

# Gap Analysis on Hospitalized Health Service Utilization in Floating Population Covered by Different Medical Insurance

## ----- Case Study from Jiangsu Province, China

Xinzhao Cai<sup>1,a</sup>, Fan Yang<sup>2,b</sup>, Ying Bian<sup>3,c,\*</sup>

<sup>1</sup>State Key Laboratory of Quality Research in Chinese Medicine, Institute of Chinese Medical Sciences, University of Macau, Macau, China

<sup>2</sup>School of Health Policy & Management, Nanjing Medical University, Jiangsu, China

<sup>3</sup>State Key Laboratory of Quality Research in Chinese Medicine, Institute of Chinese Medical Sciences, University of Macau, Macau, China

<sup>a</sup>18351970087@163.com, <sup>b</sup>youngfan@njmu.edu.cn, <sup>c</sup>bianyingumac@126.com

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**Abstract.** By analyzing the gap of hospitalization service among floating population in different medical insurance in Jiangsu Province, this paper is to understand the current situation of the utilization of resident health service in the floating population, and to provide the basis for improving the health service utilization in different health insurance. The data of this study were obtained from “the national dynamic monitoring survey of floating population in 2014”. Using descriptive statistical analysis, chi-square test, the paper analyzed the difference of hospitalization service utilization of floating population in different medical insurance in the data of Jiangsu Province in 2014. The proportion of FPMIUE (floating population with medical insurance of urban employee) to get hospitalization were higher than the proportion of other medical insurance (74.76%) and no medical insurance (67.57%), 15.19 and 22.38% (chi-square= 24.958,  $p = 0.000$ ). The stepwise multiple linear regression analysis results presented that factors, including “Demography” (Age and Marital status) ( $p < 0.01$ ) and “Social structure” (Education, Hukou, Insurance status and Work status) ( $p < 0.01$ ) were significantly associated with the inpatient health utilization of floating population.

## 1. Introduction

The floating population in mainland China is over 260 million, accounting for 19.5% of the total population. At the same time, the scale of floating population is constantly expanding[1]. By 2013, Jiangsu had registered more than 17 million floating population. The existence of a large number of floating population in cities will inevitably lead to the fact that floating population and local population cannot obtain reasonable quantity and quality of medical and health services[2].

This study intends to understand the current situation of inpatient health service utilization of floating population by analyzing the gap in hospitalized health services of different medical insurance floating population in Jiangsu Province, and analyze the current floating population participating in urban employee medical insurance and the floating population who participate in other medical insurance or even no medical insurance.

## 2. Methods

The data of this study were obtained from “National Internal Migrant Dynamic Monitoring Survey, 2014” data. This survey adopts stratified and multi-stage sampling method and selects sample points in the area where the floating population is concentrated in Jiangsu province according to the random principle. All the floating population in Jiangsu province in this survey was selected as the research object, with a total of 12,000. Measure the gap between different health insurance coverage in the

utilization of in-hospital health services among floating population with different medical insurance[3]. In this study, the basic medical insurance types were divided into three types: medical insurance of urban employee (MIUE), other medical insurances (urban residents' medical insurance, new rural cooperative medical insurance, urban and rural residents' cooperative medical insurance) and no medical insurance. The analysis methods included descriptive statistical analysis, one-way ANOVA, chi-square test and principal component analysis. When  $P < 0.05$ , the difference was statistically significant. SPSS 20.0 statistical software and Microsoft Excel 2010 were used to analyze the data.

### 3. Results

#### 3.1 Utilization of health services for floating population in Jiangsu province

The floating population of MIUE chose to be hospitalized in secondary hospitals and above levels medical institutions (89.95%), which was higher than other medical insurance (74.76%) and no medical insurance (67.57%) by 15.19 and 22.38 percentage points respectively. (chi-square= 24.958,  $p = 0.000$ ), in different medical insurance of floating population have significant differences in level of inpatient hospital choice. The floating population with a history of hospitalization will be surveyed within one year, classified by the quartile of the reimbursement ratio. There is significant difference in different medical insurance of floating population proportion of hospitalization medical expenses ( $\chi^2 = 225.206$ ,  $p = 0.000$ ).

