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Health Care Utilisation among the Elderly in Malaysia: Does Socioeconomic StatusMatters?

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ABSTRACT

Solving the imbalance in the availability of health and medical services and achieving a more equitable distribution of health care services has been one of the main objectives in the Malaysia Plans. Due to increasing proportion of aging population in the country, this paper examines differences in the utilisation of health services among the elderly in Malaysia and identifies any factors responsible for the observed changes between 1996 and 2006 by using the non-linear decomposition approach. The empirical analysis uses the second and third National Health and Morbidity Survey (NHMSII and NHMSIII) data which was conducted in 1996 and 2006. Overall, the findings of this research suggest that other than being sick, the raw differentials in the utilisation of health care among the elderly are influenced by the socioeconomic status such as education, income and job status but not private health insurance. From this study, it is hoped that by understanding the factors that contribute to the differentials in public and private hospital admissions, and individual's behaviour towards the use of health care services, the government can develop strategies for eliminating socially caused inequity in health. Reducing financial barriers to care, especially among the private health providers may benefit the lower socioeconomic group.

Keywords: Inequalities, Socioeconomic Differences, Non-Linear Decomposition.

INTRODUCTION

Issues of equity in health and equal access to health care among socioeconomic groups are one of the main stated objectives in health policy of many countries. Whitehead (1992) defines equity in health as having an equal access to available care for equal need, equal utilisation for equal need and equal quality of care for all. An extreme example of unequal access arises when people are turned away from or are unable to use health services because of their lack of income, their race, sex, age, religion, or other factors not directly related to their need for care. According to the World Health Organization (WHO) equity in health means that health care resources are allocated equitably, health services are received equitably, and payment for health services is equitable (World Health Organization, 1996).

In Malaysia, solving the imbalance in the availability of health and medical services and achieving a more equitable distribution of health care services has been one of the main objectives in the Malaysia Plans. Evidence that show socioeconomic differences exist in the utilisation of health care can be seen from the findings of the National Household Health Expenditure Survey (NHHES) in 1996. The report shows that utilisation of public hospitals is highest amongst individuals from rural areas, less developed states and large families, Malay households, lower income households, household headed by government employees and persons with lower educational levels (NHHES Final Report, 1999). Moreover, visits to private hospitalisation providers are more common among individuals with higher income, living in urban areas, tertiary educated, who are Chinese, and privately employed. Thus, this study is conducted after realising the existence of inequity among the less advantaged individuals in Malaysia, in particular the elderly.

Findings from the 2010 Population and Housing Census of Malaysia reveal an increase in the percentage of the elderly. While the proportion of the population of Malaysia below the age of 15 years decreased to 27.6 percent compared with 33.3 percent in 2000, the proportion of working age population (15 to 64 years) increased to 67.3 percent from 62.8 percent. The proportion of population aged 65 years and over also increased to 5.1 percent as compared with 3.9 percent in 2000. Accordingly, the median age increased from 23.6 years in 2000 to 26.2 years in 2010, while the dependency ratio dropped from 59.2 percent to 48.5 percent. The trend of these indicators is in line with the transition of age structure towards aging population of Malaysia (Department of Statistics, 2010).

The objective of this study is twofold. First, it investigates the relative importance of socioeconomic factors as well as socio-demographic, health condition and lifestyles factorsin explaining the differential in the utilisation of health care among the elderly. Second, it decomposes the utilisation of health care by gender and identifies relative contribution of factors affecting the differences. It focuses on the period of the two National Health and Morbidity Surveys conducted in 1996 and 2006 (NHMSII and NHMSIII). In this study, health care utilisation is measured by inpatient visits or hospital admissions to either public or private hospitals in the past 12 months and outpatient visits for individuals seeking treatment at either public or private clinics in the past one month. Between 1996 and 2006 there were no major health reforms or health policy changes so any changes in utilisation of health services over the period are more likely to be explained by variation in socioeconomic factors, socio-demographic factors, health conditions and lifestyle.

The organisation of this paper is as follows. Section 2 reviews related literature on determinants of utilisation of health care in developed and developing countries. Section 3 describes the data and empirical models used in the estimation and section 4 discusses the results. Finally, section 5 concludes with some policy implications.

