THE IMPACT OF THE ENVIRONMENTAL FACTOR ON THE USE OF HEALTHCARE SERVICES IN VIETNAM: A CASE OF NORTHERN VIETNAM

MA. Nguyen Thi Tuyet
tuyetnt@thanglong.edu.vn
Faculty of Economics and Management, Thanglong University, Hanoi, Vietnam
Assoc. Prof. Dr. Nguyen Viet Hung
hungnv@neu.edu.vn
Faculty of Economics, National Economics University, Hanoi, Vietnam

Abstract

The study examines the factors affecting health demand in Vietnam, specifically the northern part of Vietnam, based on the 2016 VHLSS dataset. The first results show that individual and household characteristics are impact on the individual's demand for medical services. Second, the study found that purchasing health insurance increased the frequency of medical visits by policyholders and contributed to a reduction in their medical spending. Third, air pollution is considered as one of the important factors that increase current health spending. From there, the study gives some policy recommendations for state agencies.

Keywords: *environment pollution, health insurance, VHLSS, inpatient, outpatient*

1. Introduction

In Vietnam, in recent years, with many reforms on health policies, the ability of access to health services has been significant increased, and people are getting better and better health care. However, health expenditure is still rising, creating a financial burden for many families. This is also the reason why many households with members being ill, falling into poverty after paying medical expenses (Hoang Van Minh, Phuong, Saksena, James, & Xu, 2012).

The impact of determinants on healthcare utilization is studied in many countries and in Vietnam. All of them showed that health expenditure of individuals affected a wide range of factors, including: personal characteristics, household characteristics, health insurance (Ahmed, Tomson, Petzold, & Kabir, 2005; Mocan, Tekin, & Zax, 2004; Onwujekwe et al., 2010). However, most of these studies mainly study separately the factors influencing decisions on using health services and health expenditure. This paper consider healthcare demand that is a process from deciding using healthcare services to deciding how to payment for medical services.

Many previous studies shows that personal characteristics, household characteristics, and health insurance policies affect behavior of using health care services. In addition, the

state of the environment in Vietnam from water, air, food, noise or land is polluted at an alarming rate, directly threatening health and affecting many life activities. Scientists pointed out that one of the causes of the increasing incidence of cancer is the increasingly degraded living environment. The number of people suffering from cancer, occupational diseases, affecting nerves and endocrine gland function, children having birth defects is increasing day by day. This increases the pressure on health expenditure. The humid tropical monsoon climate is also favorable for the development of many diseases, along with the problem of population aging, which also significantly increases the demand for health services in our country. Therefore, the study of determinants of healthcare demand is still very important and meaningful in the current context. This study aims to investigate factors affecting healthcare demand, including two steps: factors influencing on annual frequency of outpatient and inpatient visits at health facilities and factors influencing on spending on healthcare at health facilities. Besides the introduction and references, the paper is organized into 4 parts. Part 2 is literature reviews, part 3 is data and research method, part 4 presents analysis results and discussion. The final part is the conclusion and some policy implications.

2. Literature reviews

There have been a number of empirical studies that estimated the impact of factors on the health services utilization. Ahmed et al. (2005) studied health-seeking behavior of elderly people in Bangladesh. This study found that education and poverty are two important factors impacting on health care seeking behavior. Kevany et al. (2012) studied impact of socio-economic status and employment status on health care utilization in rural Zimbabwe by using data collected from random household surveys in Mutoko district of a province of Zimbabwe with logistic regression. The research has shown that health care utilization is highly related to the socio-economic factors and employment status.

Wagstaff, Lindelow, Jun, Ling, and Juncheng (2008) evaluated the benefit of voluntary health insurance programs of people in rural of China. This study combine differences-in-differences with matching methods to estimate and showed that health insurance increased outpatient and inpatient utilization, but it did not reduce outpatient and inpatient expense per visit.

