

An Assessment of the Workloads of Rural Health Centres in Khon Kaen, Northeast Thailand

Lertchai CHARERNTANYARAK*, Dr.rer.nat.

Nigel LEWIN**, M.T.H.

Mary-Jean MACKIE**, M.T.H.

David URASSA**, M.T.H.

Aroon JIRAWATKUL***, M.Sc

Sastri SAOWAKONTA****, Ph.D.

* Department of Epidemiology

Faculty of Public Health,

Khon Kaen University, Thailand.

** Tropical Health Programme, University of

Queensland, Brisbane, Australia.

*** Department of Biostatistic & Demography,

Faculty of Public Health Khon Kaen

University, Khon Kaen Thailand.

**** Faculty of Medicine, Khon Kaen

University, Khon Kaen Thailand.

การศึกษาปริมาณงานสถานอนามัยตำบล

เลิศชัย เจริญชัยรักษ์*, Nigel LEWIN**, Mary-Jean MACKIE**,
David URASSA**, อรุณ จิรวัดน์กุล***, ศาสตรี เสาวคนธ์****

การศึกษาเชิงพรรณนาภาคตัดขวางเพื่อประเมินปริมาณงานและปัจจัยที่เกี่ยวข้องของเจ้าหน้าที่สถานอนามัยตำบล อำเภอหนองเรือ จังหวัดขอนแก่น ทำการศึกษาในช่วงเดือนมกราคม-เมษายน 2534 ด้วยวิธีการศึกษาจากรายงานประจำปี การสัมภาษณ์ และสนทนากลุ่ม

ผลจากการศึกษาพบว่ามีการะงานด้านการส่งเสริมสุขภาพ 64.1% การบริหารจัดการ 25.6% การรักษาพยาบาล 7.3% และการป้องกันควบคุม 3.1% ซึ่งใกล้เคียงตามเป้าหมายของกระทรวงสาธารณสุขที่เสนอให้ใช้เวลา 75% ในงานส่งเสริมสุขภาพ 25% ในงานบริหารจัดการ และการรักษาพยาบาล

จากจำนวน 13 สถานอนามัยตำบลที่ศึกษา พบว่ามี 4 สถานอนามัยที่ปฏิบัติงานได้ตามเป้าหมายและเมื่อเปรียบเทียบกับภาระงานที่ปฏิบัติงานจริง พบว่ามี 2 สถานอนามัยตำบลที่มีเจ้าหน้าที่ไม่เพียงพอ มี 4 สถานอนามัยตำบลที่มีเจ้าหน้าที่มากเกินไป

ปัจจัยทางด้านระยะทาง, ค่าบริการ ไม่มีผลต่อการใช้บริการของสถานอนามัยตำบล และการใช้ยาสมุนไพรโบราณ คลินิกเอกชน โรงพยาบาลอำเภอ ไม่มีผลโดยตรงต่อภาระงานของสถานอนามัยตำบล แต่มีผลในกรณีการเจ็บ

ป่วยที่รุนแรง ช่วงเวลาที่เกิด และความเข้าใจ ความเชื่อถือยอมรับของการรักษา
ที่ดีที่สุดเท่านั้น

นอกจากนี้ยังพบว่ามีความแตกต่างทางสถิติอย่างมีนัยสำคัญเมื่อ
เปรียบเทียบระหว่างภาระงานเป้าหมายและภาระงานที่ปฏิบัติจริง ถ้าจะให้ได้
ภาระงานตามเป้าหมายจะต้องเพิ่มจำนวนบุคลากรให้ครบ 3 คนในแต่ละสถานี
อนามัยตำบล

A cross sectional descriptive study to assess the health centre staff workload and associated factors in Nong Rua district, Khon Kaen Province, was researched from January to April 1991.

Health centre yearly records, staff, patient and community interviews, and focus groups were the tools used to determine the health centre workload and community utilisation.

The results showed that in the district, health centres had a higher average promotive workload (64.1%) in relation to other activities followed by administrative (25.6%), curative (7.2%) and lastly preventive workload (3.1%).

These results are comparable to the Ministry of Public Health's guidelines regarding the distribution of services, which recommend 75% of time be spent in promotive and preventive activities with 25% for administrative and curative services. In this district 4 of the 13 health centres studied performed above their expected workload with 9 below. In relation to actual workload, 2 of the health centres were under staffed and 4 overstaffed.

