Factors Associated with State Hospital Utilisation among Thai Elderly who had Illnesses which Needed Hospitalisation

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Abstracts

Of the 4,480 elderly subjects in a multistage random sampling household survey of a National Survey of the Welfare of the Elderly in Thailand (SWET), 669 (14.9%) reported that they had been hospitalised during the last year and were recruited in an analysis which aimed to examine associated factors of state hospital utilisation among Thai elderly. Seventy eight per cent had been admitted once during the last year. Mean (standard deviation) duration of hospital stay during the last year was 11.9 (20.1) days. For the last period of hospitalisation, 532 elderly (79.5%) were admitted to state hospitals. One hundred and nineteen elderlies (17.8%) used private hospitals. Only 18 elderly (2.3%) used both state and private hospitals. According to the causes of hospitalisation, the elderly who used state hospitals were not more severely ill than those who used private hospitals. Nine univariate factors associated with state hospital utilisation were entered in a logistic regression model in which five independent determinants were identified including 'do not have electricity', 'heads of the family are not their children', 'do not have own savings', 'live in rural area', and 'have heard about free health care programme'. The Ministry of Public Health and organisations which are concerned with the elderly should allocate more resources to advertising a free health care programme for Thai elderly.

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When people become ill, they will react in various ways. People with minor illnesses prefer a wait and see policy, using private health services, using community health centres or buying drugs over the counter. However, people with serious illnesses prefer going to see a doctor at the hospitals where they may be admitted. The population group which is the main user of hospital services, is the elderly[1]. At present the number of Thai elderly is increasing rapidly[2]. Their huge consumption of health service resources including hospital beds is inevitable. In 1992, the Ministry of Public Health announced a free health care program for all Thai elderly who used services provided by the Thai government. However, a certain number of Thai elderly still use the services of private hospitals when they are seriously ill. Selecting hospitals by seriously ill elderly or their care-givers may be influenced by many factors such as the distance between home and hospital or cost of service. Knowing about these associated factors is useful for administrators and health care providers who have to set up a proper health care policy and plan. The present study aimed at examining associated factors of state hospital utilisation by Thai elderly who had an illness which needed hospital admission by using data of a National Survey of the Welfare of the Elderly in Thailand (SWET) conducted in 1995.

SUBJECTS AND METHOD

During 1995, a multistage random sampling household survey of a National Survey of the Welfare of the Elderly in Thailand (SWET) was conducted. One subject aged 50 and over was randomly selected from each house. The total number of the subjects recruited in the SWET project was 7,713. These subjects were interviewed by trained interviewers. If subjects were not able to communicate or provide data to the interviewers, their care-givers were interviewed. All subjects and their care-givers were informed about the objectives of this study before starting the interview. Repeated visits were made until a successful interview was completed.

All subjects and/or their care-givers were asked whether the subject had been hospitalised during the last 12 months. The number and duration of admissions were noted. The type of hospital and diagnoses of their illnesses were recorded for the last period of hospitalisation. Personal data, socio-economic data, perceived health status, functional ability and other health data which might be associated factors of state hospital utilisation were collected.

Because the present study aimed to examine factors associated with state hospital utilisation among Thai elderly who had been hospitalised during the last year, subjects aged 60 and over were included in the analysis (n = 4,480). Univariate factors of state hospital utilisation were identified by using chi square test or student *t* test wherever they were appropriate. Those associates meeting a p-value of < 0.05 were entered into a logistic regression model. Odds ratios, adjusted odds ratios, and 95 per cent confidence intervals[3,4] were produced as estimates of strength of association. The SPSS-PC program was used for statistical analysis.

RESULTS

Of the 4,480 community elderly residents, 669 (14.9%) subjects reported that they had been hospitalised during the last year. Their mean age and its standard deviation (SD) were 70.6 and 7.5 years respectively. Thirty seven per cent of them were male. Most of the subjects (72.9%) lived in rural areas. Seventy eight per cent were admitted once during the last year. Less than 3 per cent were admitted more than 3 times. (figure) On average, each of the elderly subjects (n = 669) was hospitalised 1.4 times. The mean and its standard deviation of duration of hospital stay during the last year were 11.9 and 20.1 days respectively.

