

**Disparities in Healthcare Utilization in China:  
Do Gender and Migration Status Matter?**

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## Author Bios

Jessie X. Fan (Ph.D., Ohio State University) is Professor in the Department of Family and Consumer Studies at the University of Utah. Her current research focuses on the relationship among individual characteristics, neighborhood environments, public policy, health behavior, and health outcomes in the U.S. and in China.

Ming Wen (Ph.D., University of Chicago) is Associate Professor in the Department of Sociology at the University of Utah. She is currently working on an NIH-funded project examining neighborhood social and built environments and their associations with physical activity and obesity. She is also working on a number of projects examining health and well-being of rural-to-urban migrants and their families in China.

Lei Jin (Ph.D., University of Chicago) is Assistant Professor in the Department of Sociology at the Chinese University of Hong Kong. Her research focuses on health disparities in China, and social networks and health. She is currently working on a large project examining the health effects of relative social positions and social mobilities in China.

Guixin Wang (Ph.D., East China Normal University) is Professor and Director of the Institute of Population Research and the Center for Urban and Regional Development at Fudan University. His research interest includes migration, urbanization, and the sustainable development of cities.



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ABSTRACT

Using a multi-stage cluster sampling approach, we collected healthcare and demographic data from 531 migrants and 529 local urban residents aged 16-64 in Shanghai, China. Logistic regressions were used to analyze the relationship between gender-migration status and healthcare utilization while controlling for predisposing, enabling and needs factors. Other things equal, female migrants and male locals had significantly lower actual healthcare utilization rates, compared to female locals. Female migrants were more likely to report “no money” as a reason for not seeking care, while male locals were more likely to report “self-medication” as a reason. Considering established gender differences in healthcare utilization, we conclude that female migrants as a group face the most healthcare access barriers among all groups.

**Key Words.** China, Gender differences, Healthcare access, Healthcare utilization, Migrants.

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### **Disparities in Healthcare Utilization in China: Do Gender and Migration Status Matter?**

China's healthcare system has undergone substantial reconstruction since the late 1970s, when the country began moving from a planned economy to a market economy. Both rural and urban healthcare systems have been affected, but in different ways (Shi 1993), resulting in further disparities in access to healthcare and health outcomes between urban and rural residents (Blumenthal and Hsiao 2005; Liu et al. 1999). A third group caught between the rural and urban healthcare systems is the rural-to-urban migrants.

Since the economic reform, millions of Chinese farmers have migrated from their villages and towns to cities, resulting in one of the largest internal migrations in China's recent history (Hong et al. 2006; Zhang 2001). Internal migrants in China face social structural challenges that do not exist in most other countries. China's household registration system (Hukou), established in the mid to late 1950s, is a legacy of the dualistic economy, serving as a highly effective measure of limiting migration from rural to urban areas. A person's Hukou status is usually determined at birth based on birth place and his or her parents' status; and very few circumstances would make a formal change of Hukou status possible. Urban residents are entitled to many social benefits not accessible by rural residents. While government controls over labor migration have been largely relaxed since the 1990s, migrant workers often remain second-class citizens in cities due to their non-local Hukou status. Such institutionalized inferiority imposed on migrant workers manifests itself in forms of discrimination in job markets and deprivation of public services and social benefits, including healthcare benefits (Chan and Zhang 1999).

The migrant health selection hypothesis emphasizes that migrants are healthier than natives because healthier individuals self-select into migration (Jasso et al. 2004). Recent

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4 evidence in China supports this hypothesis. For example, a study of migrants in Hangzhou found  
5 that adjusting for age and education, migrants had the best self-rated health and reported the least  
6 acute illnesses, chronic diseases, and disabilities compared to both native urban residents and  
7 native rural residents (Hesketh et al. 2008). In another study, migrants in a Shanghai sample  
8 were found to have better self-reported overall health and measures of mental health, compared  
9 to native residents, after an array of confounders were controlled for (Wen et al. 2010).

10  
11 However, when healthcare utilization and access are of concern, findings from the small  
12 existing literature paint a different picture. Several studies have reported reduced access to  
13 healthcare (Feng et al. 2005; Shaokang et al. 2002) and inferior health-seeking behaviors  
14 associated with frequency of mobility among rural-to-urban migrants in China (Hong et al. 2006;  
15 Li et al. 2006). For example, in two studies using different samples (Shenzhen and Beijing), only  
16 a third of the migrants who reported illnesses in the previous two weeks had actually sought  
17 medical care, while the rest chose either self-medication (about another third) or no measures  
18 taken (Mou et al. 2009; Peng et al. 2010). In two disease-specific studies on Tuberculosis (TB)  
19 using a Chongqing sample, 68% of rural-to-urban migrants experiencing symptoms suggestive of  
20 TB delayed care for more than two weeks, compared to 54% of local urban residents (Long et al.  
21 2008; Wang et al. 2008).

22  
23 When asked about reasons for not utilizing care or delaying care when sick, migrants  
24 typically cited lack of insurance (Hong et al. 2006), high cost of health services coupled with low  
25 income (Hesketh et al. 2008; Hong et al. 2006), lack of time (Hong et al. 2006), and/or lack of  
26 perceived need for care (Hong et al. 2006). For example, the high cost of healthcare has been  
27 reported as a barrier to healthcare access by 15% of migrants and 8% of urban residents in a  
28 Hangzhou sample (Hesketh et al. 2008), and financial constraints have been reported as the  
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4 biggest barrier to TB services among a sample of Shanghai migrant TB suspects (Wei et al.  
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7 2009).

