes such as satisfaction, generally showing beneficial effects of positive affects on various aspects of human development (MacDonald et al. 2005; Park 2004; Valois et al. 2004). While these constructs represent opposite ends of the mental well-being scale, positive affects and negative affects are empirically independent if not forced onto a single continuum from positive to negative (Aber and Jones 2001; Watson and Tellegen 1985). Thus separately studying them, particularly among under-researched rural-to-urban migrants in Chinese settings, is warranted.

Therefore, our goal in this paper is to explore the patterns of loneliness and satisfaction among rural-to-urban migrants in Shanghai, China and examine personal, social, and ecological influences on the two mental health outcomes. To the best of our knowledge, this is the first study evaluating multidimensional and multilevel influences on these two important markers of mental health among rural-to-urban migrants in China.

## **METHODS**

### **Sample**

Data used in this study were from the Shanghai Rural-to-Urban Migrant Worker Survey conducted by the Institute of Demographic Research, Fudan University (Wang and Shen 2008). The survey adopted a quasi multistage random sampling method. The first step was to identify two broad categories of migrants, distinguishing those who had relatively stable employment in corporations from those who did not have stable employment and

were searching for jobs on the labor market. To recruit migrants with stable jobs working for corporations, 10 districts or counties in the suburban areas of Shanghai were selected based on the fact that approximately 80 percent of rural-to-urban migrants live in the outskirts of Shanghai (Wang and Shen 2008). From each district or county, all companies with a sizeable number of migrant workers were listed, then 10 companies were randomly selected from this list, and 5 migrant workers were randomly selected from each company. 50 informants were recruited from each district or county, totaling 500 migrant workers with table corporate jobs included in this study. For the category of currently unemployed, more mobile migrants, two employment centers established by the Shanghai Municipal Labor Department in the Minhang and Songjiang districts were used as two locales of recruitment. Everyday the two centers receive a large quantity of migrant laborers in search of temporary or stable jobs. 200 subjects were randomly recruited from each center. An additional 100 subjects were recruited from the 10 districts or counties. The total sample size was 1,000. After excluding missing values in the dependent variables, 962 cases were included in the analysis of loneliness, and 825 cases were included in the analysis of satisfaction. Missing values in the independent variables were imputed using multiple imputation method based on age, gender, marital status, education, and monthly income (Royston 2005).

### **Measurement**

Two mental health outcomes were examined in this study. *Loneliness* was measured by a single survey item: “Do you feel lonely while you are living in Shanghai?” The response categories included “Often,” “Occasionally,” “Never.” This variable was treated as an ordinal scale in the regression analysis.

*Satisfaction* was captured by three survey items asking whether the respondent was satisfied with his/her job in terms of income and work environment and whether the respondent was satisfied with his/her current living arrangement. The response categories included “Not satisfied” if the respondent was not satisfied with any of the three dimensions of satisfaction, “Somewhat satisfied” if the respondent was satisfied with one or two but not all three dimensions, and “Very satisfied” if the respondent was satisfied with all three dimensions . This variable was treated as an ordinal scale in the regression analysis.

*Demographic* variables included age, gender, length of residence in Shanghai (in years), marital status (i.e., married living with spouse, married but spouse not living in Shanghai, not married), number of children (i.e., 0, 1, 2 or more children), living arrangement with children (i.e., having no children, having children but they are not living in Shanghai, having children and they are living with the respondent).

*Socioeconomic status* variables included work environment (i.e., comfortable vs. unacceptable), education (i.e., elementary school, middle school, high school, middle professional school, associate degree, college degree or above), monthly income (i.e., below ¥1,000, greater than or equal to ¥1,000 & below ¥2,000, greater than or equal to ¥2,000 & below ¥10,000, ¥10,000 or over), job category (i.e., permanent vs. temporary/no job), neighborhood amenities (i.e., having any versus none of the following neighborhood resources: library, sport/exercise facility, community school, and entertainment center), and changes in living environment and income since migration (i.e., improved vs. not improved).



*Social capital* was measured by two variables: having relatives in Shanghai (yes/no) and having made new friends in Shanghai (yes/no).

*Psychological resources* were tapped by four attitude-related items asking about the respondent's opinions on the following statements: "Shanghai people are helpful" (yes/no); "Shanghai people are friendly to rural migrants" (yes/no); "I am willing to make friends with Shanghai people" (yes/no); and "I feel attached to Shanghai" (i.e., not attached, somewhat attached, strongly attached).