LITERATURE REVIEW

Equity and efficiency are goals that are pursued by policy-makers in all types of health care systems. To achieve an equitable health care system, there is a need to understand the concept and goals of equity. Equity has been defined to mean that persons in equal need of health care should be treated the same, irrespective of income (Van Doorslaer et al., 1992). According to Braveman & Gruskin (2003), inequities in health systematically put groups of people who are already socially disadvantaged (the poor, females, and/or members of a disenfranchised racial, ethnic, or religious group) at further disadvantage with respect to their health.

The conceptual basis underpinning the behavioural model of access to medical care is set out by Andersen (1995). A major goal of his behavioural model was to provide measures of access to medical care. According to Andersen, equitable access occurs when demographic and need variables account for most of the variance in utilisation. Inequitable access occurs when social structure (e.g. ethnicity), health beliefs, and enabling resources (e.g. income) determine who gets medical care. Andersen recommended that the initial model of health services use suggests that people's use of health services is a function of their predisposition to use services, factors which enable or impede use, and their need for care. Among the predisposing characteristics are demographic factors such as age and gender while social structure represents factors that determine the status of a person in the community such as education, occupation and ethnicity, and health beliefs. Health beliefs are attitudes, values, and knowledge that people have about health and health services that might influence their subsequent perceptions of need and use of health services. Health service use can be measured in units of physician ambulatory care, hospital and physician inpatient services, and dental care which families consumed over a year's time depending on what type of service was examined. Hospital services which handle more serious problems would be primarily explained by need and demographic characteristics. Figure 1 shows model of health behaviour based on Anderson's view.

Based on Andersen's conceptual basis, researchers have focused on estimating the differences of the predisposing characteristics such as demographic and socioeconomic factors that lead to the use of health services and socioeconomic differences in health care utilisation (Van der Heyden, 2003). Since health policy objectives include equity in health and equal access to health care among different socioeconomic groups, studies of socioeconomic differences and their effects of on health and health

care utilisation have been conducted in many countries. Various international studies have demonstrated socioeconomic differences in health such as in the United States (Turra and Goldman, 2007), the UK (Saxena, Eliahoo and Majeed, 2002; Balarajan et al., 1987), Belgium (Van der Hayden et al., 2003), the Netherlands (Gerritsen and Deville, 2009; Spruit, 1990), Spain (Fernandez de la Hoz and Leon, 1996), Italy (Piperno and Di Orio, 1990), Canada (Newbold et al., 1995; Dunlop et al., 2000) and Ireland (Nolan, 1994). These studies usually find that the better-off in terms of socioeconomic characteristics suffer less in terms of health inequality in comparison to individuals in the lower socioeconomic groups.

In Malaysia studies on socioeconomic differences on health are quite limited and tend to be at a descriptive level. With different levels of socioeconomic background among the population, inequity in health is one of the important issues that need to be addressed by the government. This study contributes to the literature by focussing on socio-demographic and socioeconomic differences on the utilisation of health services among the elderly in Malaysia. Furthermore, this study identifies inequalities in health if they exist between different levels of demographic status i.e. gender despite health systems explicitly aimed at eliminating inequalities in access to health care.

METHOD

In this study, the Fairlie probit decomposition method is used to examine the impact of socioeconomic changes on the probability of utilisation of health care (i.e. admission to hospitals and visits to clinics) across a ten year period between 1996 and 2006.This study uses data from the Second and Third National Health and Morbidity Survey (NHMSII 1996 and NHMSIII 2006).

The model

The linear Blinder-Oaxaca decomposition is based on a pair of linear regression models estimated on a data on set of explanatory exogenous variables for two different groups A and B.

$$Y^A = X^A\beta^A + \mu^A$$
$$Y^B = X^B\beta^B + \mu^B \qquad (1)$$

Subtracting these two expressions and rewriting in terms of the data means gives the standard Blinder-Oaxaca decomposition showing how much of the overall gap in the means is attributable to (i) differences in the *X's* (sometimes called the explained components) rather than (ii) differences in the *β's* (sometimes called the unexplained components).

