



Determinants of Health Care Seeking Behavior: Does Insurance Ownership Matters?

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ABSTRACT

Private health insurance has become an important health care financing mechanism. Generally, individuals purchase private health insurance to access private facilities. There is also evidence that individuals prefer private health care facilities due to perceived belief that private facilities offer better health quality and shorter waiting time. In the Malaysian context, the influence of health insurance ownership on the choice of health providers has not been explored. This paper attempts to investigate the individual health care seeking behaviors and determine the factors that influence the visit to the public and private health providers. The study employs the data from Malaysia National Health and Morbidity Survey III (2006) and 14,223 respondents are selected for this purpose. Malaysia provides new evidence from an emerging market where voluntary purchase of private health insurance co-exists with almost free public health care. Multinomial logit model is used to determine factors that influence individual choice of public and private health providers over no utilization for inpatient services. From the analysis, it is found that insurance ownership determine the likelihood of choosing private hospitals but has no influence in the choice of public health providers. The findings suggest that extending health insurance program may promote higher access to private health care facilities specifically the inpatient service.

Keywords: Health Insurance, Hospital Utilization, Malaysia

JEL Classification: I13

1. INTRODUCTION

Health insurance has a pivotal role in a health care financing system. In some countries, evidence suggests that ownership of health insurance improves access to health care. Access to health care is a major policy concern. The Malaysian government has taken various efforts to improve access to health care by the people. Among the efforts were outlined in the national strategic plans. In the 8th Malaysia Plan (2001-2005), one of the strategies outlined for health was developing a healthcare financing scheme that provides "consumer with a wider choice in the purchase of health services from both the public and private sectors" (Economic Planning Unit, 2001. p. 495). The idea was again emphasized in the 9th Malaysia Plan (2006-2010) by "enhancing the health care delivery system to increase accessibility to quality care" (Economic Planning Unit, 2006. p. 425). The direction set in the Malaysia Plan has supported the growth of the private health

sector in Malaysia. The number of private health institutions has increased from 219 in year 2003 to 248 in year 2014 (Ministry of Health [MOH], 2003-2015).

In a health care market, there are four fundamental decision making agents that influence the individual's health seeking behaviors. The agents are the consumers, health providers, health plans and sponsors (Ellis and Fernandez, 2013). The consumers or patients are uncertain of their health status and the needs for health care in the coming period. The health care providers are uncertain of the volume of care as it depends in part on the quantity demanded and the diagnostic. The existence of uncertainty both on the demand and the supply side show the unique feature of the health care market which make the role of sponsors imperative in a health care system. In Malaysia, although the government is the major sponsor for health care, private insurance financed 6.9% of the total health expenditure (World Health Statistic, 2014).

According to Andersen behavioral model, enabling factors that lead to utilization of health care services are family resources and community resources (Aday and Andersen, 1974). Family resources include the availability of health insurance and family savings. Insurance ownership may sometimes cause unnecessary consumption of health care among the insured (Ekman, 2007; Sarma and Simpson, 2006; Zhou et al., 2014). For example, Sarma and Simpson found that insurance has significantly determined doctor utilization among the healthy users but insignificant for the less healthy. On contrary, Manning et al. (1987) found that there is no significant difference in utilization of health care services between the healthy and the sickly. Furthermore, Anderson et al. (2012) found that hospital admissions for young adults who dropped out from their parents health insurance program reduced by 61%. Aside from insurance status, previous studies demonstrate that health care utilization was influenced by socio-demographic factors such as income, marital status, household size and age (Lopez-Nicolas, 1998; Deb et al., 2006; Nandakumar et al., 2000).

