Patterns of Household Expenditure on Health Care in Thailand

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Introduction

Since 1996, the national health expenditure of Thailand has been more than 200,000 million baht per year (Office of National Economic and Social Development Board, 1999). During the past two decades between 1980 to 1997, using the constant price in 1988, health expenditure per capita increased from 619 baht in 1980 to 2,101 baht in 1997 (Office of National Economic and Social Development Board, 1999).

The share of Gross Domestic Products on health care increased from 3.28 percent in 1980 to 4.82 percent in 1997; the highest was 5.25 percent in 1987-1988 (Office of National Economic and Social Development Board, 1999). The increased rate of health expenditure per capita was higher than the increased rate of Gross Domestic Products and the increased rate of National Income Per Capita (Manopimok, 1998). The World Health Organization (2000) reported that Thailand used more resources to improve the health status of the population but achieved less health outcomes than many neighbouring countries such as Singapore, Malaysia, and Brunei.

The highest proportion of national health expenditure came from the household sector (77–86 percent per year). Therefore, the household as a unit of analysis is the most important area to study concerning health expenditure in Thailand. From reviewing research in the area of health consumption in Thailand it was found that the main objective of them was to study the overall situation of the national health expenditure. Most of them used the country as a unit of analysis. Therefore, knowledge and understanding about household consumption on health in Thailand, particularly the

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patterns of health expenditure are insufficient. This was considered to be an essential basis for the success of any future intervention strategy to improve health consumption of Thai people or to control the national health expenditure.

Objectives

To investigate the patterns of household expenditure on health care according to region, administrative area (municipal, sanitary, rural), income, and occupation of the household head. The study emphasized on : the pattern of expenditure; and the pattern of health service purchasing.

Methodology

The study was an analysis of secondary data. The unit of analysis was the household. The Socio-Economic Survey 1996 conducted by the National Statistical Office was the database. This survey did not intend to study health expenditure directly. The main objective of the survey was collecting household data about income and expenditure. As the population of the whole country was represented and the data were collected directly from each sample household, the survey was suitable for use to study household expenditure on health care.

The Socio-Economic Survey 1996 asked a question on health care purchasing as follows “How much did your household pay in the last month for health care using the following items: drug purchasing; public health facilities; private health facilities; health personnel (physician, nurse, midwife, health officer), x-ray; visual examination; dental examination; laboratory examination; and other services?” The Socio-Economic Survey 1996 did not ask about the place of the health examination, public sector or private sector. Moreover, the data on services used in the hospital did not clarify whether it was for the use of services in the outpatient or the inpatient department. These were the data limitations. We do not know the place of examination and the department of hospital utilization.

Definition

Health expenditure was the amount of money that a household spent for medicine, curative care, health services, and health examinations. Health examinations included visual examination, dental examination, x-ray and laboratory examination. The reimbursement was included. This study excluded the expenditure on health promotion such as expenditure on soap, toothpaste, etc. and expenditure on health insurance.

Data analysis

SPSS for window was used for data analysis. Percentage and the chi-square test were used to describe and interpret.

Samples

The samples in this study were the 25,110 households, which was all of the samples from the Socio-Economic Survey 1996. Three characteristics distribution of the households is shown in Table 1.

A high proportion of households were in the Northeast region (28.2%) and in rural areas (44.4%). About one-third (32.9%) of the household heads were farmers. In order to express the obvious differences in economic status, the households were approximately equally divided into ten groups according to income per capita. There were 2,508–2,514 households in each decile. Decile 1 was the poorest, while decile 10 was the richest. The average income per capita of households in decile 1 was 575 baht per month, while the average income per capita of households in decile 10 was 115,628 baht per months. The details of household classification according to income per capita are shown in Table 2.