In this study we are interested in decomposing the differentials in (i) probability of admission to government hospitals; (ii) probability of admission to private hospitals; (iii) probability of a visit to government clinics; and (iv) probability of a visit to private clinics that may be attributable to observed characteristics and attributes across a number of dimensions. The dependent variable, *Y* is a binary variable taking the values 1 or 0, depending upon whether the observation had at least one admission to either government or private hospitals or visits to either government or private clinics. We assume *Y* is explained by a vector of determinants, *X*and the vectors of *β*parameters, including the intercepts. Because the dependent variable is binary requiring estimation in a probit or logit framework, the Blinder-Oaxaca framework needs extension to the non-linear setting. The Fairlie (2005) extension to standard decomposition is used. Following Fairlie (2005), the decomposition for non-linear equation $Y = F\left(X\hat{\beta}\right)$ can be written as follows:

$$\bar{Y}^A - \bar{Y}^B = \left[(\bar{X}^A - \bar{X}^B)\hat{\beta}^A\right] + \left[\bar{X}^B\left(\hat{\beta}^A - \hat{\beta}^B\right)\right] \qquad (2)$$

where $\hat{X}^j$ is a row vector of average values of the independent variables and $\hat{\beta}^j$ is a vector of coefficient estimates for year *j*.

The first term in brackets in equation (2) can explain the contribution of gender that is due to group differences in distributions of *X*, and the second term corresponds to the part that is due to differences

in the processes determining levels of *Y*. The second term also captures the portion of the gap due to group differences in unmeasurable or unobserved endowments.

But first of all, to see if there are any changes in health care utilisation between 1996 and 2006, we estimate the decomposition of utilisation between two years, 1996 and 2006. The 1996 and 2006 data are from the NHMSII and NHMSIII. Applying year notation to the NHMS data, equation (2) can be re-written as follows:

$$\bar{Y}^{2006} - \bar{Y}^{1996} = \left[\sum_{i=1}^{N^{2006}} \frac{F\left(X_i^{2006}\hat{\beta}^{1996}\right)}{N^{2006}} - \sum_{i=1}^{N^{1996}} \frac{F\left(X_i^{1996}\hat{\beta}^{1996}\right)}{N^{1996}}\right] + \left[\sum_{i=1}^{N^{2006}} \frac{F\left(X_i^{2006}\hat{\beta}^{2006}\right)}{N^{2006}} - \sum_{i=1}^{N^{2006}} \frac{F\left(X_i^{2006}\hat{\beta}^{1996}\right)}{N^{2006}}\right] \quad (3)$$

where N^{1996} and N^{2006} are the sample sizes for 1996 and 2006 respectively. The first term in brackets in equation (3) represents an estimate of the contribution of differences over the 10 year period in the entire set of independent variables to the time gap in the dependent variable, which is health care utilisation. This is the explained portion of the raw difference in the means. The decomposition model is run separately for admission to government hospital, admission to private hospital, visits to government clinics and visits to private clinics. The decomposition model is also used to decompose admissions and visits to health care facilities among the elderly by gender in both 1966 and 2006.

Data

The analysis is confined to adults over the age of 60 years old following the definition of the elderly by the WHO. Overall, there are 3,973 observations from the NHMSII and 4,562 observations from the NHMSIII.

For the decomposition analysis, this study includes a wide variety of variables hypothesised to influence health care utilisation. The conceptual basis for the inclusion of the independent variables for modelling the use of health care follows Andersen (1995) and Van der Heyden et al. (2003). Specifically, this study controls for income, education, employment status, job sector, age, ethnic, region, gender, marital status, health conditions and lifestyle, and health insurance coverage in the estimation of the demand for care. The variables used in this study can be categorised into health care utilisation variable (admission to government and private hospitals and visits to government and private clinics), socioeconomic variables (income, education, occupation and private health insurance ownership), socio-demographic variables (gender, marital status, ethnicity and region) and health conditionvariables (hypertension, diabetes, asthma and smoking). Table 1 shows the definition of all variables used in the study while Table 2 compares means between 1996 and 2006 for all variables considered in the analysis.