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9 Because of government policies, health insurance coverage is much better for urban  
10 residents than for migrants, most of whom are prevented from becoming permanent urban  
11 residents by China's Hukou system. For example, Hesketh et al (2008) reported that only 19% of  
12 the migrants in their sample had health insurance, compared to 68% of urban residents. In a  
13 Shenzhen migrant sample, 55% of migrants were uninsured. Although disease patterns were  
14 similar irrespective of insurance status, the insured were more likely to make doctor visits when  
15 sick (Mou et al. 2009). Peng et al. (2010) reported that among a sample of Beijing migrant  
16 workers, 94% did not have health insurance in Beijing.  
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19 Overall, the body of the extant literature regarding healthcare utilization by migrants in  
20 China is very small, consisting of no more than a dozen or so studies of local samples in different  
21 parts of China. Issues such as how migration status might interact with other demographic  
22 factors such as gender have not been explored. Western literature has consistently shown that  
23 women have a higher healthcare service utilization rate than men (Bertakis et al. 2000; Hibbard  
24 and Pope 1983; Verbrugge and Wingard 1987). It is unknown whether such a gender difference  
25 exists in the Chinese population or how this difference might interact with migration status to  
26 affect healthcare access and utilization in China.  
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29 In this study, we added to the existing literature by comparing healthcare utilization and  
30 access barriers between migrants and local residents in a sample in Shanghai, China, with an  
31 emphasis on gender-migration status interaction. By documenting and investigating these  
32 differences we sought to provide information to healthcare providers, social workers, and policy  
33 makers regarding the critical needs for healthcare services that may help shape future directions  
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4 of healthcare reform in China. Our specific research questions were: 1) Does migration status  
5 affect healthcare utilization? And, 2) Do migrants and locals face different healthcare access  
6 barriers? If so, how are they different? Throughout our analysis we explored how healthcare  
7 utilization and access barriers might be affected by interactions between gender and migration  
8 status.  
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### CONCEPTUAL FRAMEWORK

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11 Models of healthcare utilization provide guidance for defining variables, specifying the  
12 relationships between them, and evaluating programs and policies concerned with access to and  
13 utilization of healthcare services. In this study we applied a simplified version of the behavioral  
14 model of health services utilization to help guide our empirical work (Aday and Andersen 2005).  
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[Figure 1]

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18 The model suggests that people's use of healthcare services is a function of their  
19 predisposition to use services (predisposing variables), factors which enable or impede use  
20 (enabling variables), and their need for care (need variables). Predisposing variables include  
21 demographics such as age and education, and health beliefs. The enabling component refers to  
22 resources available to consumers (e.g., income, insurance coverage). The need for care may be  
23 based on perceptions of the individual or diagnostic assessments by providers (Aday and  
24 Andersen 2005).  
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28 Migration status may be associated with health utilization through all three groups of  
29 factors, partly because migrants are different from local residents in their socio-demographic  
30 characteristics, and partly because migrants face different constraints imposed by social structure  
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4 and governmental policy. In addition, because migration is such a life-changing event, it itself is  
5 likely a predisposing factor that can directly affect individual's healthcare utilization.  
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9 For our first research question, which asked whether migrants have different healthcare  
10 utilization patterns compared to locals, we hypothesized that migrants have a lower level of  
11 healthcare utilization at the descriptive level. One reason for lower utilization rates among  
12 migrants is self-selection, in that migrants are typically younger and healthier than either the  
13 locals or non-migrants at home. Migrants also tend to have less education, lower family income,  
14 and lower incidence of health insurance coverage - factors typically associated with lower rates  
15 of healthcare utilization. Even after these factors are controlled, it is possible that the healthcare  
16 utilization rate is still lower for migrants than for locals due to their unfamiliarity with the  
17 healthcare delivery system, and possible discrimination in the destination city. Thus, we further  
18 hypothesized that even after other predisposing, enabling, and needs factors are controlled,  
19 migrants still have a lower healthcare utilization rate than locals.  
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36 For the second question of whether migrants and locals differ in their reasons for not  
37 utilizing healthcare when sick, we hypothesized that their reasons differ; but no directional  
38 hypotheses were formed. Throughout the study we explored the interaction effects of gender and  
39 migration on healthcare utilization. While we knew from the western literature that females have  
40 higher utilization rates than males, we did not have prior expectations as to how gender may  
41 interact with migration status to affect healthcare utilization in Shanghai because no prior studies  
42 had looked into these interactions.  
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56 DATA  
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4 Data were from the 2008 Shanghai Health and Migration Study, collected by the authors  
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6 as a joint effort among the Chinese University of Hong Kong, Fudan University, and the  
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8 University of Utah. First, five districts in Shanghai with high concentrations of migrants were  
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10 selected. Then, in each district, four street-level neighborhoods were randomly chosen. In each  
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12 neighborhood, 25 to 30 migrant households and 25 to 30 households of Shanghai natives were  
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14 chosen and one person between the age of 16 and 64 was interviewed in each household. The  
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16 response rate was very high at approximately 95%. We collected information on a range of  
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18 health behaviors, levels of access to and utilization of healthcare, health outcomes, and personal,  
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20 family, and neighborhood characteristics among 1,060 respondents in Shanghai, China, including  
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22 244 female locals, 285 male locals, 298 female migrants, and 233 male migrants.  
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## 31 MEASURES