Table 1: Distribution of households by region, area, and occupation of the household head

Characteristic	Percentage	Number
Region		
Bangkok & vicinity	10.1	2,519
Central	22.5	5,661
North	22.7	5,706
NorthEast	28.2	7,089
South	16.5	4,135
Area		
Municipal	31.9	8,010
Sanitary	23.7	5,947
Rural	44.4	11,153
Occupation of the household head		
Profession & manager	8.1	2,036
Service & clerk	11.1	2,792
Trade	10.2	2,561
Agriculture	32.9	8,264
Labour	20.3	5,105
Housewife & others	16.7	4,204
Unknown	0.6	148
Total	100.0	25,110

Table 2: Household classification according to income per capita

Decile	Income level (baht)	Average income (baht)	Number of households
1	0-781	575.08	2,514
2	782-1,104	944.92	2,509
3	1,105-1,441	1,271.36	2,511
4	1,442-1,817	1,621.75	2,512
5	1,818-2,281	2,040.18	2,510
6	2,290-2,941	2,596.51	2.514
7	2,942-3,915	3,393.21	2,508
8	3,916-5,323	4,552.42	2,511
9	5,324-8,080	6,510.92	2,510
10	8,081-453,049	15,627.65	2,511
Total	0 - 453,049	3,913.02	25,110

Results and Discussion

Pattern of health expenditure

There were 17,834 households from 25,110 households (71 percent) that had health expenditure in the 30 days prior to the survey. One household had an enormous expenditure on health care. It was 700,000 baht per month. This amount deviated tremendously from the normal. So, this household was excluded from the analysis. In this part, data from 17,833 households were analyzed.

The average monthly health expenditure for the households that paid for health care was 144.05 baht per household. Table 3 shows health expenditure amount classified by the four selected characteristics. It was found that the average monthly health expenditure per household was significantly different according to household characteristics.

The comparison by region found that an average monthly health expenditure for households in Bangkok and vicinity was the highest, 272 baht per household; whereas for households in the NorthEast was the lowest, 99 baht per capita. Previous research indicated that the distribution of expensive medical equipment such as x-ray computer among regions in Thailand was unequal. Bangkok and vicinity had more than other regions (Tangcharoensathien and Chindawatana, 1999). Moreover, Bangkok and vicinity had more specialists and private health facilities than in other regions (Office of Policy and Planning, MOPH, 1997). The specialists usually used high technology such as new drugs and new methods to detect diseases, all of which are expensive. The service charge at private health facilities was more expensive than in other places. Therefore, health expenditure per household in Bangkok and vicinity was the highest.

The comparison by area of residence found that an average monthly health expenditure for households in a municipal was the highest, 224 baht per household whereas for households in a rural area was the lowest, 108 baht per household. The

reasons for this were the same as the differences among the regions that was discussed in the previous paragraph. The municipal area had more health resources and health services than the sanitary and rural areas. The specialists, the sophisticated hospitals and the high technology for medical care were in the municipal areas only. Therefore, the households in municipal areas paid more for health services than the ones in other areas.

The comparison by income level found that the average monthly health expenditure tended to increase according to income level. The average monthly health expenditure for the poorest household group was 38 baht per household, while the one for the richest household group was 593 baht per household. Income is the enabling factor that is available so that the health service can be used (Andersen, 1995). The demand for health care was influenced by income (Heller, 1982). Health services were more available to the rich than the poor. The rich could purchase more quality and quantity of additional medical care than the poor. Therefore, the richer households paid more for health care than the poorer households.

The comparison by occupation of households found that the average monthly health expenditure for the agricultural households was the lowest, 89 baht per household; while the one for the professional and manager households was the highest, 300 baht per household. Occupation is a characteristic that implies social class (Arber, 1988). The attitude and perception components of life styles, as well as the value, vary with occupation. Quality and quantity of health services were used according to social class. Previous research found that farmers and labourers used more “ya-chud” (many kinds of drug in an unlabeled package which are very cheap) than other occupations (Wibulpolprasert, ed., 1994). This finding was consistent with the study in Malaysia, which was found that agricultural households used modern health facilities less than the others did (Heller, 1982).