FINDINGS AND DISCUSSION

Table 3 reports the results of the non-linear decomposition of the changes in utilisation among the elderly between 1996 and 2006 for four separate samples - admission to government hospital, admission to private hospital, visits to government clinic and visits to private clinic. The non-linear decomposition of differences by gender among the elderly is presented in Tables 4. It is expected that health care utilisation among the elderly can be explained by socioeconomic status. The findings will be useful for policy makers in targeting the right group for health care financing support.

Non-linear decomposition of differences in health care utilisation, 1996 - 2006

Table 3 reports estimates of the non-linear decomposition. It presents the raw total and explained differences attributable to the various factors affecting admission to hospitals and visits to clinics between 1996 and 2006.

Overall, the raw differences in admission to hospitals and visits to clinics are small. The difference between 1996 and 2006 admission rates for government hospital is -2.1%. The negative sign means

that utilisation rate has decreased from 1996 to 2006 by 2.1%. While hospitalisation rate decreased the predicted impact of rises in health conditions should have increased utilisation. The decomposition estimates show that the explained contribution of all health condition variables such as hypertension (0.43%) and diabetes (0.30%) are positively significant. From 1996 to 2006, Malaysia saw a dramatic increase in the prevalence of behaviour-linked diseases, including a 43% increase in hypertension and 88% increase in diabetes (Malaysia, 2010). Besides that, **job status**also increased utilisation in government hospitals with an explained decomposition estimate of 0.16%.The increase in the utilisation rate for visits to government clinics from 1996 to 2006 is shown by the raw difference of 2.34%. In absolute value the largest significant set of factors affecting the increased rate of visits to government clinics are health conditions i.e. hypertension (0.96%), diabetes (0.2%) and asthma (0.04%).

The difference between 1996 and 2006 admission rates in private hospital is -0.57%. Among the socioeconomic variables, only **job status** explained the decreased in overall admission rate by -0.14%. Visits to private clinics have also decreased between 1996 and 2006, given by the differential value of -3.32%. From 1996 to 2006, being hypertensive increased utilisation to private clinics among the elderly by 0.28%.

Non-linear decomposition of gender differences in health care utilisation, 1996 and 2006

Table 4 reports the raw total and explained gender differences in health care utilisation among the elderly in1996. The results show that as compared to females, males have higher means for admission to government hospitals (0.85%) and government clinics (1.55%) whereas females have higher means for admission to private hospitals (-1.02%) and private clinics (-2.64%).

In 1996 health variables influenced the increased in higher admission rate among males (hypertension 0.13%; diabetes 0.24%; asthma 0.31%) in government hospitals. On the other hand, the findings show that **job status** is the only socioeconomic factor thatnegatively significant in explainingthe higher rate of admission in government hospitals for male(-0.75%). Being single is also significant in explaining the lower rate of admission among females. In government clinics, males with health conditions such as hypertension (0.10%), diabetes (0.11%) and asthma (0.28%) have higher probability of being admitted to government hospitals.

In private hospitals, the overall admission gap is higher for females (-1.02%). However, none of the variables in admission to private hospitals equation are significant in explaining gender differences in 1996.The raw difference for visits to private clinics is -2.64%.In private clinics, the higher rates for visits to private clinics among females are explained by one socio-demographic variable which is being single (1.50%). Educationlevel is positively significant and is inconsistent with the overall decomposition estimates with 0.85% and asthma 0.15% respectively.

In 2006, the overall findings show that males have higher admission rates to government hospitals (2.11%), private hospitals (0.57%) and privateclinics (3.32%) than females. On the other hand, females have higher rates for visits to governmentclinics (-2.34%).

The variables that explain the higher rates for admissions to government hospitals among aged males are region (0.46%), asthma (0.40%) and smoking (0.10%). Nonetheless, health conditions affected admission for aged females higher than aged males for hypertension (-0.55%) and diabetes (-0.42%). **Income**is also inconsistent with the higher rates among males in government hospitals (-1.33%). Meanwhile, the higher rates for visits to government clinics among females in 2006 are explained by health condition variable such as diabetes (-0.15%) while aged males have higher rates for asthma (0.35%).