Supply-side factors from the health facility are also found to have an impact on health expenditure. Lépine and Le Nestour (2011) showed that the quality of medical care and travel costs are the important factors affecting the probability of seeking treatment from health facilities. An increase in average travel costs reduces your ability to seek medical care by 25%. Laokri, Soelaeman, and Hotchkiss (2018) used the variable satisfaction on health facilities to represent the quality of health care services and showed that the better service quality, the more people are willing to pay more on health spending, and distance to health facilities also have a negative impact on individuals' health spending.

Jowett, Contoyannis, and Vinh (2003) used a two-step Heckman estimate to deal with the endogenous problem of insurance, thus ignoring the selection of health seeking. Waters (1999) studied the effects of health insurance in Ecuador also examined the presence of selection bias in healthcare search through two separate steps, the author first used the Probit model to predict the probability of using health services and then put the forecast value in the OLS model to estimate health expenditure. The results also showed the presence of selection bias.

Hoang Van Minh et al. (2012) used logistic regression method to study the factors that influence catastrophic health expenditure. The results also showed that the economic characteristics of households impact on household health expenditure. Higher-income households will increase health spending and pay more for expensive medical services. Households living in rural have a significantly higher proportion of catastrophic health spending than those living in urban.

Nguyễn Thị Thùy Trinh, Nguyễn Thị Kim Xuyến, and An (2018) investigated determinants affecting the decision of health care seeking and the amount spent on health care of the farmers in Tra Vinh province, using data collected from 200 farmer households in one district of Tra Vinh province. The results also show that the factors affecting the amount of health spending by households, such us occupation of household heads, capita income, subsidy policy and household economic status.

Previous studies have shown the factors affecting the use of health services. In Vietnam, however, there are some fators which are not fully considered. This study estimates the factors influencing the use health services including personal characteristics, family characteristics, health insurance, characteristics of health facilities and environmental pollution. Characteristics of medical facility such as distance to nearest medical facility. In addition, this paper considers separately for inpatient and outpatient health spending because these two types of health services have many different characteristics.

3. Method

3.1 . Research data

To analyze the factors affecting health demand, this study uses data extracted from from the Household Living Standards Survey (VHLSS) Dataset which is conducted every 2 years by the General Statistics Office, the VHLSS 2016 is use in this study. The data set used for the study is cross-sectional data with 10580 observations with characteristics including health expenditure, health insurance, individual characteristics, and household characteristics. The data only includes individuals in households in the North of Vietnam, including the Red River Delta and the Northern Midlands and Mountains.

3.2. Definition of variables

From a review of previous studies,the author considers four groups of variables that are likely to affect demand for health services. The first group is the characteristics of the individual such as age, gender, ethnicity, health insurance. The second group is the characteristics of the household; the third group is the health facility characteristics such as the distance to the nearest medical facility (representing the availability of the medical). The fourth group is the living environment characteristics such as environmental status, living area, which is typical for climate, geography, socio-economic characteristics where the individual lives. These are important factors affecting access to health services and health spending personal.

Personal health expenditure here means health out-of-pocket spending including expenditures on medical care during personal visits to medical facilities or visits through medical facilities. private physician. Specifically, in this study health expenditure of a personal include fee and treatment, medical bills, physician training, travel, buy instruments, ... concerning examinations/treatment that does not take into account the individual buying medicine for self-treatment. With this concept, health expenditure is only observed for individuals who choose to use health services, and not for individuals who do not choose to use health services, that is, do not go to the doctor. The squared age variable is included because it can have a non-linear relationship with health. In this study, the economic status of the household is measured by the per capita income of the household.

Definitions of variables are detailed in Table 1.

Table 1. Definition of variables

Variables	Define
Dependent variable	
Number of outpatient visits	Calculated by the number of outpatient visits at medical facilities
Number of inpatient visits	Calculated by the number of inpatient visits at medical facilities
Outpatient care expenditure	Natural logarithm of outpatient expenditure
Inpatient care expenditure	Natural logarithm of inpatient expenditure
Independent variables	
Health Insurance	1= Have health insurance