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33 Healthcare utilization and access barriers. We used two variables to measure healthcare  
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35 utilization. The first measure asked if the respondent had “actually visited a physician in the past  
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37 12 months,” while the second measure asked if the respondent had “always visited a physician  
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39 when feeling sick in the past 12 months.” Both variables were dichotomous. The second  
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41 measure excluded 84 respondents with no report of sickness incidents. To assess healthcare  
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43 access barriers, we asked respondents to list reasons why they had not visited a doctor when  
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45 feeling sick. The reasons included: (1) symptoms not serious, (2) having medication on hand for  
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47 self-treatment, (3) not having enough money, (4) not having enough time, (5) not convenient,  
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49 and (6) other reasons such as not knowing where to go for care and not trusting doctors. This  
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51 measure excluded an additional 50 respondents who had reported “always visited a physician  
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53 when feeling sick in the past 12 months.” We created six dichotomous variables indicating the  
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4 presence or absence of these reasons. These reasons were not mutually exclusive because  
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6 multiple reasons could be listed by a respondent.  
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9 Predisposing factors. Predisposing factors were categorized into two groups: socio-  
10 demographic factors and health beliefs. Socio-demographic factors included the gender-  
11 migration matrix (female locals, male locals, female migrants, and male migrants), age  
12 (continuous), marital status (married, not married), family size (continuous), education (less than  
13 high school, high school, college or more), and number of friends (continuous). Health belief  
14 was measured by whether the respondent preferred western medicine or traditional Chinese  
15 medicine.  
16

17 Enabling factors. Enabling factors included economic constraints (time and money) and  
18 structural constraints. Weekly work hours were used to measure time constraints because the  
19 more hours one worked, the less time one had to go to a doctor when sick. Money constraints  
20 were measured by family income from the previous year. Structural constraints were measured  
21 by health insurance status.  
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24 Needs. Needs were measured by current health status. Three health status measures were  
25 examined in this study. Self-rated health was measured by responses to the question: “Overall  
26 would you rate your health as excellent, very good, good, fair, or poor?” This variable was  
27 dichotomized into excellent/very good/good versus fair/poor. A measure of chronic conditions  
28 was constructed based on self-reports of the following conditions: asthma, diabetes, high blood  
29 pressure, high cholesterol, heart disease, stroke, arthritis, epilepsy, cancer, hepatitis A and B, and  
30 sexually transmitted disease. This variable was denoted “1” if the respondent reported at least  
31 one of these chronic conditions. Psychological well-being was assessed through an analysis of  
32 answers to six questions: “In the past month, did you ever feel (1) nervous, (2) hopeless, (3)  
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4 anxious, (4) depressed, (5) worthless, or (6) that everything was an effort?" The scale was valued  
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6 as the mean score of the six items and had acceptable internal consistency reliability ( $\alpha=0.81$ ).  
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8 This variable was reverse-coded with a range of 0 (lowest wellbeing) to 6 (highest wellbeing).  
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## STATISTICAL METHODS

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In our preliminary analysis, we explored various combinations of interaction terms between migration status and other independent variables. Because the literature did not provide much theoretical guidance in this specific area, our investigation was based on statistical evidence. In estimating our full interaction models, we consistently found a gender-migration status interaction that was significant in its association with healthcare utilization variables while few other interaction terms were statistically significant. Thus, we created a gender-migration status matrix with four categories: female locals, male locals, female migrants, and male migrants. To test the joint significance of the observed group differences at the descriptive level, we conducted OLS regression on all continuous variables (F-tests) and logistic regression (likelihood ratio tests) on all dichotomous variables with only the gender-migration status variables as independent variables.

Logistic regressions were used for the two healthcare utilization models (i.e., actual utilization and always use care when sick). The models identifying reasons for not visiting a doctor when sick were also analyzed using logistic regression. All analyses were conducted using SAS software, version 9.2 (SAS Institute Inc. 2011).

## DESCRIPTIVE STATISTICS



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4 Table 1 presents descriptive statistics of the sample by gender and migration status,  
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6 together with p-values of F-tests for continuous variables and likelihood ratio tests for  
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8 dichotomous variables. Group differences in actual utilization were statistically significant. The  
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10 percentage of locals actually utilizing healthcare in the past 12 months was higher than the  
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12 percentage of migrants, with female locals having the highest utilization rate at 64.75% and male  
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14 migrants the lowest at 45.49%. Among those who reported sickness incidents, the percentage of  
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16 respondents who always utilized healthcare when sick was very low, ranging from 3.53% for  
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18 female migrants to 6.34% for male locals but these group differences were not statistically  
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20 significant.  
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27 [Table 1]