The difference in admissions to private hospitals among aged males is explained by **job status** (0.19%) and ethnic group (0.29%). Females have higher rates for visits to private clinics in 2006. Among the factors that influenced the differences is asthma (0.22%). **Education** level (-0.39%)and region (-0.24%) are negatively significant and inconsistent with the overall decomposition estimates for visits to private clinics.

CONCLUSIONS AND POLICY IMPLICATIONS

This study looks at the effects of socioeconomic differences on the utilisation of health care among the elderly in Malaysia and whether there are any changes between 1996 and 2006. Furthermore this study estimates disparities in health care utilisation by focusing on gender differences. The data are from the National Health and Morbidity Survey conducted in 1996 and 2006 (NHMSII and NHMSIII). The analysis uses the non-linear decomposition approach.

The findings for overall differences between 1996 and 2006 show that there is a decrease in the hospitalisation rate which can be partially explained by health conditions factors such as hypertension, asthma and diabetes. Socioeconomic factors such as job status explained the difference in both government and private hospital admissions. Meanwhile for the elderly, private health insurance is not animportant factor contributing to the differences in admissions to hospitals and visits to clinics since the purchase of health insurance is more popular among the younger generation. The unexplained factors for health care utilisation between 1996 and 2006 may be attributed to the many health programmes and projects conducted by the Government. Better service quality offered by the public and private health facilities may have also decreased hospitalisation among the elderly.

Earlier study by Zurina Kefeli (2011) found that for gender differences, overall in Malaysia, females have a higher hospitalisation rate than males. However this study found that in 2006, among the elderly, males have higher hospitalisation rate as compared to females. Socioeconomic variables such as education, income and job status explained the gender differences in 2006.

Overall, the findings of this research suggest that other than being sick, the raw differentials in the utilisation of health care are influenced by the socioeconomic status. This research also supports the findings from previous studies that found the better-off in terms of socioeconomic characteristics suffer less in terms of health inequality in comparison to individuals in the lower socioeconomic groups. In this study, the non-linear decomposition estimates only show the explained factors that can influence differences in health care utilisation. There are other unexplained factors that might be significant in explaining gender differences for instance, discrimination.

This research provides a few contributions. Among the contributions are: firstly, this is among the earliest study to look at socioeconomic differences among the elderly and their effect on the utilisation of health care in Malaysia; secondly, since there are limited empirical studies in Malaysia that utilise the National Health and Morbidity Survey 1996 and 2006 data, this study provides further understanding of the health care utilisation behaviour between gender in Malaysia; and thirdly, the application of the non-linear decomposition approach provides useful evidence in studying socioeconomic differences on the use of health care. In future, to further understand the effect of socioeconomic factors on health care utilisation, the adult-children sample may be used. Besides that, another type of health care service which is the specialist visits may also be included in the analysis.

Malaysia's vision for health is to be a nation of healthy individuals, families and communities, through a health system that is equitable, affordable, efficient, technologically appropriate, environmentally adaptable and consumer-friendly (MOH Strategic Plan, 2008). To achieve this vision the government has allocated considerable resources to achieve a more equitable health system. From this study, it is hoped that by understanding the factors that contribute to the differentials in public and private hospital admissions, and individual's behaviour towards the use of health care services, the government can develop strategies for eliminating socially caused inequity in health. Reducing financial barriers to care, especially among the private health providers may benefit the lower socioeconomic group.