Community resources as enabling factors include the availability of medical providers. Previous studies indicate that the decision to engage with a particular medical channel is influenced by a variety of socio-economic variables such as gender, age, educational status, the type of illness and access to health care services (Shaikh and Hatcher, 2004; Tipping and Segall, 1995; Yip et al., 1998). Studies on the influence of health insurance on health care seeking behavior based on types of providers are limited although many researchers have found that health insurance ownership influence utilization of health care services (Ekman, 2007; Manning et al., 1987; Samsudin et al., 2012). Health insurance was found as one of the factor that influences the medical seeking behavior in China, Vietnam, Tanzania and Indonesia (Chomi et al., 2014; Ha et al., 2002; Hidayat et al., 2004; Jowett et al., 2004; Yip et al., 1998). In the study by Yip et al. (1998) the respondents had to choose between self-treatment, village health doctors, township centres and county hospitals while in Jowett et al. (2004), the choices were between self-treatment, outpatient services and inpatient facilities. Other studies looked at the decision to self-treatment and seeking care to public providers or private providers (Ha et al., 2002; Hidayat et al., 2004). In addition to health insurance, income, age and severity of illness were also found to be the factors that influence the choice of health care providers (Ha et al., 2002). In Tanzania, health insurance ownership increases the probability of seeking care but the influence on choice of providers varies across the types of health insurance fund (Chomi et al., 2014).

The changing health care environment has led equal interest in health care seeking behavior studies in Malaysia. As the government is moving towards shifting the burden of health care financing to the private sector (corporatization of public hospitals) health insurance ownership may provide greater access to the private health services as private health care is deemed as more expensive compared to health services delivered at the public health facilities. In addition, the increase on the overall health care cost, changes in the health care delivery system with the emergence of managed care also lead to the dependence on health insurance and eventually changes in health seeking behavior. The influence of health insurance on health care utilization by type of health care

providers; either public or private; may assist in policy issues in reducing reliance on public health care facilities.

New evidence from the Malaysia market is of interest due to the fact that public health care facilities are widely accessible as it is fully funded by the government. Contrary to Vietnam which has compulsory health insurance program for formal sector workers, Malaysia only has voluntarily private health insurance. In addition, the private health insurance in Malaysia mostly provides coverage for inpatient benefits. Similar to Vietnam, Tanzania has National Health Insurance Fund which is mandatory to public sector employees. In addition, Tanzania has Community Health Fund for the rural population and various private insurance funds.

Studies on health insurance is very limited in Malaysia. Previous studies in Malaysia includes the demographics and demand for health insurance (Abu-Bakar et al., 2005; Abu-Bakar et al., 2016; Abu-Bakar et al., 2012), the influence of health insurance on health care utilization (Abu-Bakar et al., 2016; Kefeli and Jones, 2012; Samsudin et al., 2012; Wan-Abdullah and Ng, 2009) and the issue of adverse selection and moral hazard (Abdul Rahman and Mohd Daud, 2010; Abu-Bakar et al., 2016; Kefeli and Jones, 2012).

This paper investigates the factors that determine health care utilization based on the choice of providers - Whether from public or private facilities. In particular, this paper attempts to highlight the role of health insurance in health care seeking behavior. The remainder of this article is organized as follows. The next section provides brief overview on the health insurance and the health care system in Malaysia. Then the methods employed in this study are discussed followed by the research findings. The final section concludes with recommendations.

2. HEALTH INSURANCE AND HEALTH CARE SYSTEM IN MALAYSIA

The health care system in Malaysia is a mixed public-private system. The public health care providers are the Ministry of Health (MOH) and other government agencies like the related ministries, armed forces and universities that provide teaching facilities while the private providers consist of general practitioners, inpatient care facilities and private employers. Apart from these two major sectors, other players include traditional healers and non-government organizations. Medical care can be obtained for free or at a minimum cost at any of the public hospitals and clinics throughout the country as medical care at the public health institutions are highly subsidized by the government. In Malaysia, the public financing is taken from general taxes. The public system is handled by the federal government and provides care to everyone leading to universal coverage. The services are mostly rendered through the public hospital and clinics throughout the country by medical providers who are the employees of the federal government. Other than MOH, other public health financing is provided by the Earning Provident Fund (EPF) and Social Security (SOCSO) (MOH, 2013). Workers who contributed to the EPF may withdraw the fund for critical illnesses while SOCSO fund covers the health cost of employment related illnesses and injuries.