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29 “Symptoms not serious” was cited as the most common reason for not seeking healthcare  
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31 when sick for all four groups, with group differences being statistically non-significant. The  
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33 second most common reason cited for locals was “self-medication.” However, for migrants, it  
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35 was “no money.” About a quarter of each group cited “no time” as a reason for not seeking  
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37 healthcare when sick. A very small percentage of respondents in each group cited other reasons  
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39 such as “don’t know where to go for care,” “don’t trust the doctor.”  
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44 Table 1 also shows that female migrants were the youngest of all four groups at an  
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46 average age of 33.12, followed by male migrants and female locals, with male locals being the  
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48 oldest at an average age of 44.44. More male locals were married than any other group; and  
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50 migrants had larger average family sizes than locals. There was a drastic difference in  
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52 educational attainment between locals and migrants. The majority of the migrants (62.08% for  
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54 females and 59.23% for males) had less than a high school education, while only about a quarter  
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56 of the locals were in this category. Many more locals had college or higher education than  
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migrants. Males, both migrants and locals, reported having more friends than females. Slightly over 85% in all groups reported favoring western medication.

Male migrants worked the most at 53.31 hours per weeks, followed by female migrants at 49.51 hours per week. However, migrants had lower family income than locals, with female migrants reporting the lowest average at 34,700 Yuan in the previous year. Female locals reported an average of 48,500 Yuan, the highest of all four groups. Note that in 2008 the average urban household income was 49,667 Yuan, and the average rural household income was 26,870 Yuan (National Bureau of Statistics of China 2010). Although statistics for rural-to-urban migrants as a separate group were not available, the average income for this group was likely between the urban and rural numbers. Our sample statistics were generally in line with these national averages. For reference, in 2008, the exchange rate was 6.9385 Yuan for one U.S. dollar, although the Chinese Yuan has been widely considered as being kept artificially low as it is not determined by market forces (Central Intelligence Agency 2011).

The difference in insurance status between migrants and local residents was drastic. While over 95% of local residents were covered by some form of health insurance, only about half of the migrants had coverage. On the other hand, migrants reported better average general health, and had lower incidents of chronic disease than locals, with male migrants reporting the highest percentage of excellent/good health (72.53%) and female migrants reporting the lowest percentage of having at least one chronic disease (13.09%). In contrast, 44.21% of male locals reported having at least one chronic condition. The psychological wellbeing scores were similar for all four groups.

## MULTIVARIATE RESULTS

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4 For each dependent variable, we present logistic regression results for two models. Model  
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For each dependent variable, we present logistic regression results for two models. Model 1 only has the gender-migration variables, while model 2 controls for other predisposing, enabling, and needs factors. For each model we present the logistic regression parameter estimates, the average marginal probability, and odds ratio, together with p-values for Wald-Chi square tests, although we focus our discussion using average marginal probabilities, which are the means of all marginal probabilities for the sample.

Table 2 presents logistic regression results on actual utilization. Model 1 shows that migrants of both genders and male locals were less likely to have utilized healthcare in the past 12 months, compared to female locals. The coefficients for male locals and female migrants remained significant after confounding factors were controlled, as shown in Model 2. On average, male locals were about 12.2% less likely to utilize healthcare, while female migrants were 7.7% less likely to utilize healthcare, compared to female locals. Every 10,000 Yuan increase in family income was associated with a 1% higher probability of utilizing care. All needs variables were statistically significant. Having excellent or good health and better psychological wellbeing were associated with lower probabilities of seeking care, while having at least one chronic condition was associated with 20.5% higher probability of utilizing care, other things controlled.

[Table 2 and Table 3 Here]

Table 3 shows regression results for the log odds of always visiting a physician when sick. In either the uncontrolled or controlled models, gender and migration status difference was not statistically significant. In addition to the intercept, only two variables were significant in Model 2: number of friends and family income. Both were positively associated with a higher incidence of always seeking care when sick.

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4 For access barriers, logistic regressions were performed on the three leading reasons  
5 reported: “symptoms not serious”, “self-medication”, and “no money”. We excluded the 50  
6 respondents who had always sought care when sick so the sample size for this set of regressions  
7 was 926. Results in Tables 4, 5, and 6 show that when no other factors were controlled,  
8 compared to female locals, female migrants were less likely to report “symptoms not serious”  
9 and “self-medication” while more likely to report “no money” as reasons for not always seeking  
10 care. The direction of coefficients was the same for male migrants, except that the coefficient for  
11 “symptoms not serious” was statistically non-significant. There was no statistically significant  
12 difference between male and female locals.  
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[Tables 4, 5 and 6]

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When other factors were controlled for, the only remaining significant group differences were a much higher incidence of reporting “no money” as a reason for not seeking care when sick by female migrants, and a much lower incidence of reporting “self medication” by male migrants. Specifically, female migrants were about 11.5% more likely to report “no money” as a reason, while male migrants were about 17.9% less likely to report “self medication” as a reason, compared to female locals, other things being equal.

For the control variables, age was only significantly associated with reporting “no money” as a reason, with each year of age associated with 0.4% increase of marginal probably of reporting this reason. Being married was associated with a higher probability of citing “symptoms not serious” as a reason. Having a larger family size was associated with a lower probability of reporting “symptoms not serious”, but more likely to report “self medication” as a reason. Having a college education and a preference for western medicine were associated with a lower probability of reporting “symptoms not serious” as a reason, other things equal.

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4 For the enabling factors, weekly work hours was positively associated with reporting  
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6 “symptoms not serious”, while family income was negatively associated with reporting  
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8 “symptoms not serious” and “no money”. Being insured was associated with a lower probability  
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10 of reporting “no money” as a reason for not seeking medical care when sick.