For the last period of hospitalisation, 532 (79.5%) were admitted to state hospitals. One hundred and nineteen elderly (17.8%) were admitted to private hospitals. Only 18 subjects (2.3%) used both state and private hospitals. Characteristics of elderly subjects classified by type of hospital use (last hospitalisation) are shown in Table 1. The 10 most common causes for the last period of hospitalisation were diarrhoea (13%), heart diseases including coronary heart disease (6.9%), peptic ulcer or gastritis and their complications (6.1%), hypertension (6%), injury or accident (4.6%), cataract (4.2%), asthma and chronic obstructive pulmonary diseases (4%), syncope and fainting (3.6%), stroke (3%), and abdominal pain (3%). (Table 2) Means (standard deviations) of duration of admission of elderly subjects who used state hospitals, private hospitals and both hospitals are 10 (17.5), 5.4 (6.2)

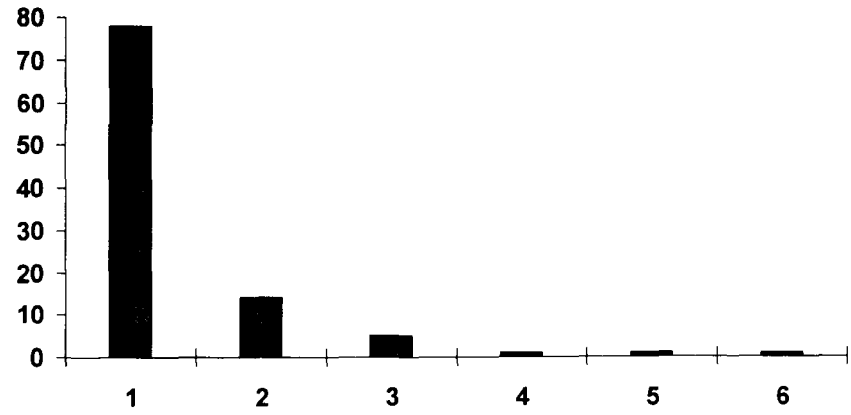

Fig. 1. Percentage of 669 elderly subjects who stayed in hospitals during the last year by the number of times hospitalised.

Table 1. Characteristics of elderly subjects who had hospitalised during the last year classified by type of hospital use.

		State hospital n = 532	Private hospital n = 119	Private and state hospital n = 18
age - mean (SD)		70.4 (7.4)	71.5 (7.7)	68.8 (8.9)
sex (%male)		37%	39.5%	22.2%
marital status (%)	married	49.6	49.6	55.5
	separated/divorced	4.1	3.4	5.6
	widowed	44.7	42.9	33.3
	single	1.5	4.2	5.6
cannot use public transport - n (%)		191 (35.9)	58 (48.7)	8 (44.4)
rate their health that bad or fairly bad - n (%)		293 (55.1)	64 (53.8)	11 (61.1)
do not have tap water - n (%)		410 (77.1)	75 (63)	9 (50)
do not have toilet - n (%)		44 (8.3)	3 (2.5)	0 (0)
do not have electricity - n (%)		20 (3.8)	0 (0)	(0)
cannot walk 1 km - n (%)		159 (29.9)	48 (40.3)	6 (33.3)
their children is head of family - n (%)		83 (15.6)	39 (32.8)	8 (44.4)
not satisfied with financial status - n (%)		173 (32.6)	35 (29.4)	7 (38.9)
had savings - n (%)		34 (6.4)	17 (14.3)	0 (0)
had formal education - n (%)		335 (63)	70 (58.8)	12 (66.7)
live in rural area - n (%)		420 (78.9)	59 (49.6)	9 (50)
know about free health care for elderly - n (%)		460 (90.7)	74 (67.2)	12 (75)

and 13.2 (20.2) days respectively. There is a statistically significant difference between the mean of duration of admission of subjects who used state hospitals and that of subjects who used private hospitals ($p < 0.05$). For hospital bill payment among those who used private hospitals only or both state and private hospitals, 30 per cent of the elderly subjects paid themselves, 4 per cent of their spouses paid, 60 per cent of their children paid and 1.6 per cent of their grandchildren paid.

Because the subjects who used both state and private hospitals had been hospitalised in private hospitals first and then were referred to state hospitals, these subjects and elderly subjects who used private hospitals were classified as 'subjects who did not utilise state hospitals'. Elderly subjects who used only state hospitals were classified as 'subjects who utilised state hospitals'. By this classification, univariate factors associated with state hospitalisation were 'can use public transport', 'can

Table 2. The 10 most common causes of the last hospitalisation among 669 Thai elderly - n (%).