Variables	Define
	0= No health insurance
Ethnic	1= Kinh people
	2= Ethnic Minority
Residence	1= Urban area
	2= Rural area
Education of the household head	
	1= No degree
	2= Elementary school
	3= Have a secondary school/high school diploma
	4= Have a high school diploma
Household size	
Gender of household head	1= Male
	2= Female
Education	
	1= No degree
	2= Elementary school
	3= Have a secondary school/high school diploma
	4= Have a high school diploma
Income	Logarithm of average household income
Age	Calculate by years
Age squared	Square of age
Gender	1= Male
	2= Female
Number of times sick	Number of times sick and unable to work or study,
Distance to nearest medical facility	Distance from commune to nearest medical facility
Environmental pollution	Measured by the concentration of PM2.5 in the air

3.3. Estimated model

Healthcare demand in this study included the number of individual outpatient visits and the amount of money the individual spent on healthcare during the visits in 12 months. With the model to estimate the factors affecting the number of individual visits, because the dependent variable is the number of inpatient and outpatient visits, which is numerical data, the study uses the Poisson regression model is suitable. For individuals who have no doctor visits or being payment by 100% covered health insurance, these individuals' health expenditures are zero, so there is a large number of observations for health expenditure equals 0 so it is appropriate to use a two-part model to estimate inpatient and outpatient health expenditure. The first part of the model estimates the likelihood of positive out-of-pocket payments at a health facility, whereas the second part of the model estimates the positive level of out-of-pocket expenditure per patient.

The study used Stata 14 software for cleaning data and quantitative analysis.

4. Results

4.1. The use of healthcare and environmental problems in Northern Vietnam

Table 2 presents the number of visits and average outpatient and inpatient medical expenditures of individuals in the past 12 months up to the time of the survey .

Table 2. Use of health services in Northern Vietnam

	Number of outpatient visits	Number of inpatient visits	Average outpatient expenditure (thousand dong)	Average inpatient expenditure (thousand dong)
Residence				
Rural	0,83	0,14	293,47	497,61
Urban	1,06	0,13	451,23	581,52
Ethnic				
1.Kinh	0,98	0,14	410,90	609,98
2. Non- Kinh people	0,65	0,14	108,30	245,95
Gender :				

1. Male	0.7 5	1.12	295.73	542.71
2. Female	1.04	1,16	375,75	499,20
Health insurance :				
1. Have health insurance	0,97	1,15	331,10	552,59
2. No health insurance	0,54	0,06	361,16	375,45
Age				
<18 years old	0,71	0,09	136,09	159,40
18-35 years old	0,83	0,10	182,78	498,48
35-50 years old	0,83	0,11	456,91	577,21
50-65 years old	1,32	0,20	590,94	849,92
>65 years old	1,87	0,35	698,44	1 . 095,51
Income				
1(The poorest group)	0,72	0,16	118,69	221,29
2	0,94	0,15	262,65	439,97
3	0,87	0,13	330,21	495,98
4	0,92	0,13	395,00	683,49
5 (Richest group)	1,04	0,13	576,88	763,07
Education				
1- No degree	0,97	0,17	227,76	330,98
2- Elementary school	0,98	0,15	313,81	472,04
3- Have a secondary school/high school diploma	0,83	0,13	358,51	621,09
4- Have a high school diploma	0,92	0,11	476,29	439,73
Household size				
1. Have 1 to 4 members	0,90	0,14	356,23	548,65
2. Greater than 5 members	0,83	0,13	265,49	436,40
Environmental pollution				

1(The lowest concentration of PM 2.5)	1,25	0,15	322,19	401,35
2	0,75	0,17	194,20	523,08
3	0,61	0,13	224,40	360,89
4	0,85	0,13	402,47	706,30
5 (The highest concentration of PM 2.5)	0,99	0,10	547,87	626,91

Source: Calculation from 2016 VHLSS data

The results are in Table 2 shows that people living in urban areas is the frequency of use of health services outpatient and health expenditure is higher than the people living in rural areas. Specifically people in urban areas have average outpatient visits of 12 months was 1.06 times, while the people living in the rural area is 0,83 times. The average health expenditure of people in urban areas was higher in rural areas shows that people in urban have the more ability to pay for medical services than people village area.

Similarly, the Kinh people also have the higher average visits and the health expenditure than the ethnic minorities. The health expenditure of the Kinh people for outpatient and inpatient medical services is 410,9 thousand VND and 609,98 thousand VND per year respectively, more than double that of ethnic minorities .