*Discrimination* was measured by an item asking about whether the respondent experienced any personal or institutional forms of discrimination in Shanghai. The specific examples of discrimination given on the questionnaire included: (1) given a supercilious look or looked down upon in public; (2) forbidden to enter a service site (e.g., entertainment club); (3) cross-questioned by police officer in public; (4) unfair treatment by employer(s) such as making less for the same job in the same work unit compared to urban workers; (5) asked for Shanghai *hukou* by prospective employers when applying for a job; (6) other forms of discrimination. The variable was dichotomized into any versus no experience of discrimination.

Table 1 lists descriptive statistics of this sample. The table discloses that 67 percent of the sample occasionally felt lonely and 12 percent often felt lonely; 16 percent were not satisfied with both income and work environment and 70 percent were not satisfied with income, or work environment, or living environment. These figures indicate that loneliness and dissatisfaction with work and living environment were common feelings in this migrant sample. The sample was young, with an average age of 28 years. The average stay in Shanghai was 4 years. 49 percent of the respondents were married

with their spouses living with them, whereas 8 percent were married but their spouses were not living with them in Shanghai. In this situation, it is often that the spouse is either still living in the village taking care of matters at home (e.g., caring for elderly parents or children) or working as a migrant laborer in another city. This family separation phenomenon was more remarkable in terms of the living arrangement with children. 47 percent of the respondents did not have children. Among respondents who have children, 52 percent of them were not living with their children in Shanghai.

As to socioeconomic status, the majority of the respondents did not perceive work environment as clean, good and comfortable and did not receive education beyond high school. In terms of income, the figures were actually higher than what we had expected. Only 24 percent of the respondents reported monthly income below ¥1,000 and 31 percent reported income equal to or greater than ¥2,000 per month. To give a context of this income level, at least on paper,<sup>4</sup> ¥2,000 is comparable to the salary level of a newly hired college lecturer with a master's or doctoral degree. In this sample, 60 percent held permanent jobs and the work hour was not gruelingly long with only 21 percent reporting 10 or longer work hours per day. The majority of the respondents reported that their neighborhoods had some resources such as library and gym and their living environment and income had increased since migration to Shanghai. As to social capital indicators, the situation is also encouraging—45 percent had relatives in Shanghai, 82 percent had made

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<sup>4</sup> For highly skilled professionals in China, such as college professors and reporters, the amount of real income is typically greater than what salary figures on paper show. For some of them, there are many sources of income that are not “on paper.” For example, it is not uncommon that a college professor is paid generously for reviewing a grant proposal or manuscript or giving a research presentation, whereas in the West, these activities are typically not paid and considered as courtesy services to the profession. However, these incomes are not guaranteed, largely depending on the person's personal and social resources such as status, power, social connections, and reputation. Therefore, for a fresh graduate working as a new lecturer in college, who has yet established status and connections, it can be just ¥2,000 per month (about \$270) as his or her total income.

new friends in Shanghai, and 72 percent had made friends with the Shanghainess (i.e., urbanites born and raised in Shanghai). Also substantial numbers of the respondents felt that the Shanghainess were helpful and friendly to rural migrants and they were willing to make friends with the Shanghainess and felt somewhat or strongly attached to Shanghai. These messages show that although rural-to-urban migration was still primarily temporary because of socioeconomic and legal hurdles of rural migrants' permanent settlement in urban areas (Zhang 2001), many migrants have developed positive attitudes toward local urbanites and certain amounts of attachment to the city. On the other hand, experienced or perceived discrimination is clearly not negligible. Half of our sample reported having experienced some forms of discrimination either in public or in private, either by fellow citizens or by institutions.

### **Statistical Analysis**

A series of sequential ordinal logit models were fit for the two dependent variables; both were three-level ordinal scales. The same modeling strategy was employed for both dependent variables, with demographic factors first examined (Model 1), followed by socioeconomic status (Models 2 & 3), then social capital (Model 4), psychological resources (Model 5), and perceived discrimination (Model 6). Only significant covariates were kept in subsequent models. Model 7 is the final model that included all significant covariates resulting from previous modeling.

### **RESULTS**

Table 2 presents odds ratios of factors of perceived loneliness. Model 7 in Table 2 presents the final model predictive of loneliness. Men were less likely than women to feel

lonely. Having children *and* living with their children was the most beneficial living arrangement reducing loneliness compared with whom those having no children or having children but not living with their children in Shanghai were, respectively, 85 or 81 percent more likely to feel higher levels of loneliness. Good work environment, improvement in living environment, belief that the Shanghainess were helpful, and feeling attached to Shanghai were all protective factors against loneliness. By contrast, experience in discrimination was a strong predictor of loneliness, net of all other socio-demographic and ecological influences. Additional interaction tests were performed (data not shown), but no gender difference was found on any of these significant factors.

