

TREATMENT SEEKING BEHAVIOR OF DHF PATIENTS IN THAILAND

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Abstract. A study on treatment seeking behavior of dengue hemorrhagic fever (DHF) patients was made from 184 clinically diagnosed patients in three hospitals: Children's Hospital, Bangkok; Suphan Buri Provincial Hospital, Suphan Buri Province and Don Chedi Community Hospital in the district of Don Chedi, Suphan Buri Province. The information was collected by interviewing the patients' caretakers while they were attending the patients in the hospitals, using a series of closed- and open-ended questions.

Based on the first place of treatment, five patterns of treatment seeking behavior were identified, the most common one was using the clinic as the first step. Different patterns of treatment seeking behavior had the impact on the duration of illness, the number of steps in seeking treatment and the direct patient costs. The socio-demographic characteristics of the patient's caretaker that influenced the decision making to take treatment alternatives included the level of education, occupation, residential area and lay symptom assessment. In addition, economic factors: the capability to reimburse the cost of treatment, the family income and the financial sources, were also important for caretakers to take into consideration when making treatment choices.

INTRODUCTION

Dengue/dengue hemorrhagic fever (DHF) has become the most important mosquito-borne virus disease in a number of countries. It is reported that approximately 2,000 million people from over 100 countries are at risk and with approximately 20 million cases per year. In Southeast Asia, DHF is one of the leading causes of hospitalization and death in the children (Lederberg *et al*, 1992; WHO, 1996). The evidence showed that DHF not only has epidemiologic impact, but also has consequences for the social and economic welfare of the people. It is believed that the variation in the impact of the disease between and within communities is related to the health seeking behavior of the people (Evans *et al*, 1994).

The purpose of this study was to investigate the patterns of treatment seeking behavior of DHF patients, the impact of different treatment seeking behavior and factors that influence the decision to use a particular pattern. Various studies have developed models to explain health seeking processes (Parson, 1951; Freidson, 1960; Suchman, 1965; Andersen, 1968; Frankenberg, 1968; Fabrega, 1973; Segall, 1976; Kroeger, 1983). Since each model has both merits and limitations in explaining the treatment seeking process in difference medical

systems (Igun, 1979), this study did not depend on one particular model, but tried to capture the dynamics of treatment seeking process of DHF patients.

MATERIALS AND METHODS

Data were collected at three hospitals (see below) between July and August 1994. The reason for gathering information from the patients in the hospitals was that most DHF patients need hospitalization and the study aimed to include only confirmed DHF patients. All patients were clinically diagnosed as DHF using WHO criteria and were admitted as in-patients in the three hospitals in the study. Since almost all patients in the study were children, respondents were their parents or caretakers who accompanied them to the hospital. During the hospitalization period, an interview was conducted using a series of closed- and open-ended questions developed for this study. The interview sought information on socio-demographic background of the patients and their caretakers, the current illness episode, the treatment seeking process for the current illness and the reason for the decision to seek such treatment.

In Thailand, government hospitals are classified into three levels: regional, provincial and community hospitals. Regional hospitals are in Bangkok and large cities, have more than 500 beds per hospital and have a wide range of medical departments and specialty units. These regional hospitals serve as training centers for health personnel and as tertiary referral centers. At the provincial level, each province has a provincial hospital of 100 or over beds which serves as a secondary referral center. Community hospitals with 10-60 beds are located at the district level.

To cover all three levels of hospitals, the study selected Children's Hospital in Bangkok, Suphan Buri Provincial Hospital in Suphan Buri Province and Don Chedi Community Hospital in the District of Don Chedi, Suphan Buri Province as the study sites. The reason in covering all levels of hospital was to compare if there was any variation in the pattern of treatment seeking behavior at the different levels. In addition, the last two hospitals were selected because they are located in a high endemic area of DHF.

RESULTS

There were 184 patients: 72 cases from Children's Hospital, 99 cases from Suphan Buri Provincial Hospital and 13 cases from Don Chedi Community Hospital. Since the cases from Don Chedi Hospital were relatively small in number and were essentially similar to those from Suphan Buri Provincial Hospital, these two groups were combined and labeled as Suphan Buri patients.