	State hospital (n=532)	Private hospital (n=119)	Private and state hospital (n=18)	Total (n=669)
Diarrhoea	76 (14.3)	10 (8.4)	1 (5.5)	87 (13)
Heart diseases including coronary artery disease*	24 (4.5)	21 (17.6)	1 (5.5)	46 (6.9)
Peptic ulcer and complications	37 (6.9)	4 (3.4)	-	41 (6.1)
Hypertension	32 (6)	6 (5)	2 (11.1)	40 (6)
Injuries/accidents	24 (4.5)	6 (5)	1 (5.5)	31 (4.6)
Cataract	24 (4.5)	4 (3.4)	-	28 (4.2)
Asthma / chronic obstructive pulmonary disease	22 (4.1)	5 (4.2)	-	27 (4)
Syncope / fainting	20 (3.8)	4 (3.4)	-	24 (3.6)
Stroke	16 (3)	4 (3.4)	-	20 (3)
Abdominal pain	17 (3.2)	2 (1.7)	1 (5.5)	20 (3)

* statistical difference between state hospital group and private hospital group ($p<0.05$)

walk 1 km', 'do not have tap water', 'do not have a toilet', 'do not have electricity', 'heads of the family are not their children', 'do not have own savings', 'live in rural area', and 'have heard about the free health care programme'. These nine univariate factors were entered in a logistic regression model in which five independent determinants were identified, including 'do not have electricity', 'heads of the family are not children', 'do not have own savings', 'live in rural area', and 'have heard about the free health care programme'. The overall prediction of the model was 81.5 per cent.

DISCUSSION

Findings from this study clearly demonstrate that Thai elderly consume a large amount of institutional resources. By average 21 per cent of Thai elderly stay in hospital once a year. Each Thai elderly occupies a hospital bed for 1.8 days per year. In 1997 there were 5.28 million elderly in Thailand (8.7% of total population)[5]. Therefore, this population will use 9.5 million bed-days for hospital admission in 1997. In simple words, this population needs 26,038 beds everyday or 28 per cent of the available hospital-beds all over the country.

Although there is a free health care programme for Thai elderly, 20 per cent of them still use private hospital during serious illnesses. However, children took the responsibility for hospital expenses for 60 per cent of the elderly who used private hospitals or both state and private hospitals. Duration of hospital stay among subjects who used private hospitals was significantly shorter than that of subjects who used state hospitals. According to the causes of hospitalisation, no evidence showed that the subjects who used private hospital had a less severe illness than subjects who used state hospitals. This finding may suggest low efficiency in state hospital services or a bed-block phenomenon[6]. A multidisciplinary team approach may improve the performance of state hospitals[7].

Five independent factors associated with state hospitals used are shown. Association between private hospital use and 'have own savings' suggests that the elderly who worked while they were young and had their own savings will have higher autonomy for selecting health services than those who did not. The association between 'children are head of family' and private hospital use and the finding that children paid hospital bills in 60 per

Table 3. Univariate and multivariate associated factors of state hospital utilisation analysed by chi square test and logistic regression model respectively.

Univariate factors	Odds ratio	95% confidence interval
can use public transport	1.66	1.14 - 2.42
can walk 1 km	1.53	1.03 - 2.25
do not have tap water	2.12	1.42 - 3.16
do not have toilet	4.04	1.24 - 13.23
do not have electricity*	-	-
head of the family is not his/her children	2.82	1.85 - 4.31
do not have own savings	2.07	1.12 - 3.84
live in rural area	3.80	2.56 - 5.64
have heard about free health care programme	4.55	2.81 - 7.36
Multivariate factors	**Adjusted odds ratio****	**95% confidence interval**
do not have electricity	298.02	2.8×10^{-5} - 3.17×10^{9}
head of the family is not his/her children	1.45	1.13 - 1.86
do not have own savings	2.28	1.11 - 4.67
live in rural areas	2.89	1.86 - 4.47
have heard about free health care programme	3.24	1.93 - 5.45

* Odds ratio and its 95% confidence interval are not able to be calculated because there was no elderly subject who lived in house without electricity used private hospital.

** Adjusted for all the achieving significant univariate variables

cent of the elderly subjects who used private hospitals, however, demonstrates that children still are essential care-givers for Thai elderly at present.

At present the availability of state hospitals is much better than that of private hospitals which are usually located in the city. A long distance between place of living in rural areas and private hospitals definitely affects the decision of selecting a hospital during serious illness. Because houses without electricity are found in remote areas, a strong association between 'do not have electricity' and state hospital use also suggests an availability of state hospitals in remote areas. However, poor financial status of people in this area may also be another explanation.