The table above also shows that people with health insurance have more inpatient and outpatient visits than people without health insurance. This shows that the majority of people participating in health insurance often have serious illnesses and often require inpatient rather than outpatient treatment. As a result, the average inpatient expenditure of those with health insurance is still higher than that of the outpatient, and the average inpatient medical expenditure of those with health insurance is still higher than those without health insurance. This was explained above, the participants of health insurance are often those with serious illnesses requiring inpatient treatment, health insurance contributes to reducing medical costs, but currently health insurance only pay for some medical items, in addition, the patient still has to pay some expenses such as travel expenses, accommodation costs, expenses for family caregivers. The frequency of inpatient care is higher, so patients with health insurance have a higher average inpatient expenditure.

About age, the data in Table 2 also show that when age increases, frequency of medical examination and treatment and health expenditure also increase . This is because as their age increase, their health becomes worse, and they are more likely to have health problems. Statistical results also show that when income increases, the frequency of medical examination and treatment and health expenditure on health also increase. This shows that

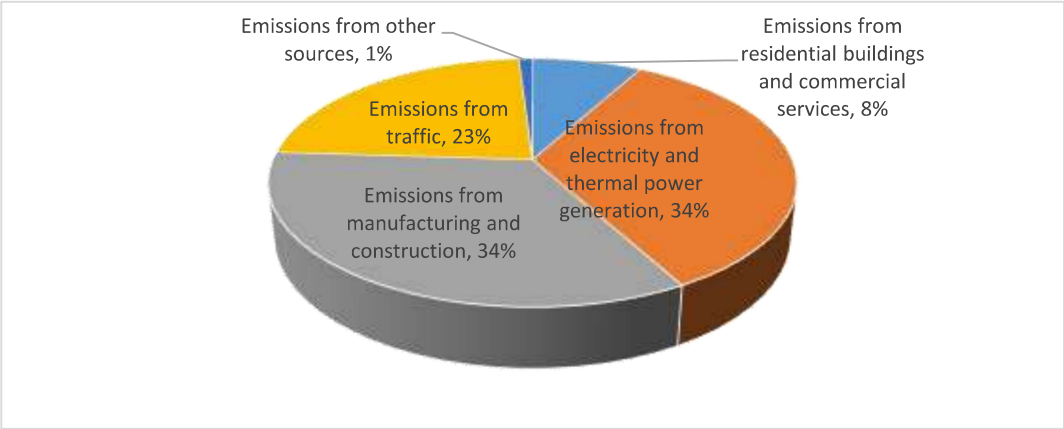
people with better economic conditions are more concerned about their health and more willing to pay for medical expenses. The rich are better able to pay for health services than the poor.

Regarding gender, women have a higher rate of inpatient and outpatient medical care than men, but women's inpatient health expenditure is less than that of men. This can be understood because during pregnancy, women often go to antenatal care at least once, in addition, women often pay more attention to health check-ups, so they often go to outpatient care than men. However, women have a lower average inpatient health expenditure than men, possibly because women have better health, fewer illnesses, and less disease severity. Men should have lower average health expenditures of women .

According to education, Table 2 also shows that the higher the education level, the more people pay attention to health care and are more willing to spend on health. The members of the household having fewer than 5 members are also frequency healthcare and have higher health expenditures for inpatient services and outpatient than households with five or more members. This shows that the household size is small, the members have more frequent medical check-ups and the household is also willing to spend on health services.

Statistics also show that when the level of air pollution increases, the number of outpatient visits also increases and health spending also increases. In recent years, with the trend of innovation and integration, Vietnam has been a bright spot in terms of economic development in Southeast Asia. However, Vietnam is still facing many challenges, including environmental pollution. Environmental pollution is considered one of the leading agents with negative impacts on public health, especially concentrated in developed urban areas, industrial zones and clusters. Due to the influence of climate and weather factors (including radiation regime, temperature, and precipitation), environmental pollution, especially air pollution in our country, is seriously affecting the health of the environment. people's health and significantly increase the pressure on current household health costs. Construction, renovation and new construction of apartment buildings, urban areas, repair of bridges and roads, housing, transportation of construction materials and wastes take place everywhere, causing smoke and dust to be released into the surrounding air environment. Due to the availability of data, this study uses air pollution to represent the impact of environmental pollution on healthcare demand of Vietnamese.