There was not much difference in gender ratio between the patients in Bangkok and Suphan Buri. The patients' ages ranged from 6 months to 14 years, except for 3 older patients. The age specific infection rate was highest in the group 5-9 years old, but there were more patients aged below 4 years old in Bangkok than in Suphan Buri. The infection was predominant among children in primary school, followed by kindergarten children in both areas. Approximately 97% of patients in Bangkok lived in the urban area while only 23.2% in Suphan Buri lived in the urban area. There were 67% of the patients in Suphan Buri whose family income was less than the median (7,000 Baht/month) whereas only 30.6% of those in Bangkok were in this category (Table 1).

The treatment seeking behavior of DHF patients

Among 184 patients, 84.8% had first complaints of fever with or without vomiting, headache, abdominal pain and weakness; only 1.6% had fever with hemorrhagic phenomena. With these primary symptoms, only 9.8% had been lay-assessed as dengue infection; the majority (90.2%) assessed the illness as common cold or influenza. Immediate treatment after the onset of illness was sought by 39.7% of the patients, while 51.6% waited for one day before seeking treatment (Table 2).

The periods of seeking treatment can be separated into pre-hospitalization and hospitalization. In the first period, the patients sought treatment from clinics, drugstores, folk healers, health centers as well as the outpatient departments of the hospitals. The second period was when they were hospitalized. Most patients would use one or two steps before hospitalization. The average time a patient spent before hospitalization was 3.8 days. The patients in Bangkok spent more time during pre-hospitalization than those in Suphan Buri. It took an average of 4.1 days for the patients to be hospitalized. On the other hand, the hospitalization period was longer among the patients in Suphan Buri (4.7 days) than those in Bangkok (3.2 days). In all, the total sick period was averaged 7.9 days. The patients in Suphan Buri had longer total sick period than those in Bangkok (Table 2).

Patterns of treatment seeking behavior

Due to the pluralistic medical system in Thai society, it is common that patients will switch from one alternative treatment to another and that very often several alternatives are used simultaneously during an illness episode until they are satisfied or cured (Hanks and Hanks, 1955; Cunningham, 1970; Riley and Sermsri, 1974; Riley, 1977). In this study, this phenomenon was seen.

Based on the first treatment alternative of 184 DHF study patients, five patterns of treatment seeking behavior could be observed. However, this does not mean that the patients in each pattern behaved exactly the same, only that their main behaviors were alike. These patterns are: pattern I: hospital (Fig 1); pattern II: clinics (Fig 2); pattern III: health center (Fig 3); pattern IV: self treatment (Fig 4); pattern V: folk healer (Fig 5). The most common

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Table 1

Socio-demographic characteristics of DHF patients in Bangkok Children's Hospital and Suphan Buri and Don Chedi Hospitals.

	Total (N = 184) %	Bangkok (N = 72) %	Suphan Buri (N = 112) %
Gender			
Male	52.2	48.6	54.5
Female	47.8	51.4	45.5
Total	100.0	100.0	100.0
Age (Years)			
0-4	16.3	23.6	11.6
5-9	47.8	44.5	50.0
10-14	34.2	31.9	35.7
> 14	1.6	-	2.7
Total	100.0	100.0	100.0
Education			
Have not attended school	10.9	15.3	8.0
Kindergarten	23.3	18.0	26.8
Primary school	54.9	54.2	55.4
Secondary school	10.9	12.5	9.8
Total	100.0	100.0	100.0
Residential area			
Urban	52.2	97.2	23.2
Rural	47.8	2.8	76.8
Total	100.0	100.0	100.0
Family income (Median = 7,000 Baht/month) (25 Baht = 1 US\$)			
Median and below	52.7	30.6	67.0
Above	47.3	69.4	33.0
Total	100.0	100.0	100.0

pattern the patients used was pattern II, followed by pattern IV. No significant difference in treatment seeking patterns was apparent between patients in Bangkok and those in Suphan Buri, except that none of the patients in Bangkok sought treatment from folk healers.