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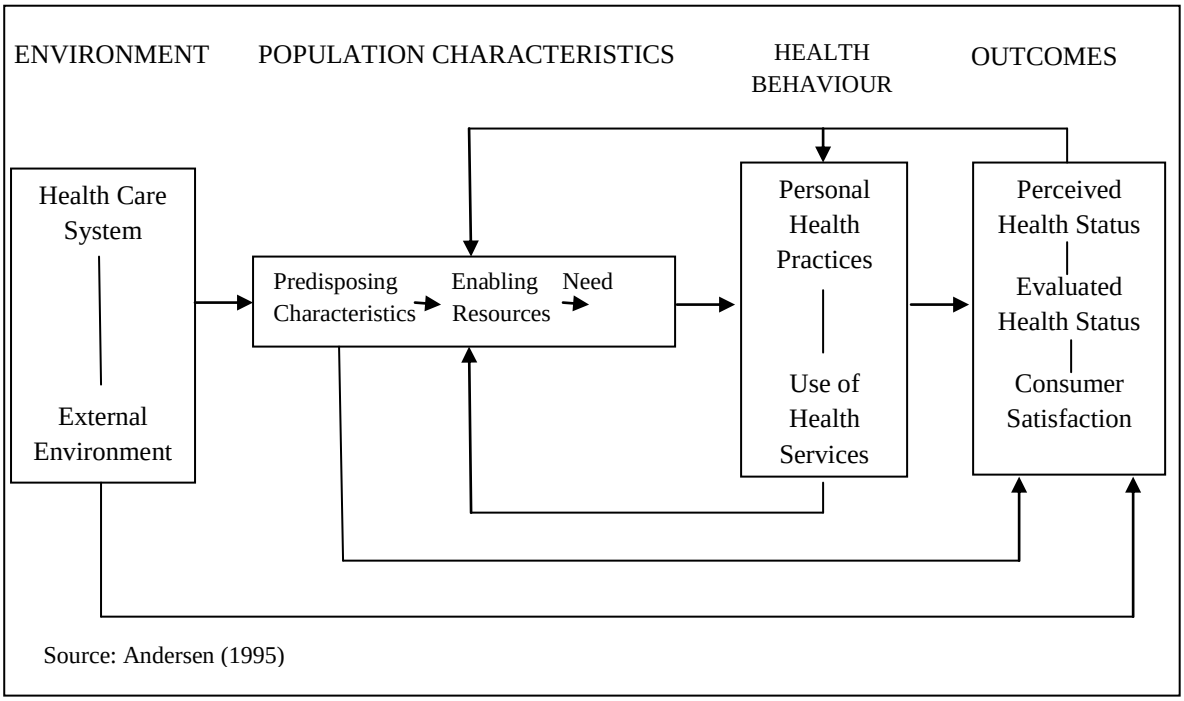

FIGURE 1: An Emerging Model of Health Behaviour

TABLE 1: Definition of Variables from NHMSII and NHMSIII

Variables	Definition
Dependent variables:	
ADMIT_GH	= 1 if admitted to a government hospital in the past 12 months
ADMIT_PH	= 1 if admitted to a private hospital in the past 12 months
VISIT_GC	= 1 if visited a government clinic in the past 1 month
VISIT_PC	= 1 if visited a private clinic in the past 1 month
Independent variables:	
Household income	
HHINC0_699	= 1 if average household monthly income is between RM0 – RM699
HHINC700_999	= 1 if average household monthly income is between RM700 – RM999
HHINC1000_1999*	= 1 if average household monthly income is between RM1,000 – RM1,999
HHINC2000_2999	= 1 if average household monthly income is between RM2,000 – RM2,999
HHINC3000_3999	= 1 if average household monthly income is between RM3,000 – RM3,999
HHINC4000_4999	= 1 if average household monthly income is between RM4,000 – RM4,999
HHINC5000	= 1 if average household monthly income is above RM5,000
Education	
PRIMARY	= 1 if completed primary education
SECONDARY*	= 1 if completed secondary education
TERTIARY	= 1 if completed tertiary education
NO_EDUC	= 1 if has no formal education
Job status	
GOVEMP*	= 1 if work in government sector
PVTEMP	= 1 if work in private sector
SELFEMP	= 1 if self-employed
HOUSEWIFE	= 1 if a housewife
UNEMPLOYED	= 1 if unemployed
Gender	
MALE*	= 1 if male
FEMALE	= 1 if female
Marital status	
MARRIED*	= 1 if married
SINGLE	= 1 if single
Ethnic	
MALAY*	= 1 if Malay
CHINESE	= 1 if Chinese
INDIAN	= 1 if Indian
OTHER_BUMIS	= 1 if Bumiputera other than the Malays such as the Indigenous people or tribal ethnic in Sabah and Sarawak
OTHER_ETHNIC	= 1 if belongs to other ethnic groups e.g. Jews
Region	
URBAN*	= 1 if live in urban area
RURAL	= 1 if live in rural area
Health and lifestyles	
HPT	= 1 if has hypertension
DIABETES	= 1 if has diabetes
ASTHMA	= 1 if has asthma
SMOKE	= 1 if smoking
Health insurance status	
HAVE_PHI	= 1 if have private health insurance

Note: Variable name with * is the reference group.