Figure 1: Air pollution in Vietnam



Source: World Bank (2010-2016)

Figure 1 shows that the main sources of air pollution include: emissions from traffic (23%); from processing, manufacturing and construction (34%); from electricity and heat production (34%); from residential buildings and commercial services (8%) and other sources (1%). In which, the largest amount of emissions comes from the manufacturing and construction industry and emissions from electricity and thermal energy production. The processing and manufacturing industry is considered the main pillar of the economy with a huge consumption of fuels as well as a large amount of emissions to the environment. Recycling activities also put considerable pressure on the environment and are common in the Northern region. The construction industry puts pressure on the air environment mainly because the construction units have not fully and strictly implemented environmental protection measures at the construction site. Livelihood activities are concentrated in rural areas, where raw materials for cooking and production are still mainly based on fossil fuels, firewood and uncontrolled waste as well as energy use by businesses, is the cause of high emissions from power generation and thermal energy. Emissions from traffic (CO, VOC, TSP from motorcycles and SO2, NO2 from cars) account for a significant proportion at 23% due to the strong increase in the number of vehicles over the years, contributing to significant deterioration in air quality. Due to pressure from urbanization, emissions from residential buildings and commercial services also cause air pollution, accounting for 8%. The farming sector also causes environmental problems due to an uncontrolled increase in the amount of chemical fertilizers, pesticides and post-harvest waste (including straw and dried plants) 1% of emissions come from the source of this. Air pollution is clearly at an alarming rate in urban areas, industrial zones and big cities.

PM2.5 dust is considered as the air pollutant that has the most negative impact on human health. Because of its very small size, PM2.5 dust is very dangerous, capable of depositing, penetrating and penetrating deep into the alveoli in the lungs and into the blood . N If the concentration of PM2.5 in the air cleaner, the daily exposure is greater and

increases the risk of acute health problems and chronic. Air pollution increases the risk of respiratory infections, heart disease, stroke and lung cancer. Both short-term and long-term exposure to air pollutants cause health effects. Children, women, pregnant women, the elderly, people with weak health, people who are sick are those who suffer the most from air pollution.

4.2. Estimated results

- Analysis of factors affecting the number of medical visits

Table 3 . Estimated results of factors affecting the number of outpatient and inpatient visits

Independent variables	**Number of outpatient visits** (2)	**Number of inpatient visits** (3)
Health Insurance	0.672***	0.760***
	[0.0374]	[0.107]
Ethnic	0.259***	-0.118
	[0.0374]	[0.0872]
Residence	-0.204**	-0.228
	[0.0992]	[0.294]
Education of household head		
No degree (reference)		
Elementary school	0.226***	0.148
	[0.0399]	[0.0903]
Have a secondary school/high school diploma	0.303***	0.153*
	[0.0378]	[0.0870]
Have a high school diploma	0.407***	-0.183
	[0.0704]	[0.213]
Household size	-0.0687***	-0.0855***
	[0.00741]	[0.0183]
Gender of household head	-0.150***	-0.171**
	[0.0307]	[0.0748]
Education		
No degree yet (reference)		
Elementary school	-0.232***	-0.381***
	[0.0375]	[0.0943]
Have a secondary school/high school diploma	-0.326***	-0.184**

	[0.0362]	[0.0842]
Have a high school diploma	-0.610***	-0.145
	[0.0736]	[0.187]
Income	0.0976***	-0.00631
	[0.0196]	[0.0476]
Age	0.00479**	-0.00419
	[0.00204]	[0.00466]
Squared-age	0.0000545**	0.000173***
	[0.0000232]	[0.0000528]
Gender	-0.256***	-0.163***
	[0.0232]	[0.0571]
Number of times sick	0.233***	0.413***
	[0.00806]	[0.00902]
Distance to nearest medical facility	0.00229	-0.00083
	[0.00147]	[0.00320]
Environmental pollution	-0.00101	-0.0383***
	[0.00583]	[0.0130]
_cons	-1,556***	-1.207**
	[0.211]	[0.480]
Number of observations	10580	10580

*Note: The symbols***/** /* represent significance at 1%, 5% and 10%, respectively.*

Source: Estimates from 2016 VHLSS data.