Distance from the health centre to the district hospital, and the cost of service, did not seemed to affect health centre utilisation and the existence of traditional healers, private clinics and the district hospital did not seemed

to affect directly health centre workload. Although patients seemed to utilise the other health services in conjunction with the health centres. The choice of whether to use a health centre appears to be determined by perceived seriousness of the illness, the time the illness occurs, and the person's perception as to who will give the best treatment.

The finding showed a difference between the expected and actual work performed but although statistically significant in reality. If expected targets were to be reached there would need to be an overall increase of three staff in the district.

INTRODUCTION :-

The workload of the health centre staff is a balance between the number of staff and the number of activities they perform. what affects that balance is the utilisation of the health services by the community. In the review of work related theories both early and contemporary theories were examined, from Greek philosophies to the more recent works of McDougall (1968)⁽¹⁾. The methods of measuring and studying work were assessed in different industries and occupations, included time study, activity sampling, predetermined time and motion studies, and more recent analytical estimates and self reporting.

Concomitant with work theories, measurements and studies are factors associated with work. These include working and environmental conditions, motivation and job satisfaction and layout and design of the working environment. In the health services other external factors will directly effect the workload of the health clinic, particularly staffing, and distribution of the workforce. Hornby et al (1980)⁽²⁾ describe four methods of estimating health workforce requirements, the simplest and possibly the most widely used is that of manpower/population ratio, but health demands and needs along with service targets need to be considered.

Implicit within the factors associated with work is the utilisation of the service by the community. As Yesudian (1988)⁽³⁾ points out these take into consideration demographic, socio-economic and cultural factors. Amonoo-Lartson et al (1984)⁽⁴⁾, Rauyajin (1981)⁽⁵⁾, Golomb (1985)⁽⁶⁾ and Manderson (1989)⁽⁷⁾ all discuss these issues from their varied experiences in different geographic backgrounds. Finally the utilisation of services will be influenced by the distance in which the community has to travel in order to obtain the service they are seeking. King (1966)⁽⁸⁾ emphasises this point in a study he conducted in Uganda which showed that "the average number of outpatient attendances per person per year about every 2 miles (3.2 km.) from the hospital and the dispensary"

METHODOLOGY :

Study Design.

This was a cross-sectional, descriptive study to assess the health centre activities and staff workload, in the rural health centres of Nong-Rua district, Khon Kaen province. The information was gathered between January and April 1991, using triangulation to validate qualitative, quantitative and observational data.

All the health centres in Nong Rua district were sampled to give representative information throughout the district. The previous

year's records in all 13 health centres were studied from the period October 1989 to September 1990, to measure the magnitude of rural health centre workload. Only those health staff present on the day of data collection were interviewed to determine their attitudes towards work, management of time, and planning of activities. All patients or caregivers who were present were interviewed to gain their perception of the services offered by the health centre and staff. Every member of staff who attended the monthly meeting at the District Health Office, was asked to complete a self administered timing questionnaire. In order to protect the identity of the study populations, numbers or pseudonyms known only to the researchers were used.

The selection for observations of two health centres, Yang-Yai and None-Maung, was based on our preliminary analysis of the previous year's outpatient's records. To ensure that similar services were observed, three representative activities were chosen in each health centre, curative (outpatients), preventive (immunisations) and promotive (antenatal). The observations were to look at how the staff and patients interacted, which included : patient waiting time, staff/patient contact time and the number of patients attending specialised services.

Semi structured Interviews

The semi structured interviews compared the responses of both direct users (patients) and non-users (villagers) of health facilities in Nong Rua district. A questionnaire and clinical vignettes were used to gather the quantitative and qualitative data.

Focus Groups

Focus groups were used as a research method for obtaining information almost impossible to gain by any other method and to produce a "permissive environment" where members are able to express feelings, fears

and thoughts without judgment (Krueger, 1988)⁽⁹⁾. A question frame was built around insights gained from previous staff interviews.

RESULTS :

The work activity in this study is defined as a unit of measure of the frequency of receiving a certain type of service from the health centre staff. All the data collected concerning activities were recorded by health centre staff in terms of estimated goal (expected activities) in that year and what was actually performed each month (actual activities). In all 13 health centres we divided this information up into four categories as follows based on information from the Health Planning Division (1990)⁽¹⁰⁾.

Categories of Activities

(1) Curative Activities :

Outpatient activities

(2) Preventive Activities :

Immunisation; Dengue control, TB control; Encephalitis; Parasitic disease control; STD control; Animal vaccination; Leprosy control;

(3) Promotive Activities :

MCH (ANC); school health programme; Community development, Treatment of low income; Nutrition programme groups; Dental programme; Insurance card programme; Environmental sanitation; Health education.