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12 For the needs factors, better psychological wellbeing was associated with a 10.8% higher  
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14 probability of reporting “self medication” but a 7.3% lower probability of reporting “no money”  
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16 as a reason for not seeking care when sick. Excellent or good health was associated with a 6.9%  
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18 lower probability of reporting “no money” as a reason. Having at least one chronic condition was  
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20 not significantly associated with reporting any of these three reasons, other things equal.  
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26 We found significant associations between citing “no money” as a reason for not seeking  
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28 care when sick and various indicators of vulnerability: old age, migrant status among females,  
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30 low-income, uninsured, and lower self-rated physical and/or mental health. Specifically, female  
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32 migrants were 11.5% more likely to report “no money” as a reason for not seeking healthcare  
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34 when sick, compared to female locals, indicating additional barriers this group might face  
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36 beyond factors controlled for in this study. Of all our utilization and access barrier measures,  
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38 this was the only equation where insurance status was significantly associated with the  
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40 dependent variable. Having insurance was associated with 11.1% lower probability of not  
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42 seeking care when sick due to lack of money, indicating that insurance coverage, while not  
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44 having a significant effect on healthcare utilization in general, did have a beneficial effect in  
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46 reducing cost-related access barriers.  
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## 53 DISCUSSION AND CONCLUSIONS

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4 Our findings suggest that migrants and locals differ in healthcare utilization rate when  
5 sick, and in reasons cited for not seeking care when sick, after controlling for many other factors.  
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7 In particular, we find significant gender differences in how migration status affects healthcare  
8 utilization and access barriers, in that female migrants as a group are the most vulnerable  
9 compared to locals and male migrants, facing healthcare access barriers due to a lack of financial  
10 resources.  
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13 For the research question of whether migrants have different healthcare utilization  
14 patterns compared to locals, our results are mixed. For actual utilization, our results are  
15 consistent with our hypothesis in that migrants have a lower rate of actual utilization at the  
16 descriptive level, but the difference becomes non-significant for male migrants when other  
17 factors are controlled for. Compared to female locals, when other factors are controlled for, the  
18 remaining significant group differences are lower probabilities for male locals and female  
19 migrants in the actual utilization model. Western literature has consistently shown that women  
20 have higher medical care service utilization than men for reasons ranging from reproductive  
21 biology or conditions specific to gender to differences in health perceptions and a greater  
22 likelihood to seek help (Bertakis et al. 2000; Hibbard and Pope 1983; Mustard et al. 1998;  
23 Verbrugge and Wingard, 1987). As such, our finding that male locals have a lower medical care  
24 utilization rate is consistent with the literature, although it is somewhat surprising that the  
25 difference between male migrants and female locals is not statistically significant. Further  
26 research is needed to look into this issue. The finding that after controlling for other factors,  
27 female migrants are less likely to utilize care than female locals while having similar utilization  
28 rates as male migrants, is cause of concern. These results suggest that female migrants may face  
29 barriers to healthcare not encountered by locals of both genders or male migrants.  
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4 Regarding the question of whether migrants and locals differ in their reasons for not  
5 utilizing healthcare when sick, the results are consistent with our hypotheses that their reasons do  
6 differ, but those differences are diminished when predisposing, enabling, and needs factors are  
7 controlled for. At the descriptive level, locals are more likely to cite “self medication” than  
8 migrants, while migrants are more likely to cite “no money” than locals. When other factors are  
9 controlled for, only two group differences remain significant: that male migrants are less likely  
10 to report “self medication” as a reason for not utilizing care when sick, and that female migrants  
11 are more likely to cite “no money” as a reason. Past literature has documented a high incidence  
12 of unsupervised self treatment among migrants and expressed concerns about its impact on  
13 migrant health outcome (Hong et al., 2006). We find that self treatment is common among both  
14 locals and migrants, and that migrants do not face an elevated level of risk of self treatment. In  
15 fact, people with higher education levels are more likely to use self-treatment, suggesting that  
16 self treatment may be related to confidence in one’s medical knowledge rather than to healthcare  
17 access barriers. On the other hand, not accessing care when sick because of a lack of financial  
18 resource should be of public health policy concern. On this measure, the most vulnerable group  
19 is the female migrants, who have a higher probability of not seeking care when sick because  
20 there is “no money” even after family income is controlled, compared to other groups. While  
21 there is a large body of western literature documenting the different experiences of males and  
22 females in the migration process (Donato et al. 2006; Fry and Center 2006; Hondagneu-Sotelo  
23 and Cranford 2006; Mustard et al. 1998; Swain and Garasky 2007), it is not clear how this  
24 gender difference in migration process manifests itself in healthcare utilization behavior. In the  
25 case of Chinese internal migration, there is evidence that men and women have somewhat  
26 different motivations for migration (X. Yang and Guo 1999), that migrant gender segregation