The coefficient of Health Insurance is positive in column (2) and column (3), both statistically significant at the 1% level. This result shows that when people have insurance, people go to the doctor more often. This result is similar to the study of Nguyen Huu Dung (2016). Currently, the health insurance policy stipulates to pay 100% of medical expenses for medical examination at the commune level for the items covered by the insurance, and 100% of the cost of health insurance for when going to the right doctor for a one-time payment less than 15% of base salary. As a result, the number of outpatient and inpatient visits has increased. Thus, the 2014 revised health insurance policy has a positive effect in encouraging people to visit doctors more.

The results also show that Kinh people have better access to outpatient health care services. Because ethnic minority people often live in mountainous and highland provinces, their understanding of health care is still limited. When they get sick, they usually self-treatment, so medical expenses are lower.

Regarding the place of residence, people in urban areas have fewer outpatient visits than in other regions. This is because in urban areas, living conditions are better, with better nutrition, so urban people have less outpatient medical care than in rural areas.

Regarding the education of the household head, the research results are quite similar to the results of Awiti (2014). The education of the household head positively affects the medical examination of the members of the household. Household heads with higher education have a better awareness of health care, so they are more concerned about the health of individuals in the household. In contrast, the coefficient estimates of the member's education variable are all negative, and this negative level increases with education level. The results show that members with higher education have a lower frequency of medical visits, indicating that with higher education, individuals are more conscious in health care.

The coefficients of the variable household size are negative and highly statistically significant in both models, showing that when the household size increases, individuals receive less health care, so the number of medical visits of the households increases. individuals in the household will decrease.

Regarding the gender of the household head, the estimated results show that the number of inpatient and outpatient visits of members of male-headed households is less than that of members of a male-headed household. household is female. This means that the female head of the household is more concerned with the health of the members than the male.

The coefficients of the income variable have a positive effect on the number of outpatient visits at the 1% significance level. This result suggests that individuals with a higher average income, which is interpreted as having better economic conditions, will take care of their health more often.

The results show that the frequency of outpatient visits increases with age. This is because as age increases, health declines, individuals experience more health problems and therefore the need for medical examination and treatment increases.

Men are shown to have a lower frequency of outpatient care than women, because women care more about their health, in addition, women are the object of childbirth, so they have to spend more during childbirth and pregnancy.

The level of illness of individuals also has a negative impact on the number of visits to the individual. Specifically, the number of times of being sick and unable to work increases,the number of outpatient and inpatient visits also increases.

Regarding environmental factors,the coefficient of air pollution in column 3 is negative and statistically significant. This is due to short-term research data, so in the short-

term air pollution have not caused serious diseases that require inpatient treatment. However, in the long term, air pollution can cause serious illnesses and increase inpatient visits.

- Analysis of factors affecting health expenditure

Table 4 . Estimated results of factors affecting health expenditure

Independent variables	**Outpatient expenditure (2)**	**Inpatient expenditure (3)**
Health Insurance	-0,176**	-0,295*
	[0,0856]	[0,157]
Ethnic	0,257**	0,244*
	[0,110]	[0,145]
Residence	0,449	0,579
	[0,289]	[0,501]
Education of the household head		
No degree (reference)		
Elementary school	-0,154	0,254*
	[0,119]	[0,152]
Have a secondary school/high school diploma	-0,0376	0,399***
	[0,112]	[0,145]
Have higher school diploma	0,0247	0,198
	[0,201]	[0,354]
Household size	-0,00235	0,0396
	[0,0223]	[0,0294]
Gender of household head	-0,209**	-0,132
	[0,0864]	[0,128]
Education		
No degree (reference)		
Elementary school	0,352***	-0,134
	[0,114]	[0,157]
Have a secondary school/high school diploma	0,320***	0,072
	[0,111]	[0,149]