It is the right of Thai elderly to get free health care, at least from health care services which belong to the Ministry of Public Health. By principle, all Thai elderly should know about this right. However, nearly 20 per cent of elderly subjects who were hospitalised during the last year had never heard about the free health care programme. Moreover, the finding that 'have heard about free health care programme' is an independent factor of state hospital use suggests that the Ministry of Public Health and other organisations which are concerned with the elderly have to allocate more resources to advertising this programme.

SUMMARY

Thai elderly consume a large amount of health resources. This population needs 26,038 beds everyday or 28 per cent of the available hospital-beds all over the country at present. Nearly 80 per cent of Thai elderly who were hospitalised used state hospitals. A low performance level in state hospitals or a bed-block phenomenon is suggested by this study. Nine univariate factors associated with state hospital utilisation were entered in a logistic regression model in which five independent determinants were identified including 'do not have electricity', 'head of the family are not their children', 'do not have own savings', 'live in rural area', and 'have heard about free health care programme'. The Ministry of Public Health and other organisations which are concerned with the well being of the elderly should put more effort into advertising the free health care programme for the Thai elderly.

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ปัจจัยของการเลือกใช้บริการโรงพยาบาลรัฐของผู้สูงอายุไทยที่มีการเจ็บป่วยและต้องเข้ารับการรักษาในโรงพยาบาล

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จากผู้สูงอายุจำนวน 4,480 คนในการสำรวจ National Survey of the Welfare of the Elderly in Thailand (SWET) มีผู้สูงอายุจำนวน 669 คน (ร้อยละ 14.9) รายงานว่าได้เข้ารับการรักษาในโรงพยาบาลในระยะหนึ่งปีที่ผ่านมา ข้อมูลของผู้สูงอายุทั้ง 669 คนได้รับการศึกษาเพื่อวิเคราะห์หาปัจจัยของการเข้ารับการรักษาในโรงพยาบาลรัฐ พบว่าผู้สูงอายุที่เข้ารับการรักษาในโรงพยาบาลหนึ่งครั้งคิดเป็นร้อยละ 78 ของผู้สูงอายุทั้งหมด ค่าเฉลี่ย (ส่วนเบี่ยงเบนมาตรฐาน) ของระยะเวลาที่เข้ารับการรักษาในโรงพยาบาลเท่ากับ 11.9 (20.1) วัน เฉพาะการเข้ารับการรักษาในโรงพยาบาลครั้งสุดท้ายพบว่า ผู้สูงอายุ 532 คน (ร้อยละ 79.5) เข้ารับการรักษาในโรงพยาบาลรัฐ ผู้สูงอายุ 119 คน (ร้อยละ 17.8) เข้ารับการรักษาในโรงพยาบาลเอกชน มีผู้สูงอายุเพียง 18 คน (ร้อยละ 2.3) ที่เข้ารับการรักษาในโรงพยาบาลทั้งสองประเภท เมื่อพิจารณาสาเหตุหรืออาการสำคัญของการเจ็บป่วยของการเข้ารับการรักษาในโรงพยาบาลครั้งสุดท้ายไม่ปรากฏความแตกต่างระหว่างผู้สูงอายุที่เลือกเข้ารับการรักษาในโรงพยาบาลรัฐกับในโรงพยาบาลเอกชน จากการวิเคราะห์ปัจจัยของการเข้าใช้บริการโรงพยาบาลรัฐพบปัจจัยสำคัญจำนวน 9 ปัจจัย และเมื่อใช้การวิเคราะห์โดย logistric regression พบปัจจัยอิสระจำนวน 5 ปัจจัยได้แก่ "ไม่มีไฟฟ้าใช้ในครัวเรือน" "หัวหน้าครอบครัวไม่ใช่บุตร" "ไม่มีเงินออมเป็นของตนเอง" "อาศัยในเขตชนบท" และ "เคยรับทราบเกี่ยวกับ-สวัสดิการรักษาพยาบาลโดยไม่คิดมูลค่าแก่ผู้สูงอายุไทยของกระทรวงสาธารณสุข" ผลการศึกษานี้แสดงให้เห็นว่ากระทรวงสาธารณสุขควรเพิ่มทรัพยากรในการประชา-สัมพันธ์-สวัสดิการรักษาพยาบาลโดยไม่คิดมูลค่าแก่ผู้สูงอายุไทย

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