Table 3 presents odds ratios of factors of satisfaction with work and living environment. Model 7 in Table 3 presents the final model predictive of satisfaction. Men were less likely than women to be satisfied. Those married but not living with the spouse were more likely to be satisfied than were those in other marital/living arrangements (i.e., not married and married living with the spouse). The influences of socioeconomic resources seemed to be stronger on satisfaction than on loneliness. Good work environment, permanent job, improved living environment, and neighborhood amenities all exhibited significant and promoting effects on satisfaction. All four measures of psychological resources were significant in the expected directions with positive attitudes significantly associated with higher levels of satisfaction. Again, as found for loneliness, experience in discrimination was a strong predictor of dissatisfaction with work and/or living environment, net of all other socio-demographic and ecological influences. Interestingly, this time we found significant interaction effects. Improvement in living

environment was a salient factor promoting satisfaction across genders but its positive influence was significantly stronger for men than for women.

We also found significant social capital influences on migrant mental health although they were not shown in Model 7. Having relatives in Shanghai was associated with 32 percent lower risk of feeling lonely (Model 4, Table 2), and having made friends in Shanghai corresponded to 57 percent of higher likelihood of feeling satisfied with work and living environment (Model 4, Table 3). These social capital effects were largely explained by psychological factors and experienced discrimination. For example, for satisfaction, the odds ratio of having made new friends versus having made no friends in Shanghai was 1.57 in Model 4, Table 3; and it was reduced to 1.28, an 18 percent decrease, and rendered statistically insignificant in Model 5 with psychological variables added to Model 4. Thus in the final model, Model 7 in both Table 2 and Table 3, the two social capital variables were excluded due to their insignificance in the previous models.

## **DISCUSSIONS**

Most literature concerned with rural-to-urban migration in China reports on socioeconomic and demographic consequences of migration to the individual, the family, and the receiving community (Carrillo Garcia 2004; Fan 2003; Liang and Chen 2007).

While the socioeconomic consequences of rural-to-urban migration are important social issues, how these migrants feel presents another key question directly related to the general status of human development and state welfare in China. However, how these rural-to-urban migrants fare in physical, social, and emotional well-being is largely unknown.

The main purpose of this study was to examine the prevalence and factors of loneliness and satisfaction as two measures of mental health status in a sample of rural-to-urban migrants in Shanghai. We found loneliness and dissatisfaction were not uncommon in this sample and half of the respondents reported that they had experienced some forms of institutional or private discrimination. A host of demographic, socioeconomic, psychological, and ecological factors were identified as strong correlates of loneliness and satisfaction among rural-to-urban migrants in Shanghai. Evidence gained from this research suggests that upward social mobility manifested in socioeconomic achievement and improvement in living environment as well as living arrangement and psychological and ecological factors are all important in influencing mental well-being of rural-to-urban migrants in China.

We examined seven socioeconomic indicators including the traditional measures such as education, income and work environment and more specific ones for rural-to-urban migrants in China including permanent job (versus temporary or no job) and improvement in living environment and income since migration to Shanghai. We also tested whether access to neighborhood resources was also a predictor for migrant mental health. For both mental health outcomes, good work environment and improvement in living environment were significant socioeconomic correlates showing protective effects. For satisfaction rather than loneliness, having a permanent job and living in a neighborhood of better amenities were additional factors increasing the odds of feeling satisfied with work and living environment. In other words, while good work environment and improvement in living conditions were influential for both negative and positive affects, neighborhood resources, measured by having library, sport/exercise facility,

community school, or entertainment center in the neighborhood, can improve life satisfaction but can not help reduce perceived loneliness.

With few exceptions (Luo and Wen 2002; Zimmer, Kaneda, and Spess 2007), very little work has been conducted in China to evaluate neighborhood effects on physical health let alone mental health. Abundant evidence accumulated from Western studies has pointed to protective effects of neighborhood socioeconomic resources and amenities to health status and behavior including mental health (Aneshensel and Sucoff 1996; Kawachi and Berkman 2003; Latkin and Curry 2003; Wen, Cagney, and Browning 2007; Wen, Hawkey, and Cacioppo 2006; Wen, Kandula, and Lauderdale 2007). Whether the theories of neighborhood influences on mental health developed and tested in Western settings apply to Chinese settings for rural-to-urban migrants has not been examined. This study briefly tested this idea on two specific mental health outcomes among rural-to-urban migrants in Shanghai, using an index of neighborhood amenity as a proxy for neighborhood resources. The data showed that neighborhood effects on mental health among rural-to-urban migrants in Shanghai were not universal but specific to mental health outcomes. More sophisticated survey measures need to be developed in future data collection to better capture neighborhood environment in China. Concomitant with the increasing income inequality in China was the rapidly growing economic concentration by residential space largely piqued by skyrocketing housing prices of commercial housing market in large Chinese metropolises. In this light, neighborhood contexts plausibly matter more for resident's health and well-being than during the time when housing was not privatized but mostly allocated by work units in urban areas and within-city neighborhood contexts during that time were not as vastly different as they are now. A