Table 3: Average monthly health expenditure classified by four selected household characteristics, and p-value from one-way ANOVA

Characteristic	Mean (baht)	S.D.	p-value	N
Region			.000	
Bangkok & vicinity	272.36	1,662.13		1,635
Central	157.84	559.80		4,072
North	140.01	700.31		4,030
NorthEast	91.40	508.89		5,387
South	140.68	513.47		2,709
Area of residence			.000	
Municipal	223.56	1,147.10		5,045
Sanitary	122.35	503.78		4,317
Rural	107.75	502.15		8,471
Income decile			.000	
1 (lowest)	37.84	82.73		1,934
2	50.29	131.70		1,973
3	64.10	293.94		1,876
4	69.46	154.79		1,866
5	83.40	267.26		1,879
6	122.08	554.55		1,857
7	132.81	375.43		1,785
8	197.24	622.63		1,646
9	222.76	635.10		1,587
10 (highest)	592.94	2,221.65		1,430
Occupation of the household head			.000	
Profession & manager	300.32	1,840.64		1,139
Service & clerk	189.69	727.24		1,687
Trade	170.45	549.12		1,768
Agriculture	88.82	421.41		6,450
Labour	104.48	472.78		3,567
Housewife & others	206.53	913.27		3,117
Unknown	152.94	459.85		105
Total	**144.05**	**745.60**		**17,833**

Pattern of health service purchasing

The health care system in Thailand has been described as pluralistic. People seek care from both formal and informal health sectors, from public and private health facilities, as well as from traditional medicine and modern medicine (Leoprapai and Sirirassamee, 1988). For self-treatment, people can buy drugs easily from many sources such as grocery stores, drug fund offices, and general drug stores (Isarabhakdi, 1992). The aim of this part was to investigate the health service purchasing patterns of households.

The types of health service purchasing were categorized into four groups: (1) self-treatment (drug purchasing); (2) treatment in the public sector; (3) treatment in the private sector (including direct pay to health personnel); and (4) health examinations. Because each household could purchase more than one type of health care, there were fifteen patterns of health service purchasing, which are presented in Table 4.

The first five patterns of health purchasing were: (1) self-treatment (48%); (2) treatment in the private sector (13%); (3) self-treatment plus treatment in the private sector (12%); (4) self-treatment plus treatment in the public sector (10%); and (5) treatment in the public sector (9%). However, there were three-quarters of households that purchased drugs for self-treatment. This finding indicated that drug purchasing for self-treatment was the treatment method, which Thai people used the most. It was consistent with many previous researches (Leoprapai and Sirirassamee, 1988; Srivanijchakorn et al., 1998).

The average expenditure was different according to the pattern of health service purchasing. The average expenditure for self-treatment was the lowest (26 baht per capita), because the illness of people who purchased drugs for self-treatment was common diseases such as cold, headache, diarrhea, etc. The price of drugs for common disease treatment was not expensive. Therefore, the price of self-treatment method was the lowest.

The average expenditure for the health service purchasing pattern of self-treatment plus treatment in the public sector plus treatment in the private sector plus examinations was the highest (1,875 baht per household), because this type used every treatment method.

Table 4: Percentage of households, and mean and standard deviation of health expenditure classified by health purchasing types

Purchasing type	Percentage	Mean (baht)	S.D.
Self-treatment (1)	47.5	25.72	73.44
Treatment in the public sector (2)	9.3	251.52	826.26
Treatment in the private sector (3)	13.1	246.63	1,437.36
Health examinations (4)	1.9	202.11	784.78
(1) + (2)	10.5	220.12	589.48
(1) + (3)	12.3	228.37	790.60
(1) + (4)	2.5	118.48	300.42
(2) + (3)	0.8	545.41	1,307.89
(2) + (4)	0.2	916.85	2,164.75
(3) + (4)	0.1	721.47	1,380.63
(1) + (2) + (3)	1.1	652.79	1,846.17
(1) + (2) + (4)	0.3	488.51	1,014.68
(1) + (3) + (4)	0.3	582.21	1,008.85
(2) + (3) + (4)	0.0	524.38	680.12
(1) + (2) + (3) + (4)	0.0	1,874.54	4.047.21
Total	100.0	144.05	745.60

In order to make understanding easy, re-grouping the patterns of health service purchasing was necessary. The various patterns of health service purchasing were categorized into three groups according to the quality and quantity of health service that were the nature of each pattern. The lowest efficiency treatment method is self-treatment (Sermsri, 1998). Private health facilities provide the best quality of health service (Nittayarumpong, 1998). Health examinations either in the private or public sector are an additional quantity. There were three groups of health service purchasing patterns (1) self-treatment only; (2) principal treatment in the public sector; and (3) principal treatment in the private sector and/or health examination.