TABLE 2: Sample Means of Variables, 1996 and 2006

Variables	NHMSII: 1996 n=3,973	NHMSIII: 2006 n=4,562
Dependent variables:		
ADMIT_GH	0.089	0.068
ADMIT_PH	0.015	0.009
VISIT_GC	0.039	0.063
VISIT_PC	0.074	0.041
Independent variables:		
Household income		
HHINC0_699	0.087	0.202
HHINC700_999	0.025	0.116
HHINC1000_1999	0.190	0.217
HHINC2000_2999	0.081	0.114
HHINC3000_3999	0.038	0.048
HHINC4000_4999	0.020	0.023
HHINC5000	0.231	0.056
Education		
PRIMARY	0.328	0.452
SECONDARY	0.067	0.128
TERTIARY	0.014	0.017
NO_EDUC	0.547	0.394
Job status		
GOVEMP	0.007	0.009
PVTEMP	0.050	0.051
SELFEMP	0.205	0.200
HOUSEWIFE	0.195	0.264
UNEMPLOYED	0.426	0.326
Gender		
MALE	0.456	0.467
FEMALE	0.521	0.533
Marital status		
MARRIED	0.605	0.687
SINGLE	0.395	0.018
Ethnic		
MALAY	0.441	0.536
CHINESE	0.310	0.275
INDIAN	0.061	0.064
OTHER_BUMIS	0.145	0.107
OTHER_ETHNIC	0.043	0.018
Region		
URBAN	0.475	0.498
RURAL	0.525	0.502
Health and lifestyles		
HPT	0.232	0.369
DIABETES	0.101	0.171
ASTHMA	0.077	0.063
SMOKE	0.386	0.397
Health insurance status		
HAVE_PHI	0.052	0.041

Source: Author's estimation

TABLE 3: Raw Total and Explained Differences in Health Care Utilisation in Malaysia, 1996 and 2006

	ADMIT_GH	ADMIT_PH	VISIT_GC	VISIT_PC
2006	0.0675	0.0094	0.0627	0.0408
1996	0.0886	0.0151	0.0393	0.0740
Difference	-0.0211	-0.0057	0.0234	-0.0332
Income	-0.0023	-0.0034	-0.0017	-0.0023
	(0.0026)	(0.0022)	(0.0028)	(0.0026)
Education	**0.0016**	0.0006	-0.0011	-0.0001
	(0.0008)	(0.0007)	(0.0015)	(0.0013)
Job status	-0.0009	**-0.0014**	-0.0005	-0.0007
	(0.0009)	(0.0008)	(0.0010)	(0.0008)
Ethnic	0.0002	-0.0037	-0.0007	-0.0006
	(0.0013)	(0.0032)	(0.0016)	(0.0011)
Region	0.0006	0.0050	0.0015	0.0002
	(0.0013)	(0.0033)	(0.0013)	(0.0008)
Single	0.0023	-	0.0064	-0.0150
	(0.0095)		(0.0097)	(0.0122)
Rural	0.0000	0.0002	-0.0005	0.0006
	(0.0003)	(0.0006)	(0.0005)	(0.0006)
Hypertension	**0.0043**	-0.0007	**0.0096**	**0.0028**
	(0.0013)	(0.0008)	(0.0020)	(0.0017)
Diabetes	**0.0030**	0.0013	**0.0020**	-0.0002
	(0.0009)	(0.0009)	(0.0010)	(0.0007)
Asthma	0.0004	0.0000	**0.0004**	0.0001
	(0.0003)	(0.0001)	(0.0002)	(0.0001)
Smoke	0.0008	0.0006	0.0000	0.0001
	(0.0006)	(0.0004)	(0.0001)	(0.0004)
PHI	0.0002	0.0004	-0.0002	-0.0001
	(0.0003)	(0.0003)	(0.0004)	(0.0002)