better understanding of the relationship between neighborhood contexts and health presumably contributes to our knowledge of presently poorly understood social etiology of mental and physical health of rural-to-urban migrants in China. Future work is needed to design and conduct surveys to better capture neighborhood characteristics and their impacts on health outcomes in China. These surveys should take advantage of a rich inventory of neighborhood instruments developed from the U.S. studies (Sampson, Raudenbush, and Earls 1997), although further validation of the psychometric properties of these instruments in Chinese settings is definitely needed.

In our sample, neither education nor income or improvement in income featured significant correlations with migrant mental health. Hence, from the viewpoint of socioeconomic resources, this finding indicates that migrant mental health was not sensitively responsive to higher income or education. Rather, the specific work and living environment played a salient role in contributing to migrant mental well-being. Clearly, it is important to include more measures of socioeconomic status to study social contexts of migrant mental health. Moreover, as noted in a recent review of the socioeconomic status and health literature (Braveman et al. 2005), specific measures of socioeconomic status seem to be more revealing than a composite index of socioeconomic status because variations in the health impacts of components of these indices would only be manifested when they are separately analyzed.

Independently of socioeconomic status, social capital appeared to be an important correlate of migrant mental health. This finding is consistent with our expectations that social relational resources help prevent from negative affects such as loneliness and promote positive affects such as satisfaction. In additional analysis (data not shown), we



tested the effect of having made new *Shanghainess* friends to see if making new friends with urbanites born and raised in Shanghai would exhibit differential social capital impacts on migrant mental health. The results remained unchanged, suggesting that for rural-to-urban migrants the health benefits of making friends in the urban community did not vary according to the migrant and nonmigrant sources of social support. The finding that the social capital effects were largely mediated by psychological resources makes intuitive sense. Making new friends with people is an important measure of migrants' re-rooting in the host community which conceivably promotes positive attitudes toward and attachment to the host community among the migrants (Kuo and Tsai 1986; Noh et al. 1999). These psychological resources were further confirmed to be salubrious to migrant mental well-being in our research.

Lastly, we examined the role experienced discrimination played in migrant mental health. The effect was overwhelmingly negative on migrant mental well-being over and above other demographic, socioeconomic and psychological variables. This result lends support for western theories on stigmatization and social stress (Li et al. 2006b).

Discrimination typically results from stigma. Symbolic interaction theorist Erving Goffman described stigma as a quality that significantly discredits an individual in the eyes of others (Goffman 1963). As discussed in the beginning of this article, rural-to-urban migrants were negatively stereotyped and labeled and often discriminated in public or private. These negative experiences were subsequently internalized leading to felt stigma. According to the symbolic interaction and social stress theories (Goffman 1959, 1963; Lin and Ensel 1989; Thoits 1995), the perceptions of the relational strains, conflicts in personal relationships, and negative judgment from other people can cause people to

feel stressed; and, the induced stress can in turn lead to various forms of psychological distress. Our research is supportive of this theoretical model by providing China-based evidence that the effects of stigma and negative social attitudes on stigmatized individuals were detrimental to mental health among rural-to-urban migrants in Shanghai regardless of their demographic background and socioeconomic achievements.

Two effects of demographic factors are particularly noteworthy. The first regards the gender effects. While men reported lower levels of loneliness than women, they also reported lower levels of satisfaction. Evidence on gender differences in mental health is not conclusive in the Western literature (Cockerham 2004). Much less is known about gender differences in migrant mental health in China. In this migrant sample, we found a significant interaction effect between gender and improved living environment on satisfaction suggesting that improved living environment would contribute more to male migrant's satisfaction relative to female migrants. This result suggests that main effect models are not sufficient and more interactive effect models should be tested in future work. The second is about the living arrangement effects. For loneliness, having children but not living with their children was equally detrimental as having no children. It was not a rare event that migrants who have children left their children at home and migrated alone to the cities in search of economic rewards and better opportunities. Although migration should be viewed as a rational choice after careful and informed calculation of pros and cons (Kuo 1976; Kuo and Tsai 1986), and despite the fact that the majority of rural-to-urban migrants in China regularly send remittances to their homes and find pride in doing so (Li et al. 2006b), being separated from one's children can be hard, which may easily take a toll on one's mental health manifested in, say, feeling lonely in the colorful,

dynamic, fast-paced, yet often alienating city. In our study, more than half of the respondents who were parents were not living with their children in Shanghai. Such severe deficits in one's intimate family relationships constituted a key source of migrant psychological distress, as predicted by the social psychology theories of loneliness (Weiss 1973).