Fifteen patterns of health service purchasing from Table 4 were re-grouped into three major patterns in Table 5. The households that had the health purchasing pattern of self-treatment only, did not have health expenditure on the other types. It came from the pattern (1) in Table 4.

The health service purchasing pattern group of principal treatment in the public sector consisted of two patterns, treatment in the public sector and self-treatment plus treatment in the public sector. They came from the pattern (2) and (1)+(2) in Table 4. The health purchasing pattern group of principal treatment in the private sector and/or health examination consisted of the rest twelve patterns.

The three pattern groups implied orderly purchasing of health care. Self-treatment only was the lowest efficiency treatment method. Principal treatment in the public sector was the medium quality and quantity treatment method. The principal treatment in the private sector and/or health examination was the highest quality and quantity treatment method.

Table 5: Percentage of households, and mean and standard deviation of health expenditure classified by health purchasing pattern groups

Pattern	Percentage (Number)	Mean (baht)	S.D.
Self-treatment only	47.5 (8,478)	25.72	73.44
Principal treatment in the public sector	19.8 (3,531)	234.91	711.02
Principal treatment in the private sector and/or health examination	32.7 (5,824)	261.22	1,161.46
Total	100.0(17,833)	144.05	745.60

Overall, almost half of households (48 percent) were in the pattern of self-treatment only, one-thirds (33 percent) were in the pattern of principal treatment in the private sector and/or health examination. The percentage of households in the pattern of principal treatment in the private sector and/or health examination was higher than the

one in the pattern of principal treatment in the public sector. In fact, if ill persons who had health insurance used service in the public sector, they do not pay. Therefore, this may be a reason for this finding.

The average expenditure for the principal treatment in the private sector and/or health examination was the highest (261 baht), while the one for self-treatment only was the lowest (26 baht). Because the principal treatment in the private sector and/or health examination had more quality and quantity of health service than other pattern groups, the average expenditure of this pattern group was the highest. Moreover, the service charge at private health facilities was higher than those at the others. These results confirmed that the three pattern groups implied orderly purchasing of health care. Self-treatment was the lowest, principal treatment in the public sector and/or health examination was medium, and principal treatment in the private sector was the highest.

Table 6 shows distribution of households by health service purchasing patterns. The distributions of health service purchasing patterns were significantly different statistically according to household characteristics.

Households in Bangkok and vicinity had less pattern of principal treatment in the public sector than in other regions, but had more pattern of principal treatment in the private sector and/or health examination than in other regions. The lifestyle of people in Bangkok and vicinity was hurried. People in Bangkok and vicinity used most of their time for work in order to earn their living. They could easily access private health facilities (Soonthorndhada and Thongthai, 1996). There were many steps to use the health service in the public health facilities, and the queue was very long). Therefore, households in Bangkok and vicinity had less pattern of principal treatment in the public sector than in other regions.

Table 6: Percentage of households classified by health service purchasing patterns and four selected household characteristic, and p-value from chi-square test