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4 and wage discrimination exist in the urban labor market (Fan 2003; Lu and Song 2006), and that  
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6 female migrants are more likely to engage in casual and commercial sex that put them at higher  
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8 risk of STDs and HIV, compared to male migrants and local females (H. Yang et al. 2005; X.  
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10 Yang and Xia 2006). We also speculate that there may be a gender imbalance in intra-household  
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12 resource allocation (Lee 2011), where healthcare for females may not be considered a priority,  
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14 compared to the needs of other family members. All these could be potential reasons why female  
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16 migrants are the most vulnerable group in facing healthcare access barriers. Future research is  
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18 needed in understanding pathways of gender and migration interaction in healthcare behavior  
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20 and health outcome.  
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26 We temper our conclusions with several caveats. First, the relationships found in this  
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28 paper are carefully described as associations. While a number of controls are included in the  
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30 analyses, causality is not inferred since the methodology makes no attempt to identify or remedy  
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32 potential endogeneity. Second, data for this study were collected in Shanghai, one of the major  
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34 migrant-receiving cities in China but is by no means representative of all migrant-receiving  
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36 cities. As such, our results may not be generalizable to other areas of China. Third, the income  
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38 measure is a one-year recall measure that is subject to recall bias. It is not clear in which  
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40 direction this may affect our results.  
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45 In summary, we find significant differences in healthcare utilization and access barriers  
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47 among the four gender-migration status groups. Controlling for predisposing, enabling and needs  
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49 factors, female migrants are less likely to utilize care, and are more likely to report “no money”  
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51 as a reason for not seeking care, compared to female locals. We also find that compared to  
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53 female locals, male locals are less likely to utilize healthcare, and male migrants are less likely to  
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55 cite “self-medication” as a reason for not utilizing care when sick. Our findings suggest that  
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4 female migrants as a group face more access barriers than locals and male migrants. We also find  
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6 that health insurance is important in reducing access barrier due to financial constraints, as one  
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8 would expect. Obviously, providing health insurance coverage for all is costly, and China may  
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10 not be at the stage of development where such measures are a priority or even a possibility.  
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12 However, some policy measures, either nationwide or localized, may be possible to alleviate  
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14 access barriers faced by female migrants. For example, subsidized insurance for gynecological  
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16 and maternal-child healthcare may provide some safety measure for female migrants. Public  
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18 service offering community-based free or subsidized clinics in migrants-concentrated residential  
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20 areas can be beneficial as well. While addressing the large issue of healthcare reform in China is  
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22 beyond of the scope of this paper, our results should aid policy makers in assessing critical needs  
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24 among different subgroups of the population and set policy priorities accordingly.  
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35  
36 University of Hong Kong and Fudan University. The authors thank Xiaoxin Su for her valuable  
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38 research assistance.  
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Figure 1. Conceptual Framework