The private finance is derived from private insurance, private employers (all corporations other than insurance), non-profit organizations (NGOs) and out-of-pocket payment (MOH, 2013). Health insurance is sold by the private market and is based on risk rating. Most health insurance policy has co-insurance and the policy is yearly renewable. Despite the availability of public health care at a minimum fee, health insurance business has grown significantly. In 2013, the new business contribution for medical and health takaful was recorded at RM1.912 billion compared to only RM1.57 billion in year 2012. For the conventional market, the gross direct premium for medical expenses and personal accident insurance policy has increased from RM2.030.1 billion in 2012 to RM2.129.4 billion in 2013, a record of 5% growth (Bank Negara Malaysia, 2013b).

Health insurance policyholders may access both the public and private health care providers. For utilization in private health providers, insurance companies usually provide reimbursement for the total health expenditures while for utilization at public health institutions, insured usually received daily cash income based on the number of hospital days. The market penetration for health insurance is still low which is at 1.7% (Bank Negara Malaysia, 2013b).

Despite the high accessibility to the public health care, the number of private health institutions in Malaysia has been on the rise in the last few years especially in the urban and higher income areas. Table 1 shows the growth of the public and private hospitals for selected years between 2003 and 2014.

The growth of private hospitals is mainly caused by the increasing demand for health care and the fact that an increasing segment of the population seems to prefer utilizing its services rather than the public facilities, despite the former's higher cost. According to Aljunid (1996), private facilities were preferable to the public because of shorter waiting time, flexible opening hours and higher quality of care.

3. RESEARCH METHODS

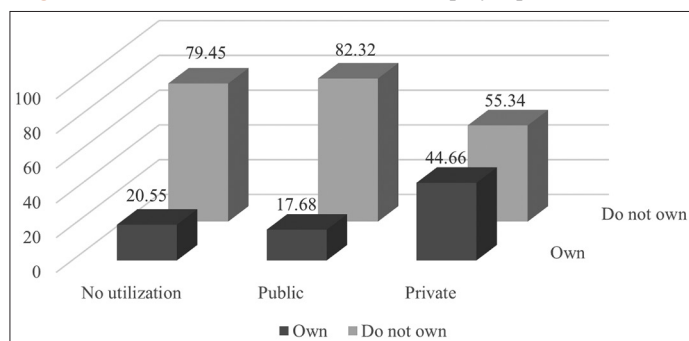
3.1. Data

Data were extracted from the National Health and Morbidity Survey III (NHMS III) by the Institute of Public Health, a division under the MOH Malaysia. The NHMS III data were collected via self-administered questionnaire and interview. Though the data were collected in 2006, they were only made available to the public use in 2010. A total of 15,519 households participated in the survey with a total of 58,538 respondents (Institute for Public Health, 2008).

3.2. Selection of Sample and Variables

As the information on the health insurance ownership is only answered by those 18 years and above, the cases answered by those below 18-year-old were deleted thus resulting in 34,393 cases. From the 34,393 cases only 14,223 cases have no missing values in all variables of interest for this analysis. The dependent variable is a categorical variable that represents inpatient utilization that takes one of three values (i.e., no utilization, utilize public health

Figure 1: Distribution of insurance ownership by inpatient utilization



facilities, utilize private health facilities) in the period of 12 months preceding the survey. The definition and summary statistics of independent variables used in the econometric model are explained in Table 2.

3.3. Empirical Specification

The multinomial logit model is used to estimate the effect of insurance ownership, controlling for other factors, on inpatient utilization. No utilization, is set as the reference outcome in this model. We include insurance ownership as a dichotomous variable, representing on whether or not the respondent owns medical insurance. At this stage, we treat the decision whether or not to own insurance as exogenous.

In multinomial model the log-odds of each response follow a linear model below:

$$h_{ij} = \log \frac{P_{ij}}{P_{0j}} = \alpha_j + x_i \beta_j$$

Where, α_j is a constant and β_j is a vector of regression coefficients, for $j = 1, 2, \dots, j-1$. In this study j is equal to 3 categories which are no utilization, public and private utilization. Since errors may be correlated within household, robust standard error is used in the regression.