Characteristic	Self-treatment only	Principal treatment in the public sector	Principal treatment in the private sector and/or health examination	Total
Region				
Bangkok & vicinity	48.6	13.8	37.6	100.0
Central	49.1	20.0	30.9	100.0
North	47.8	18.3	33.9	100.0
NorthEast	48.3	21.6	30.3	100.0
South	42.6	22.3	35.1	100.0
				p = .000
Area of residence				
Municipal	45.2	14.8	40.0	100.0
Sanitary	48.2	21.0	30.8	100.0
Rural	48.6	22.0	29.2	100.0
				p = .000
Income decile				
1 (lowest)	52.2	21.9	25.9	100.0
2	50.8	23.9	25.2	100.0
3	49.8	22.0	28.2	100.0
4	50.8	21.2	28.0	100.0
5	49.9	19.5	30.7	100.0
6	45.3	20.5	34.2	100.0
7	46.2	18.4	35.4	100.0
8	43.9	18.4	37.7	100.0
9	44.1	15.4	40.5	100.0
10 (highest)	39.1	14.3	46.6	100.0
				p = .000
Occupation of the household head				
Profession & manager	38.7	17.4	43.9	100.0
Service & clerk	45.3	16.3	38.4	100.0
Trade	44.3	13.7	42.0	100.0
Agriculture	50.0	21.8	28.2	100.0
Labour	51.3	17.4	31.3	100.0
Housewife & others	44.4	24.6	31.0	100.0
Unknown	49.5	19.0	31.4	100.0
				p = .000
Total	47.5	19.8	32.7	100.0

Households in municipal areas had less pattern of self-treatment only and of principal treatment in the public sector than in other areas, but had more pattern of principal treatment in the private sector and/or health examination than in other areas. This was due to the municipal area having more private health facilities than the other

areas. Households in municipal areas had easy access to private health facilities such as private hospitals, private polyclinics, private clinics, etc.

The percentage of households that had the pattern of self-treatment only and of principal treatment in the public sector tended to decrease according to income level, while the percentage of households that had the pattern of principal treatment in the private sector and/or health examination tended to increase according to income level. In general, people who have a higher income level can afford more quality and quantity of medical care than ones who have a lower income level. Therefore, the households that have a lower income level purchased drugs for self-treatment only and received more treatment in the public sector than ones that had a higher income level. While the households that had a higher income level received more treatment in the private sector than ones that had a lower income level.

The professional and manager households had less pattern of self-treatment only than other households, but had more pattern of principal treatment in the private sector and/or health examination than other households. The trade households had less pattern of principal treatment in the public sector than other households. The labourer households and the agricultural households had more pattern of self-treatment only than other households.

Most of the labourer households and the agricultural households were the poor, while most of the professional and manager households were the rich. From the previous paragraph, the poor purchased more drugs for self-treatment than the rich but received less treatment in the private sector than the rich.

The trade households were treated less in the public sector than other households. There were many steps to use health services in the public health facilities and the queue was very long. The trade households were business households that did not have enough time to use health services in the public health facilities. Therefore, the trade households received less treatment in the public sector than the others, while the

housewife and others households received more treatment in the public sector than the others.

Conclusion

There were 71 percent from 25,110 households that had health expenditure in 30 days before the survey. The average monthly health expenditure for the households that paid for health care was 144.05 baht per household. The average monthly health expenditure was different among households according to household characteristics such as region, area of residence, income, and occupation of the household heads.

The various types of health service purchasing were categorized into four groups: (1) self-treatment (drug purchasing); (2) treatment in the public sector; (3) treatment in the private sector; and (4) health examinations. Because each household could purchase more than one type of health care, there were fifteen patterns of health purchasing such as; self-treatment, self-treatment and treatment in the private sector, self-treatment and treatment in the private sector, etc. The various patterns of health purchasing were categorized into three groups according to the quality and quantity of health services. They were (1) self-treatment only; (2) principal treatment in the public sector; and (3) principal treatment in the private sector and/or health examination.

Almost half of the households (48 percent) were in the pattern of self-treatment only, one-third (33 percent) were in the pattern on principal treatment in the private sector and/or health examination, and one–fifth (20 percent) were in the pattern of principal treatment in the public sector. However, there were three-quarters of households that purchased drugs for self-treatment. Health purchasing patterns was different among households according to household characteristics such as region, area of residence, income, and occupation of the household heads.

Recommendations

1. The high proportion of drug purchasing for self-treatment indicated that pharmacy should be included as one of the important parts of the health insurance system.

2. Some details of health expenditure from the Socio-Economic Survey 1996 were unclear. For example, health examination expenditure did not indicate whether it was for the public sector or the private sector and the data on services used in the hospital did not clarify whether it was for the use of services in the outpatient or the inpatient department. Therefore, a further Socio-Economic Survey should include more of these details and clarify it better.

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