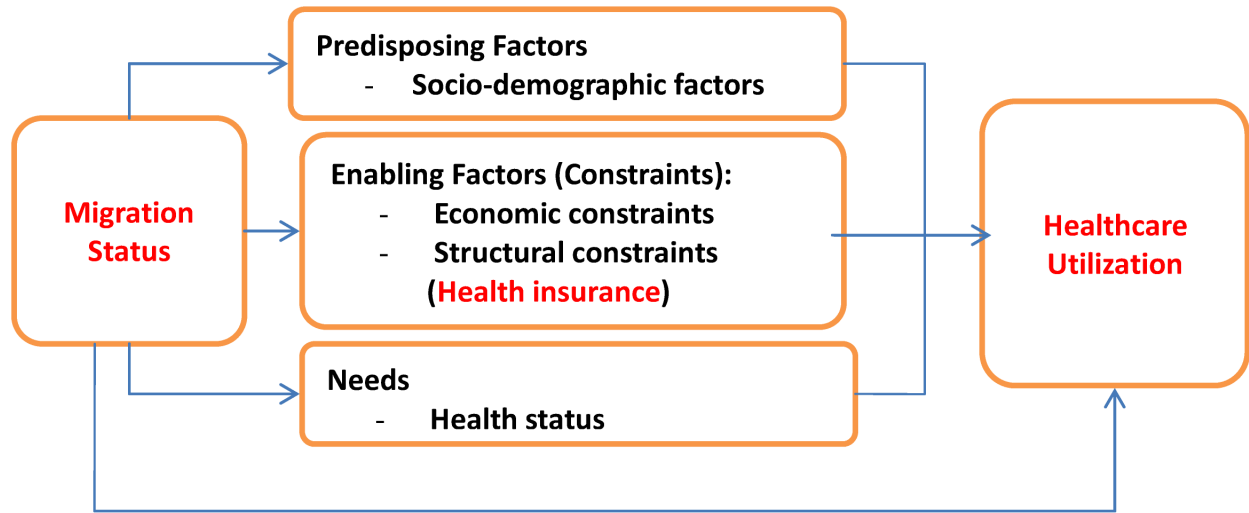


Table 1. Descriptive statistics by gender and migration status

Variable	Female	Male	Female	Male	P-Value <sup>a</sup>	
	Locals n=244	Locals n=285	Migrants n=298	Migrants n=233		
Actual utilization	64.75%	56.14%	45.97%	45.49%	<0.001	***
Always utilize when sick <sup>b</sup>	5.75%	6.34%	3.53%	5.03%	0.459	
Reasons for not utilization <sup>c</sup> :						
Symptom not serious	69.01%	67.73%	60.07%	63.49%	0.144	
Self medication	50.23%	50.20%	41.03%	30.16%	<.001	***
No money	25.82%	29.48%	43.22%	40.74%	<.001	***
No time	28.64%	31.47%	26.74%	29.63%	0.689	
Not convenient	2.82%	2.39%	4.03%	5.29%	0.376	
Other reasons	2.87%	3.86%	1.01%	1.29%	0.083	*
Predisposing factors:						
Age (mean)	39.00	44.44	33.12	36.61	<.001	***
Married	76.64%	85.26%	78.86%	76.39%	0.031	**
Family size (mean)	2.81	2.81	2.94	3.04	0.004	***
Less than high school	23.77%	26.67%	62.08%	59.23%	<.001	***
College	38.11%	28.77%	15.44%	17.17%	<.001	***
Favors western medicine	86.89%	85.61%	86.24%	87.55%	0.093	
Number of friends (mean)	9.27	11.87	10.89	15.14	<.001	***
Enabling factors:						
Weekly work hours (mean)	39.94	41.13	49.51	53.31	<.001	***
Family income (¥10,000, mean)	4.85	4.73	3.47	4.01	<.001	***
Insured	95.90%	97.54%	54.36%	51.93%	<.001	***
Needs						
Excellent/good health	55.33%	51.23%	61.41%	72.53%	<.001	***
Psychological well-being (mean)	3.46	3.49	3.41	3.46	0.043	
Having chronic condition	29.92%	44.21%	13.09%	19.31%	<.001	***

a. P-values are based on F-tests for continuous variables and likelihood ratio tests for categorical variables.

b. Sample size is 976, excluding 84 respondents with no sickness incidents.

c. Sample size is 926, excluding 50 respondents who always visited a physician when feeling sick.

\*\*\*  $\alpha \leq 0.01$

\*\*  $\alpha \leq 0.05$

\*  $\alpha \leq 0.1$

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Table 2. Logistic regression results: Actual healthcare utilization in the past 12 months (n=1,060)

Variable	<u>Model 1</u>				<u>Model 2</u>				
	Parameter	Average Marginal Probability	Odds Ratio	P-value	Parameter	Average Marginal Probability	Odds Ratio	P-value	
Intercept	0.608			<.0001	1.476			0.031	
Predisposing factors:									
Male locals	-0.361	-0.088	0.697	0.044 **	-0.568	-0.122	0.566	0.004 ***	
Female migrants	-0.770	-0.187	0.463	<.0001 ***	-0.356	-0.077	0.700	0.100 *	
Male migrants	-0.789	-0.192	0.454	<.0001 ***	-0.360	-0.077	0.697	0.111	
Age					0.001	0.000	1.001	0.880	
Married					0.296	0.064	1.345	0.137	
Family size					0.037	0.008	1.038	0.655	
Less than high school					-0.059	-0.013	0.943	0.725	
College					0.279	0.060	1.322	0.163	
Favors western medicine					0.154	0.033	1.167	0.434	
Number of friends					0.007	0.001	1.007	0.205	
Enabling factors:									
Weekly work hours					-0.006	-0.001	0.994	0.189	
Family income (¥10,000)					0.045	0.010	1.046	0.100 *	
Insured					0.296	0.064	1.344	0.104	
Needs:									
Excellent/good health					-0.785	-0.169	0.456	<.0001 ***	
Psychological well-being					-0.449	-0.097	0.638	0.001 ***	
Having chronic condition					0.953	0.205	2.595	<.0001 ***	
Cragg-Uhler R <sup>2</sup>			0.032				0.180		

\*\*\*  $\alpha \leq 0.01$   
 \*\*  $\alpha \leq 0.05$   
 \*  $\alpha \leq 0.1$

Table 3. Logistic regression results: Always seeking healthcare when sick in the past 12 months (n=976)

Variable	<u>Model 1</u>				<u>Model 2</u>				
	Parameter	Average Marginal Probability	Odds Ratio	P-value	Parameter	Average Marginal Probability	Odds Ratio	P-value	
Intercept	-2.796			<.0001 ***	-3.064			0.046 **	
Predisposing factors:									
Male locals	0.104	-0.013	1.110	0.784	0.039	0.002	1.040	0.922	
Female migrants	-0.511	-0.089	0.600	0.236	-0.537	-0.025	0.584	0.291	
Male migrants	-0.143	-0.056	0.867	0.741	-0.205	-0.010	0.815	0.689	
Age					-0.011	-0.001	0.989	0.573	
Married					0.370	0.018	1.448	0.430	
Family size					-0.016	-0.001	0.984	0.933	
Less than high school					0.591	0.028	1.806	0.138	
College					0.486	0.023	1.626	0.270	
Favors western medicine					0.233	0.011	1.262	0.642	
Number of friends					0.020	0.001	1.020	0.015 **	
Enabling factors:									
Weekly work hours					-0.011	0.000	0.989	0.332	
Family income (¥10,000)					0.086	0.004	1.090	0.074 *	
Insured					-0.224	-0.011	0.800	0.610	
Needs:									
Excellent/good health					-0.071	-0.003	0.931	0.827	
Psychological well-being					-0.069	-0.003	0.934	0.800	
Having chronic condition					0.386	0.018	1.471	0.283	
Cragg-Uhler R <sup>2</sup>		0.008				0.057			