#### 3.2 Factor analysis

The eigenvalues of the first five common factors are all greater than 1, and the cumulative contribution of variance is 68.45%, which can reflect most of the information of 10 variables. According to the Rotational component matrix, name the factors whose data greater than 0.45: 2 items (Age and Marital status) interpreted by factor 1 are named "Demography"; factor 2 There are 2 explanations (Personal monthly income and Family monthly income), named "Income status"; 4 items explained by factor 3 (Education, Hukou, Insurance status and Work status), named "Social structure" The one explained by factor four is "Gender"; the one explained by factor 5 is the "Floating area". After the common factor is extracted, the standardized factor score is obtained, and the rotated variance contribution rate (C) is used as the weight coefficient to construct a comprehensive factor score function:  $F = 0.17025 \times F_1 + 0.16354 \times F_2 + 0.13435 \times F_3 + 0.11007 \times F_4 + 0.10627 \times F_5$  ( $F_1$ ,  $F_2$ ,  $F_3$ ,  $F_4$ ,  $F_5$  respectively represent  $F_{\text{Demography}}$ ,  $F_{\text{Income status}}$ ,  $F_{\text{Social structure}}$ ,  $F_{\text{Gender}}$ ,  $F_{\text{Floating area}}$ .  $F$  indicates the factor score that affects the utilization of inpatient health services for migrants).

Stepwise multiple linear regression was conducted to investigate the factors influencing the hospitalized health service utilization floating population. All the influence factors after dimensionality reduction are rotated by the sin function. Indicators that can reflect the use of inpatient health service (Should be hospitalized but not, Inpatient facilities selection, In-hospital medical expenses, Reimbursement of hospital expenses), thus included in regression model as dependent variables, with  $F_1$ ,  $F_2$ ,  $F_3$ ,  $F_4$ ,  $F_5$  and  $F$  as independent variables. (Only statistically significant influencing factors analysis results are listed in the formula.)

### 4. Discussion

#### 4.1 The medical insurance situation has significant influence on the selection of medical institutions for floating population.

The data of this study showed that different basic medical insurance has significant influence on the choice of hospital institutions ( $\chi^2 = 24.958$ ,  $p = 0.000$ ). This phenomenon is widespread, and similar

findings are often found in domestic studies on floating population: Zheng found that there was a difference in the selection of hospitalization institutions for people with different medical insurance ( $p=0.000$ ,  $95\%CI=1.07-1.50$ )[4].

The reasons for this result come from many aspects. First of all, the floating population will choose to buy their own medicine or resistance to treatment even if they have diseases[5]. Without substantial reimbursement, the floating population who does not participate in urban workers' medical insurance may think that the consumption of formal medical institutions is too high[6]. In addition, the impact of medical insurance on the choice of hospital location of floating population limits the freedom of floating population to choose a hospital location, to a certain extent hampers the choice of floating population for medical and health services in hospitals[7], and reduces the fairness of health services in hospitals.

#### **4.2 Medical insurance has a significant impact on the reimbursement of hospital expenses of floating population.**

As mentioned above, there is a significant difference in the proportion of hospitalization expenses reimbursement for the floating population who have participated in different medical insurance. In this case, the other basic medical insurance that the patients participated in completely lost the role of risk sharing. Yao found that system of benefit between unfair phenomenon is mainly embodied in the protection of medical insurance for urban workers is much higher than that of other systems, makes the ginseng of low-income families facing high hospitalization expense burden[8].

First, reimbursement is restricted by geography[9]. According to the regulations of some regions, floating population cannot enjoy the same reimbursement ratio as the local resident population, nor can they enjoy the same reimbursement ratio when they return home to be hospitalized [10]. Second, the reimbursement procedures and process are very tedious and the compensation lags behind[10]. the reimbursement can only be made in two places for several times, which greatly increased the personal burden and time cost of the floating population and seriously affected the implementation of medical insurance treatment[11].

### **5. Conclusion**

All in all, there is a gap between the hospitalized health utilization in floating population covered by different medical insurance. We can tell that health utilization in floating population covered by different medical insurance is still not optimistic. According to the stepwise multiple linear regression, medical insurance type affects the hospitalization health service utilization of floating population, including "Should be hospitalized but not" situation, inpatient facilities selection and reimbursement of hospital expenses.

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