It is interesting to note that while patients might start seeking treatment with different alternatives, most tended to use hospitals in the subsequent steps. Most of those who started with a hospital would not use other services, an exception was 3 patients who visited the clinics at their second step of treatment seeking process and then returned to the hospital service.

The impact of different treatment seeking behavior

Using different patterns of treatment seeking behavior resulted in differences in the duration of illness, the number of steps in seeking treatment and the direct patient costs. The patients who had selected the hospitals and medical clinics as their first treatment alternative tended to spend less time in treatment and more than half of them spent only two steps in seeking treatment, whereas the majority of patients in other patterns spent more than two steps before being cured (Tables 3, 4). In terms of expenditure, the highest direct patient cost was seen in Pattern II, 1,751.30 Baht (US\$ 70.1) and the

Table 2

The treatment seeking behavior of DHF patients in Bangkok and Suphan Buri.

	Total (N = 184) %	Bangkok (N = 72) %	Suphan Buri (N = 112) %
Primary symptom			
Fever + vomit + headache + stomachache + weak	84.8	88.9	82.1
Fever + vomit + headache + stomachache + hemorrhagic phenomena + shock	1.6	4.2	-
Fever + running nose	13.6	6.9	17.9
Total	100.0	100.0	100.0
Lay symptom assessment			
DHF	9.8	9.7	9.8
Others	90.2	90.3	90.2
Total	100.0	100.0	100.0
Start first treatment			
Immediately	39.7	48.6	33.9
1 day later	51.6	44.4	56.3
1+ days later	8.7	7.0	9.8
Total	100.0	100.0	100.0
Steps of treatment before cured			
2	39.1	47.2	33.9
3	40.8	34.7	43.7
4	14.7	11.1	17.0
5	5.4	6.9	4.5
Total	100.0	100.0	100.0
Duration of illness (average days/patient)			
	Day	Day	Day
Pre-hospitalization	3.8	4.1	3.5
Hospitalization	4.1	3.2	4.7
Total	7.9	7.3	8.2

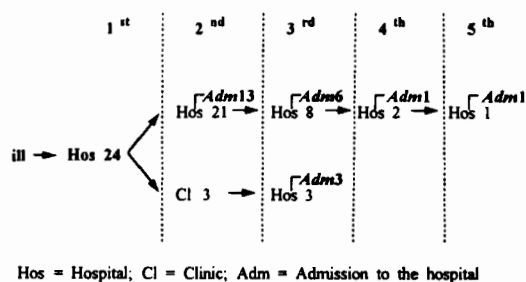


Fig 1—Pattern I (Hospital).

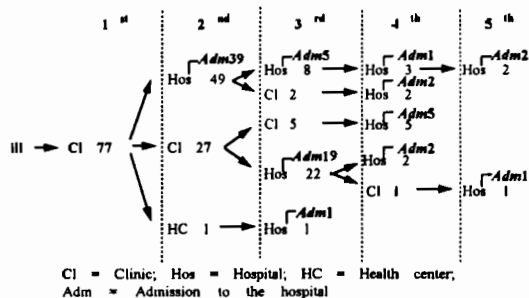


Fig 2—Pattern II (Clinic).

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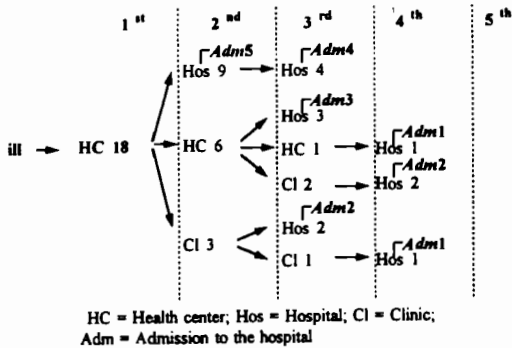


Fig 3—Pattern III (Health center).