Note: Figures in bold are at least significant at 10% level.
Source: Author's estimation

TABLE 4: Raw Total and Explained Gender Differences in Health Care Utilisation in Malaysia, 1996 and 2006

	1996				2006			
	ADMIT_GH	ADMIT_PH	VISIT_GC	VISIT_PC	ADMIT_GH	ADMIT_PH	VISIT_GC	VISIT_PC
Male	0.0872	0.0086	0.0517	0.0532	0.0886	0.0151	0.0393	0.0740
Female	0.0787	0.0188	0.0362	0.0797	0.0675	0.0094	0.0627	0.0408
Difference	0.0085	-0.0102	0.0155	-0.0264	0.0211	-0.0012	-0.0234	0.0332
Income	0.0025	-0.0019	-0.0042	0.0011	**-0.0133**	-0.0021	-0.0006	-0.0035
	(0.0030)	(0.0015)	(0.0030)	(0.0024)	(0.0068)	(0.0025)	(0.0041)	(0.0038)
Education	0.0042	0.0002	0.0009	**0.0085**	-0.0006	0.0005	-0.0008	**-0.0039**
	(0.0049)	(0.0023)	(0.0044)	(0.0034)	(0.0016)	(0.0005)	(0.0013)	(0.0019)
Job status	**-0.0075**	-0.0013	-0.0001	-0.0003	0.0006	**-0.0019**	-0.006	-0.0020
	(0.0026)	(0.0010)	(0.0024)	(0.0020)	(0.0014)	(0.0010)	(0.009)	(0.0014)
Ethnic	-0.0005	0.0006	-0.0003	-0.0002	-0.0006	**0.0029**	-0.0022	0.0013
	(0.0007)	(0.0004)	(0.0005)	(0.0005)	(0.0020)	(0.0010)	(0.0018)	(0.0009)
Region	0.0000	-0.0000	-0.0006	-0.0002	**0.0046**	-0.0006	0.0015	**-0.0024**
	(0.0004)	(0.0003)	(0.0004)	(0.0003)	(0.0021)	(0.0005)	(0.0017)	(0.0008)
Single	**-0.0212**	-0.0009	0.0060	**-0.0150**	-0.0005	-0.0001	0.0012	0.0006
	(0.0098)	(0.0031)	(0.0062)	(0.0067)	(0.0038)	(0.0018)	(0.0028)	(0.0038)
Rural	0.0004	-0.0000	-0.0001	0.0008	-0.0000	-0.0001	-0.0000	-0.0001
	(0.0004)	(0.0001)	(0.0002)	(0.0006)	(0.0003)	(0.0002)	(0.0004)	(0.0003)
Hypertension	**0.0013**	0.0000	**0.0010**	0.0002	**-0.0055**	-0.0003	-0.0012	-0.0024
	(0.0005)	(0.0002)	(0.0005)	(0.0002)	(0.0015)	(0.0003)	(0.0008)	(0.0015)
Diabetes	**0.0024**	0.0002	**0.0011**	-0.0002	**-0.0042**	-0.0003	**-0.0015**	-0.0014
	(0.0009)	(0.0004)	(0.0006)	(0.0002)	(0.0012)	(0.0003)	(0.0007)	(0.0012)
Asthma	**0.0031**	0.0001	**0.0028**	**0.0015**	**0.0040**	0.0009	**0.0035**	**0.0022**
	(0.0007)	(0.0003)	(0.0007)	(0.0006)	(0.0009)	(0.0007)	(0.0009)	(0.0008)
Smoke	0.0064	0.0005	-0.0002	-0.0002	**0.0010**	-0.0000	0.0000	0.0001
	(0.0058)	(0.0021)	(0.0039)	(0.0042)	(0.0006)	(0.0000)	(0.0000)	(0.0002)
PHI	-0.0000	0.0004	0.0005	0.0009	-0.0001	0.0000	0.0003	0.0005
	(0.0002)	(0.0005)	(0.0004)	(0.0006)	(0.0003)	(0.0000)	(0.0005)	(0.0005)

Notes: Standard errors are reported in parentheses. Figures in bold are at least significant at 10% level.
Source: Author's estimation