\*\*\*  $\alpha \leq 0.01$

\*\*  $\alpha \leq 0.05$

\*  $\alpha \leq 0.1$

Table 4. Logistic regression results: Not seeking care because symptoms are not serious (n=926)

Variable	<u>Model 1</u>					<u>Model 2</u>				
	Parameter	Average Marginal Probability	Odds Ratio	P-value		Parameter	Average Marginal Probability	Odds Ratio	P-value	
Intercept	0.801			<.0001	***	2.363			0.001	***
Predisposing factors:										
Male locals	-0.059	-0.013	0.942	0.767		-0.037	-0.008	0.963	0.857	
Female migrants	-0.392	-0.089	0.676	0.042	**	-0.273	-0.060	0.761	0.236	
Male migrants	-0.247	-0.056	0.781	0.242		-0.006	-0.001	0.994	0.981	
Age						-0.012	-0.003	0.988	0.210	
Married						0.535	0.117	1.708	0.011	**
Family size						-0.204	-0.045	0.816	0.022	**
Less than high school						0.009	0.002	1.009	0.960	
College						-0.360	-0.079	0.698	0.098	*
Favors western medicine						-0.380	-0.083	0.684	0.092	*
Number of friends						-0.002	0.000	0.998	0.824	
Enabling factors:										
Weekly work hours						-0.017	-0.004	0.983	0.001	***
Family income (¥10,000)						0.079	0.017	1.082	0.011	**
Insured						0.013	0.003	1.013	0.945	
Needs:										
Excellent/good health						0.090	0.020	1.094	0.562	
Psychological well-being						-0.057	-0.012	0.945	0.665	
Having chronic condition						-0.025	-0.006	0.975	0.890	
Cragg-Uhler R <sup>2</sup>		0.008					0.055			

\*\*\*  $\alpha \leq 0.01$

\*\*  $\alpha \leq 0.05$

\*  $\alpha \leq 0.1$



Table 5. Logistic regression results: Not seeking care because of self-medication (n=926)

Variable	Model 1				Model 2				
	Parameter	Average Marginal Probability	Odds Ratio	P-value	Parameter	Average Marginal Probability	Odds Ratio	P-value	
Intercept	0.009			0.945	-1.985			0.006 ***	
Predisposing factors:									
Male locals	-0.001	0.000	0.999	0.994	-0.044	-0.010	0.957	0.822	
Female migrants	-0.372	-0.089	0.689	0.043 **	-0.232	-0.054	0.793	0.295	
Male migrants	-0.849	-0.203	0.428	<.0001 ***	-0.775	-0.179	0.461	0.002 ***	
Age					0.004	0.001	1.004	0.661	
Married					0.075	0.017	1.077	0.721	
Family size					0.191	0.044	1.210	0.029 **	
Less than high school					-0.453	-0.104	0.635	0.008 ***	
College					-0.170	-0.039	0.844	0.415	
Favors western medicine					0.167	0.038	1.181	0.438	
Number of friends					-0.006	-0.001	0.994	0.364	
Enabling factors:									
Weekly work hours					-0.005	-0.001	0.995	0.276	
Family income (¥10,000)					0.012	0.003	1.012	0.659	
Insured					-0.287	-0.066	0.751	0.138	
Needs:									
Excellent/good health					0.100	0.023	1.105	0.507	
Psychological well-being					0.470	0.108	1.599	0.000 ***	
Having chronic condition					0.269	0.062	1.309	0.126	
Cragg-Uhler R <sup>2</sup>		0.033				0.084			

\*\*\*  $\alpha \leq 0.01$

\*\*  $\alpha \leq 0.05$

\*  $\alpha \leq 0.1$

Table 6. Logistic regression results: Not seeking care because of no money (n=926)

Variable	Model 1				Model 2				
	Parameter	Average Marginal Probability	Odds Ratio	P-value	Parameter	Average Marginal Probability	Odds Ratio	P-value	
Intercept	-1.055			<.0001 ***	0.289			0.693	
Predisposing factors:									
Male locals	0.183	0.041	1.201	0.381	0.025	0.005	1.025	0.910	
Female migrants	0.783	0.174	2.187	<.0001 ***	0.561	0.115	1.752	0.021 **	
Male migrants	0.681	0.151	1.975	0.002 ***	0.392	0.080	1.480	0.134	
Age					0.022	0.004	1.022	0.024 **	
Married					-0.110	-0.023	0.896	0.624	
Family size					0.074	0.015	1.077	0.412	
Less than high school					-0.108	-0.022	0.898	0.542	
College					-0.008	-0.002	0.992	0.973	
Favors western medicine					-0.137	-0.028	0.872	0.536	
Number of friends					0.000	0.000	1.000	0.980	
Enabling factors:									
Weekly work hours					0.007	0.002	1.007	0.135	
Family income (¥10,000)					-0.144	-0.030	0.866	<.0001 ***	
Insured					-0.544	-0.112	0.580	0.005 ***	
Needs:									
Excellent/good health					-0.337	-0.069	0.714	0.033 **	
Psychological well-being					-0.356	-0.073	0.700	0.008 ***	
Having chronic condition					0.242	0.050	1.274	0.192	
Cragg-Uhler R <sup>2</sup>		0.033				0.135			

\*\*\*  $\alpha \leq 0.01$

\*\*  $\alpha \leq 0.05$

\*  $\alpha \leq 0.1$