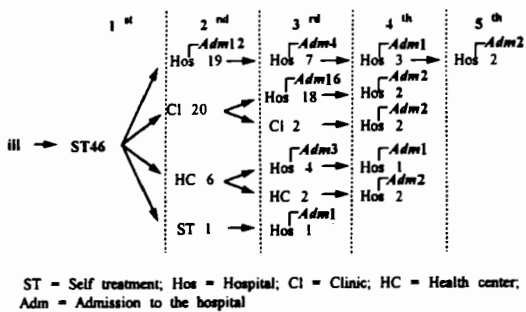


Fig 4—Pattern IV (Self treatment).

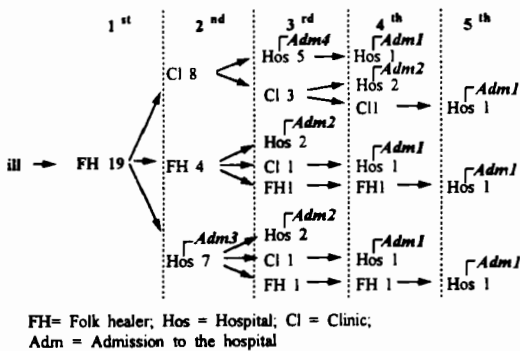


Fig 5—Pattern V (Folk healer).

lowest was seen in pattern IV, 1,417.85 Baht (US\$ 56.7) (Table 3).

Factors that influence treatment seeking behavior

Seven factors significantly guided the selection

of treatment seeking patterns. Most of these factors were related to the patients' parents or caretakers because they were the ones who selected which treatment they would take the patients to have. Generally, two groups of factors played a role in selection of treatment alternatives. The first group was the socio-demographic characteristics of the caretakers. Caretakers' education was significantly related to the treatment alternative used. Caretakers who had a higher education would take the sick child to the hospital, but neglected the services of the health center and folk healers. Place of residence also affected the treatment seeking behavior. Those who were in the urban area would use hospital and practice self medication more than those in the rural area, while those in the rural area had a tendency to use the services of health centers and folk healers more than those in the urban area. More patients whose caretakers' occupations were non-labor would start seeking treatment at hospitals and clinics, while more of those in the labor group started with health center and folk healer. Lay symptom assessment was also an important factor. The patients who were assessed as having DHF selected hospitals and clinics as their first choice of treatment, but none pursued self medication.

The second group of factors was related to the economic issues. Patients whose family incomes were at the median level or lower, sought treatment at health centers or from folk healers more than those whose family incomes were above the median. More of those who had savings preferred the clinics and self treatment as their first choice, while those who had to borrow selected folk healers and health centers.

In Thailand, some people's cost of health care is subsidized totally or partially by the government or other agencies if they attend hospitals or health centers. It was found that if the treatment costs were exempted or totally subsidized, the hospital was the most preferable. Where the treatment cost was partially subsidized, clinic and self treatment were more common choices.

DISCUSSION

The benefit of knowing the illness behavior is to understand how and why the patients react when a

Table 3

Comparison of duration of illness and the patient costs with the patterns of treatment seeking behavior.

	Total (N = 184)	I: Hospital (N = 24)	II: Clinic (N = 77)	III: Health center (N = 18)	IV: Self treatment (N = 46)	V: Folk healer (N = 19)
Duration of illness (average/patient)						
Prehospitalization	3.8	3.6	3.7	3.9	3.9	3.7
Hospitalization	4.1	3.7	4.1	4.1	4.2	4.3
Total sick day	7.9	7.3	7.8	8.0	8.1	8.0
Direct patient costs						
Average/case	1,589.29	1,437.11	1,751.30	1,557.75	1,417.85	1,492.32
Range	418-6,875	421-2,964	433-6,875	418-3,027	500-2,839	520-3,270

Table 4

The relationships between steps of treatment and patterns of treatment seeking behavior.