Arguably, it is not that fathers or mothers living in rural areas were just so eager to explore the city lives on their own that they happily *chose* to leave their children behind neglecting their parental duties. Most times, it is just not feasible to take their children with them in the migratory process. For example, in the migrant concentrated construction sector, the dorm-like poor living conditions for migrant workers offer no room for children. In addition, sending migrant children to public schools in urban areas is often a financial burden because of higher fees usually charged for migrant families without an urban *hukou*. Thus, in reality, migrant parents often just *had to* leave their children behind because this would be the only way for them to survive the hardship of migration to and settlement in the cities. Similar to the well-known and well-carved term “American dream,” a concept so rich and meaningful insofar as it comprises many crucial elements in the process of immigrating to and settling down in America for the foreign-born, “urban dream” is arguably a comparable concept to describe the motivation and processes of migration from rural to urban areas in China. Just to name a few, hope, courage, endeavor, sacrifice, adaption, and reward are all familiar concepts relevant to rural-to-urban migrants in China who are living through demanding migration and settlement processes every day.

The descriptive patterns revealed by our data seem encouraging in a sense in that the majority of the respondents in this sample have experienced upward social mobility of

some kinds and established social networks either with fellow migrants or with local residents after their arrival in Shanghai and some of them have also developed positive views toward the Shanghainess and emotional attachment to Shanghai. It was previously estimated that about 80 percent of the migrants do not permanently relocate (i.e., obtaining official urban *hukou*) because of various structural constraints (Zhang 2001). Whether this figure would decrease with improved living conditions and more welcoming institutional environment among migrants is unknown. It is noteworthy that because of the advanced economic productivity and more liberal culture in Shanghai, migrants in Shanghai might be somewhat better off compared to their counterparts working in other cities. Comparative data and analyses are not available but needed to explore these issues. Based on survey data collected from Shanghai, the second most popular destination of rural-to-urban migration, the current research can only tap a tip of the iceberg of the complex processes of internal rural-to-urban voluntary migration in China, telling a quantitative story of migrant mental health. The detailed causes and consequences of migratory processes can be best captured in depth by qualitative, ethnographic studies which would provide clues and hypotheses for follow-up large-scale survey research.

Limitations of this study are noteworthy. First and foremost, only associations were reported in this study and causal inferences were not possible to draw because of the cross-sectional nature of this research. Second, the sample was not selected based on a city-wide random sampling scheme, so generalization of the study findings should not be assumed in other populations or locations. Third, this study only sampled rural-to-urban migrants, not including the Shanghainess in the study. Therefore, no direct comparison could be done to evaluate the relative positions of mental health of migrants and urbanites

in Shanghai. And fourth, the two key dependent variables were only captured by single survey items. Despite the multifaceted nature of the loneliness concept (Cacioppo et al. 2006), it has been reported that a unidimensional measurement instrument was able to adequately gauge individual differences in the experience of loneliness (Russell 1996). However, more sophisticated measures of loneliness, such as scales constructed from well-validated items such as the UCLA Loneliness Scale recommended by Russell and colleagues (1980), should be used in future work to assess validity, reliability, and factor structure of these instruments in Chinese settings.

To the best of our knowledge, this study is the first quantitative survey research providing evidence on personal, social, and ecological factors of loneliness and satisfaction among rural-to-urban migrants in Shanghai. In sum, the research suggests that work and living environment, social capital, along with friendly and helpful attitudes and equal treatment of the host urban community help promote better mental health of these migrant workers. Establishing neighborhood public facilities such as library, gym, and movie theatre, especially in migrant concentrated and relatively deprived neighborhoods, is perhaps a viable and affordable way to enrich rural-to-urban migrants' lives and promote their mental well-being. Policies and measures encouraging family reunion of migrants with children may also benefit mental well-being of rural-to-urban migrants in China. But most essentially, policy makers should consider ways to reduce institutional inequalities structurally disadvantaging rural-to-urban migrants and to help change the perennial image of rural-to-urban migrants with rural *hukou* as temporary, secondary citizens in cities. Although one argument runs that the *hukou* system may have been effective in restricting peasants to their land for decades since 1949 thereby having

tremendously contributed to the rapid industrialization process in China, perhaps it is time now to analyze and discuss whether the system is really more beneficial than harmful to the welfare of Chinese society and population given the contemporary socioeconomic and political contexts in China.