4. FINDINGS AND DISCUSSION

4.1. Descriptive Statistics

Figure 1 presents the distribution of insurance ownership by inpatient utilization. It shows that among those who had been hospitalized in public health facility, 17.6% own medical insurance. Almost 45% of those who visited private health care owned health insurance. Since the decision to seek care depends on many other factors, the use of this statistics alone may not be sufficient in explaining the net effect of insurance ownership. In order to control the effect of other variables, we use multinomial logit to identify the net effect of having insurance on inpatient utilization.

4.2. Multinomial Logit Model

Table 3 presents the multinomial logit estimates of inpatient health care seeking behavior. The base outcome of the dependent variable is no utilization in the reference period of 12 months before the survey. From this model we could determine factors that influences inpatient visits based on the type of providers.

Table 1: Number of public and private hospitals for selected years between 2003 and 2014

Year	2003	2006	2009	2014
Public Hospitals and Special Medical Institutions: MOH	117	134 (35,739)	136 (38,057)	141 (39,728)
Public hospitals: Non-MOH	7	6 (2886)	8 (3523)	8 (3709)
Total number of private hospitals/maternity/nursing homes	219	233 (11,637)	245 (12,619)	248 (14,564)

Cells show the number of health institutions (and number of hospital beds in parentheses). Source: Health Facts 2003-2015. MOH: Ministry of Health Malaysia

Table 2: Definition and summary statistics of independent variables

Variable	Definition	Percentage or mean values (standard deviation)		
		No visit n ₁ =13,337	Public n ₂ =673	Private n ₃ =103
Age	Age in years	39.239 (13.517)	39.712 (15.347)	41.913 (14.539)
Agesq	Age square	1722.359 (1160.140)	1812.217 (1362.588)	1966.010 (1359.194)
Male	1 if gender is male, 0 female	54.3	47.10	57.28
Education level*				
Primary	1 if primary, 0 otherwise	27.81	31.20	20.39
Secondary	1 if secondary, 0 otherwise	57.94	56.32	66.02
Tertiary	1 if tertiary, 0 otherwise	8.31	6.24	11.65
Married	1 if married, 0 otherwise	74.31	77.71	84.47
Size	Number of household member	4.7 (2.4)	5.1 (2.539)	4.6 (2.646)
Chronic	Suffering from chronic illness (es); 1 - Yes, 0 - No	21.19	41.75	42.72
Smoker	A smoker; 1 - Yes, 0 - No	29.08	23.92	22.33
Insurance	Own medical insurance; 1 - Yes, 0 - No	20.55	17.68	44.66
Income	Log (1+total income)	4.862 (3.123)	4.066 (3.303)	5.341 (3.327)
Malay	1 if Malay, 0 otherwise	64.08	71.17	41.75
Distance	Distance to private hospital (km)	47.106 (77.986)	44.814 (69.173)	24.336 (40.591)
Urban	1 if lives in urban, 0 rural	54.47	50.37	76.70

*No education is the reference variable

Table 3: Multinomial logit for inpatient utilization

Variable	Public facility		Private facility	
	Coefficient	Robust standard error	Coefficient	Robust standard error
Age	-0.122**	0.017	-0.133**	0.041
Age square	0.001**	0.000	0.002**	0.000
Male	-0.060	0.115	-0.109	0.287
Primary	0.266	0.193	1.253	0.807
Secondary	0.106	0.212	2.016*	0.805
Tertiary	0.002	0.270	2.034*	0.888
Married	0.530**	0.126	0.732*	0.319
Size	0.062**	0.016	0.035	0.046
Chronic	1.064**	0.085	1.072**	0.225
Smoker	-0.070	0.115	-0.089	0.290
Insurance	0.131	0.117	0.832**	0.241
Income	-0.044**	0.016	0.025	0.049
Malay	0.292**	0.095	-0.794**	0.212
Distance	-0.001	0.001	-0.004	0.002
Urban	-0.037	0.089	0.506*	0.245
Constant	-1.440**	0.384	-5.507**	1.116

The reference independent variable is no utilization. ***Significant at 1% and 5% level respectively

The result suggests that insurance ownership does not determine health care utilization in public facilities but is highly significant in private health care. Hidayat et al. (2004) reported that the mandatory insurance scheme for private employees in Indonesia influence access to both public and private care facilities¹. This

differs from the finding presented here in which health insurance ownership influence access to private health care providers only. These results must be interpreted with caution as Hidayat et al. (2004) examined outpatient utilization while this study focuses on inpatient utilization due to the fact that health insurance in Malaysia is mostly used for hospitalization and is voluntary. The study adds to the existing evidence in the Malaysian health care system by Samsudin et al. (2012) who reported that health insurance influence doctor visits for the elderly.