Steps of treatment	I: Hospital (N = 24) %	II: Clinic (N = 77) %	III: Health center (N = 18) %	IV: Self treatment (N = 46) %	V: Folk healer (N = 19) %	p
2	54.2	50.6	27.8	26.1	15.8	0.0107
3	37.5	32.5	44.4	54.3	42.1	
4-5	8.3	16.9	27.8	19.6	42.1	

disease is encountered. In DHF as well as other pediatric diseases, the health seeking behavior is naturally dominated by the parents who select the methods and places of treatment according to their own knowledge and perception.

This study examined the nature of treatment seeking behaviors of the parents of DHF patients admitted in government hospitals. Multiple alternatives were used by many families with rapid switching from one to another which occurred frequently both in Bangkok and the province. In some cases, this vacillation occurred twice a day. Behavior as such seemed to be common since it was found in other studies in Thailand and elsewhere (Kunstadter, 1978; Cosminsky and Scrimshaw, 1980; Weisberg, 1982; Hunte and Sultana, 1992).

Previous studies of treatment seeking behavior

in Thailand reported that self treatment was the most common alternative the people used, especially for the first step of treatment (Riley and Sermisri, 1974; Hongvivatana and Hoontrakul, 1982; Fungladda *et al*, 1991; Okanurak *et al*, 1995). In this study, however, the clinic was the most common alternative. This could be because the DHF patients were children and many of the caretakers would not dare to take a risk in experimenting with self treatment.

As seen in most previous reports, treatment seeking behavior usually ended up at the point where treatment alternatives had been identified. This present study extended this type of investigation to cover the impact of the different alternatives. Some outstanding effects were identified: the duration of illness, the step of treatment seeking and the patient's direct costs. Among the five

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Table 5
Factors influencing the treatment seeking behavior.

Influencing factor	I: Hospital %	II: Clinic %	III: Health center %	IV: Self treatment %	V: Folk healer %	p
Caretakers' education						
Compulsory (N = 145)	11.0	42.8	12.4	21.4	12.4	0.0088
Higher (N = 39)	20.5	38.5	0	38.5	2.5	
Residential area						
Rural (N = 88)	8.0	39.8	14.8	17.0	20.4	0.0000
Urban (N = 96)	17.7	43.8	5.2	32.3	1.0	
Occupation						
Labor (N = 119)	9.2	38.7	13.4	23.5	15.2	0.002
Non-labor (N = 65)	20.0	47.7	3.1	27.7	1.5	
Lay symptom assessment						
As DHF (N = 18)	44.4	44.4	5.6	0	5.6	0.003
As other (N = 166)	9.6	41.6	10.2	27.7	10.9	
Family income						
Median & below (N = 97)	9.3	38.1	14.5	20.6	17.5	0.0007
Above (N = 87)	17.2	46.0	4.6	29.9	2.3	
Financial source						
Borrowing (N = 47)	6.4	36.2	19.1	17.0	21.3	0.0017
Saving (N = 137)	15.3	43.8	6.6	27.7	6.6	
Reimbursement						
No (N = 72)	13.9	48.6	8.3	26.4	2.8	0.0000
Partial (N = 87)	3.5	42.5	10.4	24.1	19.5	
Yes (N = 25)	44.0	20.0	12.0	24.0	0	

patterns, that of selecting a hospital as the first step of treatment made the patient spend less time, to take fewer steps of treatment and to be burdened with less direct costs. In addition to the direct patient costs, it was interesting to note that reimbursement of the treatment cost from the government or employers was a major factor that influenced the decision making of the parents. In fact, the Thai National Health Program has provided free medical care for children under 12 years. However, this program seldom works because of the short fall of the budget and it is very common that the hospitals always try to avoid giving free medical service.

From the medical point of view, the appropriate way for treatment of DHF or suspected DHF patients is that they should be seen by medical professionals as early as possible. Taking this into

consideration, about 65% of 184 patients in this study had taken the appropriate choice of treatment by using clinics, hospitals or health centers as their first treatment alternative. Nevertheless, another 35% still wondered around the inappropriate routes of treatment. Self medication and using folk healers were common behaviors. If these people could be convinced to change their decision process, it would not only save their time but would also give the patients greater chance of complete recovery.

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