Have higher school diploma	-0,119	0,16
	[0,205]	[0,300]
Income	0,201***	0,320***
	[0,0551]	[0,0794]
Age	0,0226***	0,0421***
	[0,00617]	[0,00815]
Squared – age	-0,000186***	-0,000463***
	[0,0000709]	[0,0000939]
Gender	-0,0258	0,246**
	[0,0633]	[0,0954]
Number of times sick	0,281***	0,276***
	[0,0345]	[0,0383]
Distance to nearest medical facility	0,00588	0,0117*
	[0,00540]	[0,00659]
Environmental pollution	0,0779***	0,0420*
	[0,0178]	[0,0229]
_cons	1,628***	2,710***
	[0,628]	[0,814]
Number of observations	10580	10580

*Note: The symbols***/** /* represent significance at 1%, 5% and 10%, respectively.*

Source: Authors' estimates from VHLSS 201 6

The estimated results in Table 4 show that the coefficient of health insurance is negative and statistically significant at 1% in both columns (2) and (3), showing that health insurance contributes to reducing costs of inpatient and outpatient medical care compared to people without health insurance.

The coefficient of the positive ethnicity variable shows that Kinh people have higher health expenditure than ethnic minorities. This shows that ethnic minorities still have difficulty in spending on health. In addition, now that ethnic minorities have free health insurance,when they go to medical facilities, their medical costs are also reduced.

Higher education of the household head reduces the likelihood of individuals having to go to an inpatient clinic, indicating that with a high level of education, the household head has better knowledge of individuals' health care. As a result, they are less likely to have serious illnesses that require hospitalization. However, when a member is sick, the heads of

these households are willing to spend more on health, so the average health expenditure of members of these households is also higher. This is also similar for the estimated results of the individual's education variable in outpatient spending.

The estimated results of the income variable show that with higher income, individuals have better access to health services and they are more willing to spend on health. Many households with good economic conditions are willing to use health services to expect the best medical treatment.

Outpatient expenditure of men is higher than that of women. For men, the more they age, the health of men less than women, men with average life expectancy is lower than women and often suffer from chronic diseases than women so health expenditure on average of men is more than that of women.

The coefficients of the variables age and age squared show that the likelihood of inpatient care and outpatient treatment increases with age, but the increase decreases with age. As age increases, health declines, therefore, health expenditure also increases .

The number times of being seriously ill increases, increases inpatient and outpatient expenditure of individuals. There is no evidence that distance to a health facility does not affect outpatient health spending, but increases inpatient health spending .

About environmental problems, pollution of air increases both inpatient and outpatient expenditure. Due to the development of industries and construction, air pollution is increasing day by day. When air pollution increases, people are prone to respiratory and cardiovascular diseases, so health spending also increases.

5. Conclusion

From the above analysis, the study draws some important conclusions as follows.

Firstly, health insurance increases the ability to use health services of individuals and reduces their health spending, thereby helping people get better health care. According VHLSS 2016, the rates of people having health insurance in Vietnam is 84%, the State needs to continue implementing policies health insurance the whole people to increase. Therefore, the State should continue to implement the policy of health insurance the whole people to increase audience participation health insurance,which will contribute to increase people's ability to access to medical care.

Second, economic conditions also have a positive impact on the use of healthcare. Members of households with high per capita incomeare willing to spend more on health care. Therefore, the State should have policies to promote economic development for the people and at the same time need to have policies to support members of low-income households to help them get better medical care.

Third, the research results also show that as the age increases, the demand for health also increases. Therefore, the State should continue to have health care policies for the elderly. Especially Vietnam is in a state of population aging, the proportion of people aged 60 years and above is high, accounting for 9.34% of the total population (VHLSS 2016), so the State should to focus on this group of people to give appropriate policies to enhance medical care for this group of people.

Fourth, environmental issues locally also affect health and increase health spending by individuals. In the coming time, the State needs to have good environmental management policies such as waste treatment, arrange production areas away from residential areas to reduce air pollution to protect people's health.

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