¹ The study also found that the mandatory insurance scheme for government employees influence access to public health care in Indonesia. The result is expected as the scheme covers health care services at public hospital only.

This finding has important implication for expanding health insurance program to the population. Increasing access to private health care may reduce the burdensome workload facing the public health workers. Almost 70% of hospital admission and about 90% of outpatient visits are catered by the public health institutions (Ministry of Health [MOH], 2003-2015).

This study also indicate that age and health status significantly influence the health care utilization at both public and private facilities. The effect of health status, represented by the existence of chronic illness is in accord with previous studies that suggest health status as the main determinant of health care use (Lourenco and Ferreira, 2005; Samsudin et al., 2012; Zhou et al., 2014). The net effect of age in both public and private facilities has a non-linear U-shaped relationship. Health care utilization in public facility decreases with age until the minimum of age 61 and increases after that while in private facility, the cut-off point for age is 33. Since chronic illnesses and insurance ownership are controlled for, the effect of age may be associated with one's preference.

Marital status is also found to be a significant determinant of health care utilization in both public and private facilities. This finding supports the role of partner as a push factor in health care utilization (Deb et al., 2006; Nandakumar et al., 2000). It is interesting to note that the Malays who are the majority ethnic in Malaysia, are more likely to utilized public facilities compared to the non-Malays who prefer private facilities. The reason for this is not clear as income and insurance status are controlled for, perhaps there are other monetary-enabling factors that can be associated with ethnicity.

Income and household size are found to be significant determinant of health care utilization in public facilities. The results indicate that individual in larger household and with lower income is more likely to utilize public facilities. These relationship may be partly explained by the fact that the more members are in a household, the higher likelihood that at least one member will need health treatment. As public facilities are easily accessible at a minimum cost it can therefore be assumed that public facilities are preferred choice to lower income individuals and those in larger households.

Other important findings are education, and residential area (urban) which are found to be important in determining utilization in private health care facilities. This finding is rather unexpected as those with good health would in turn utilize less curative care which is mostly offered by the private health institutions. A possible explanation for this is that education level may reflect the ability to get better health and health care information. Educated people perhaps are more concern about their health status, and may somewhat influence the probability to be hospitalized especially in private facilities. As most private hospitals are located in the urban area, it was expected that those living in the urban area would be more likely to utilize private facilities.

5. CONCLUSION

This study set out to determine the factors that influence health care utilization according to types of health care providers.

Understanding individual's health care seeking behavior is important in health services delivery strategies to meet the needs of the community. The multinomial logit model is used to estimate the effect of insurance ownership, controlling for other factors, on inpatient utilization. The findings show that insurance, age, health status, marital status, education and residential area influence utilization at private health care facilities while age, health status, marital status, income and household size influence utilization at public health institutions.

The influence of health insurance on access to the private health care facilities has an important policy implication. For the last three decades, Malaysia is considering on restructuring its health care financing system to ensure integrated health care delivery system. The evidence from this study suggests that promoting health insurance ownership may shift the demand of health care to the private health institutions thus reducing the crowd-out at the public health facilities. A key policy priority is therefore to increase health insurance ownership either through subsidizing private health insurance premium or developing an affordable social insurance program. However, insurance ownership reduces out of pocket payment in private facilities and it could be associated with moral hazard problem. The presence of moral hazard may crippled the role of health insurance as over utilization will result in higher than average insurance claims. Thus, regulating utilization is needed to avoid unnecessary demand which will later influence health insurance and health care prices. Cost containment measures such as co-insurance may need to be a compulsory feature in health insurance program to control utilization as insured also has to share health care cost with the insurance company.

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