A burgeoning literature focused on migration in China notwithstanding, we still know very little about mental health of rural-to-urban migrants. More research is urgently needed to further evaluate the status and determinants of mental health among rural-to-urban migrants. Better knowledge in this regard hopefully leads to more migrant-friendly policies and effective interventions to improve quality of life and mental well-being of this growingly important segment of Chinese population whose welfare or distress will surely have far-reaching impacts on China's economic development, social stratification, class relationships, social stability, and health achievements in the future.

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**Table 1. Sample Characteristics of Rural-to-Urban Migrants in Shanghai<sup>a</sup>**

Never felt lonely, %	21
Occasionally felt lonely, %	67
Often felt lonely, %	12
Not satisfied with work income or work environment, %	16
Satisfied with either work income or work environment but not both, %	70
Satisfied with both work income and work environment, %	15
Average age	28
Male, %	58
Average length of residence in Shanghai (in years)	4
Married with spouse living in Shanghai, %	49
Married but spouse not living in Shanghai, %	8
Not married, %	43
Have no children, %	47
Have 1 child, %	39
Have 2 or more children, %	14
Have children but they are not living in Shanghai, %	52
Perceive work environment as clean, good and comfortable, %	32
Education	42
Elementary school level, %	8
Middle school level, %	44
High school level, %	23
Middle professional school level, %	15
Associate degree, %	7
College degree or above, %	3
Monthly income (RMB )	
< ¥1,000 per month, %	24
>= ¥1,000 & < ¥2,000 per month, %	45
>= ¥2,000 & < ¥10,000 per month, %	15
>= ¥10,000 per month, %	16
Working hours per day	
< 8 hours, %	35
>= 8 hours & < 10 hours, %	44
>= 10 hours & < 12 hours, %	14
>= 12 hours, %	7
Permanent job, %	60
Neighborhood that has some resources, %	64
Living environment improved since migration to Shanghai, %	74
Income increased since migration to Shanghai, %	72
Have relatives in Shanghai, %	45
Have made new friends in Shanghai, %	82
Have made new Shanghainess <sup>b</sup> friends in Shanghai, %	72
Belief that the Shanghainess are helpful, %	43
Belief that the Shanghainess are friendly to rural migrants, %	40
Willing to make friends with the Shanghainess, %	67
Feel somewhat or very attached to Shanghai, %	87
Ever experienced institutional or personal discrimination in Shanghai, %	50

a. Sample size was 962 for all variables except for the satisfaction variable where sample size was 825.

b. “Shanghainess” refers to urbanites born and raised in Shanghai.

**Table 2: Odds Ratios of Personal, Social, and Ecological Factors of Loneliness**

<i>Demographic Factors</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Age	0.98* (0.96 - 1.00)	0.98 (0.96 - 1.00)	0.98 (0.96 - 1.01)	0.98 (0.96 - 1.01)	0.99 (0.97 - 1.01)	0.99 (0.97 - 1.02)	0.99 (0.97 - 1.02)
Male	0.76* (0.58 - 1.00)	0.69** (0.52 - 0.92)	0.67*** (0.51 - 0.89)	0.68*** (0.51 - 0.90)	0.69** (0.52 - 0.92)	0.70** (0.53 - 0.93)	0.73** (0.55 - 0.97)
Length of residence in Shanghai	1.01 (0.92 - 1.11)						
Married but spouse was not in Shanghai <sup>a</sup>	1.56* (0.93 - 2.62)	1.59* (0.94 - 2.67)	1.56* (0.93 - 2.62)	1.56* (0.93 - 2.62)	1.64* (0.98 - 2.76)	1.57* (0.94 - 2.64)	
Not married <sup>a</sup>	0.94 (0.58 - 1.53)	0.94 (0.58 - 1.52)	0.94 (0.58 - 1.51)	0.94 (0.58 - 1.52)	0.95 (0.59 - 1.54)	0.94 (0.58 - 1.53)	
Number of children	0.98 (0.67 - 1.43)						
Have no children <sup>b</sup>	1.99** (1.04 - 3.82)	2.06*** (1.22 - 3.46)	2.04*** (1.22 - 3.42)	1.97** (1.18 - 3.31)	1.85** (1.10 - 3.13)	1.87** (1.11 - 3.18)	1.85*** (1.23 - 2.77)
Have children but they were not in Shanghai <sup>b</sup>	1.73*** (1.19 - 2.54)	1.71*** (1.17 - 2.50)	1.67*** (1.14 - 2.44)	1.62** (1.10 - 2.37)	1.50** (1.02 - 2.21)	1.62** (1.10 - 2.39)	1.81*** (1.25 - 2.63)
<b><i>Socioeconomic Status</i></b>							
Work environment (good vs. unacceptable)		0.63*** (0.47 - 0.85)	0.65*** (0.48 - 0.87)	0.66*** (0.49 - 0.89)	0.70** (0.52 - 0.94)	0.73** (0.54 - 0.99)	0.69** (0.51 - 0.92)
Education <sup>c</sup>		1.07 (0.94 - 1.21)					
Monthly income <sup>d</sup>		0.96 (0.83 - 1.11)					
Permanent job (vs. temporary or no job)		0.72** (0.54 - 0.96)	0.76* (0.57 - 1.01)	0.76* (0.57 - 1.01)	0.76* (0.57 - 1.01)	0.83 (0.62 - 1.10)	
Neighborhood amenity <sup>e</sup>		0.79* (0.59 - 1.05)	0.85 (0.64 - 1.14)				
Living environment improved (vs. not improved)			0.56*** (0.40 - 0.78)	0.55*** (0.39 - 0.76)	0.61*** (0.44 - 0.85)	0.59*** (0.43 - 0.83)	0.58*** (0.42 - 0.81)
Income increased (vs. not increased)			1.05 (0.77 - 1.43)				

<b>Social Capital</b>							
Have relatives in Shanghai (vs. none)		0.76**	0.78*	0.80			
		(0.58 - 1.00)	(0.59 - 1.03)	(0.61 - 1.05)			
Have made new friends (vs. no new friends)		1.02					
		(0.70 - 1.48)					
<b>Psychological Resources</b>							
Shanghainess were helpful (yes vs. no) <sup>f</sup>			0.71**	0.70**	0.71**		
			(0.52 - 0.97)	(0.53 - 0.94)	(0.53 - 0.95)		
Shanghainess were friendly to rural migrants (yes vs. no)			0.85				
			(0.61 - 1.18)				
Willing to make friends with Shanghainess (yes vs. no)			1.02				
			(0.73 - 1.42)				
Level of felt attachment to Shanghai <sup>g</sup>			0.72**	0.69***	0.68***		
			(0.55 - 0.95)	(0.53 - 0.90)	(0.52 - 0.89)		
<b>Discrimination</b>							
Experienced discrimination (yes vs. no) <sup>h</sup>				2.10***	2.18***		
				(1.58 - 2.79)	(1.65 - 2.89)		

N=962; Odds ratios were presented; 95% confidence intervals in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

- The reference group was those who were married and living with their spouses in Shanghai.
- The reference group was those who had children and were living with their children in Shanghai.
- Education was measured by six levels: elementary, middle school, high school, middle professional school, associate bachelor's, and bachelor's or above.
- Monthly income was categorized into four levels: below ¥1,000, greater than or equal to ¥1,000 & below ¥2,000, greater than or equal to ¥2,000 & below ¥10,000, ¥10,000 or over
- Neighborhood amenity was measured by whether the neighborhood had any versus none of the following: library, sport/exercise facility, community school, or entertainment center.
- "Shanghainess" refers to urbanites born and raised in Shanghai.
- The attachment item had three levels: not attached, somewhat attached, very attached. The "not attached" category was treated as the reference group.
- Discrimination was measured by an item asking about whether the respondent experienced institutional or personal discrimination while living in Shanghai. The variable was dichotomized into any versus no experience of discrimination.

**Table 3: Odds Ratios of Personal, Social, and Ecological Factors of Satisfaction**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>Demographic Factors</b>							
Age	1.02 (0.99 - 1.04)	1.01 (0.99 - 1.04)	1.00 (0.98 - 1.03)	1.01 (0.99 - 1.03)	0.99 (0.97 - 1.02)	0.99 (0.97 - 1.02)	0.99 (0.97 - 1.01)
Male	0.68** (0.51 - 0.92)	0.77 (0.57 - 1.05)	0.79 (0.58 - 1.08)	0.77 (0.56 - 1.06)	0.77 (0.56 - 1.06)	0.75* (0.55 - 1.04)	0.43*** (0.23 - 0.80)
Length of residence in Shanghai	1.01 (0.91 - 1.13)						
Married but spouse was not in Shanghai <sup>a</sup>	1.83** (1.06 - 3.19)	2.23*** (1.26 - 3.96)	2.24*** (1.26 - 3.98)	2.01** (1.15 - 3.51)	1.92** (1.09 - 3.39)	1.90** (1.07 - 3.35)	1.83** (1.04 - 3.23)
Not married <sup>a</sup>	1.16 (0.67 - 2.00)	1.11 (0.65 - 1.90)	1.18 (0.68 - 2.05)	1.06 (0.71 - 1.59)	0.97 (0.64 - 1.46)	0.94 (0.63 - 1.43)	0.92 (0.61 - 1.39)
Number of children	0.66** (0.44 - 0.98)	0.77 (0.51 - 1.18)					
Have no children <sup>b</sup>	0.47** (0.23 - 0.96)	0.50* (0.24 - 1.05)	0.75 (0.41 - 1.35)				
Have children but they were not in Shanghai <sup>b</sup>	0.72 (0.48 - 1.07)	0.72 (0.47 - 1.08)	0.76 (0.50 - 1.16)				
<b>Socioeconomic Status</b>							
Work environment (good vs. unacceptable)		4.64*** (3.22 - 6.68)	4.58*** (3.19 - 6.58)	4.57*** (3.17 - 6.58)	4.58*** (3.17 - 6.62)	4.48*** (3.10 - 6.48)	4.49*** (3.10 - 6.49)
Education <sup>c</sup>		0.98 (0.86 - 1.12)					
Monthly income <sup>d</sup>		1.15* (0.98 - 1.37)	1.16* (0.98 - 1.38)	1.14 (0.97 - 1.36)			
Permanent job (vs. temporary or no job)		1.63*** (1.18 - 2.26)	1.51** (1.08 - 2.10)	1.41** (1.01 - 1.97)	1.55** (1.10 - 2.18)	1.55** (1.11 - 2.18)	1.56*** (1.11 - 2.20)
Neighborhood amenity <sup>e</sup>		2.65*** (1.91 - 3.69)	2.13*** (1.52 - 2.98)	2.18*** (1.56 - 3.06)	1.83*** (1.30 - 2.59)	1.77*** (1.26 - 2.50)	1.79*** (1.27 - 2.53)
Living environment improved (vs. not improved)			3.51*** (2.40 - 5.12)	3.53*** (2.42 - 5.16)	3.26*** (2.22 - 4.78)	3.40*** (2.32 - 4.98)	2.20*** (1.26 - 3.85)
Income increased (vs. not increased)			1.47** (1.03 - 2.10)	1.48** (1.04 - 2.11)	1.27 (0.88 - 1.82)		

<b>Social Capital</b>								
Have relatives in Shanghai (vs. none)				0.97				
				(0.72 - 1.32)				
Have made new friends (vs. no new friends)				1.57**	1.28			
				(1.02 - 2.42)	(0.83 - 1.98)			
<b>Psychological Resources</b>								
Shanghainess were helpful (yes vs. no)				1.59**	1.60**	1.59***	1.60**	1.59***
				(1.12 - 2.27)	(1.12 - 2.28)	(1.12 - 2.27)	(1.12 - 2.28)	(1.12 - 2.27)
Shanghainess were friendly to rural migrants (yes vs. no)				1.65***	1.60**	1.65***	1.60**	1.58**
				(1.13 - 2.39)	(1.10 - 2.34)	(1.13 - 2.39)	(1.10 - 2.34)	(1.08 - 2.30)
Willing to make friends with Shanghainess (yes vs. no)				1.73***	1.73***	1.73***	1.73***	1.77***
				(1.18 - 2.54)	(1.18 - 2.53)	(1.18 - 2.54)	(1.18 - 2.53)	(1.20 - 2.60)
Level of felt attachment to Shanghai <sup>f</sup>				1.31*	1.37**	1.31*	1.37**	1.39**
				(0.96 - 1.79)	(1.01 - 1.87)	(0.96 - 1.79)	(1.01 - 1.87)	(1.02 - 1.89)
<b>Discrimination</b>								
Experienced discrimination (yes vs. no) <sup>g</sup>							0.69**	0.70**
							(0.50 - 0.94)	(0.51 - 0.96)
<b>Interaction effect</b>								
Male * Living environment improved								2.13**
								(1.04 - 4.33)

N=825; Odds ratios were presented; 95% confidence intervals in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

- The reference group was those who were married and living with their spouses in Shanghai.
- The reference group was those who had children and were living with their children in Shanghai.
- Education was measured by six levels: elementary, middle school, high school, middle professional school, associate bachelor's, and bachelor's or above.
- Monthly income was categorized into four levels: below ¥1,000, greater than or equal to ¥1,000 & below ¥2,000, greater than or equal to ¥2,000 & below ¥10,000, ¥10,000 or over.
- Neighborhood amenity was measured by whether the neighborhood had any versus none of the following: library, sport/exercise facility, community school, or entertainment center.
- "Shanghainess" refers to urbanites born and raised in Shanghai.
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