(4) Administrative Activities :

Monthly reports; Cleaning of the health centre building and equipment; Meetings with the District Health Officer.

Findings :

In all 13 health centres in Nong Rua district, promotive activities were estimated (expected) to take 51.5% of the total activities, followed by curative 27.7%, preventive 17.4% and lastly administrative 3.4%. In actual performance, promotive activities were also performed most often (66.7%), followed by curative activities (16.7%), preventive activities (12.6%), and administrative activities (4.1%) (Fig.1).

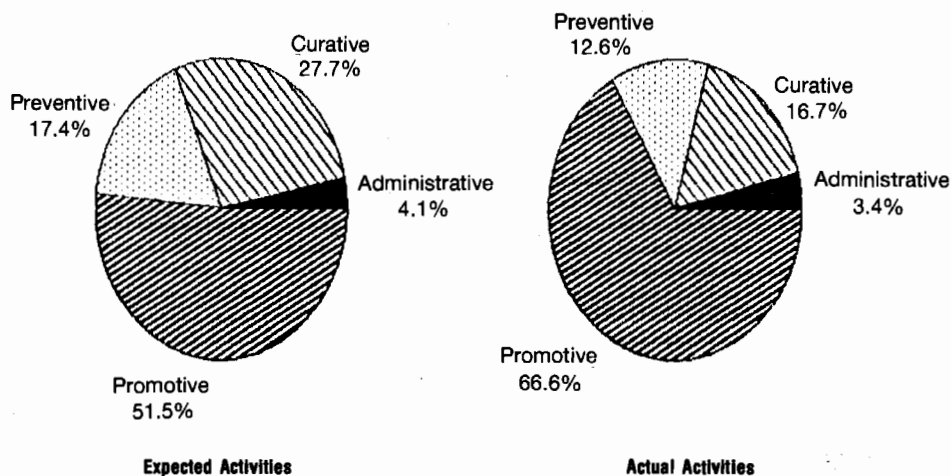


Figure 1 Expected and Actual Activities in 13 Health Centres Nong Rua District (Oct. 1989-Sept.1990)

Most Preferred and Most Difficult Activities

Although promotive activities were the most frequently performed activities, they were also considered by the staff to be the most difficult, with curative ranking second. This was further emphasised in the focus groups where nutrition was said to be the most difficult promotive activity while immunisation and family were the most satisfying.

The primary motivating factor for the staff came from the villagers appreciation of their work, cooperation and their trust, which enable their prommotive programmes to succeed.

When comparing the 13 health centres in Nong Rua District the total expected activities were estimated to be more than total actual activities performed in 9 of 13 health centres (though one health centre 5003, only had 9 months of the actual activities recorded). Four health centres achieved their total expected goals, while overall there was a statistically significant difference between expected activities estimated, and actual activities performed (Chi-square = 649, p-value<0.001).

Seasonal Variation :-

Total activities had 2 peaks in the year, January and July. However, responses from the health centre staff indicated two peaks in April and September (the peak in September corresponds with that of curative activities).

Time Spent as Perceived by Staff

When the staff were interviewed in every health centre 40.7% perceived that the most time was spent on promotive activities, 25.9% stated curative and 18.5% on administrative with 14.8% in preventive activities.

Workload

Workload is defined as the total time (days) taken to perform a particular activity by a single member of staff. This was calculated by multiplying standard timings (obtained from

staff perception) by the number of specific activities expected or actually performed. In all the 13 health centres the expected promotive workloads were estimated higher in relation to all other activities, followed by administrative, curative and preventive workloads. When considering actual performance, promotive workload was highest (64.1%) in relation to other activities followed by administrative (25.6%), curative (7.3%) and preventive activities (3.1%).

Comparison between Actual & Expected and Standard Workload

In this study standard workload is the total available working time (days) in one year per staff member (237 days). This was compared to expected and actual workload and the comparison revealed that in the 13 health centres nine (69.2%) out of 13 health centres estimated their expected workload to be above the standard workload while four of them estimated their workload to be below this standard. Four of the 13 (30.8%) health centres performed above their expected workload with 9 (69.2%) below, but of these nine, seven (77.8%) performed above their standard workload.

Staff Need

In assessing the expected staffing levels for the district, based on the expected workload, the total staff requirements for the district should be 36, however the present number is 33. From expected workload, 38.5% of health centres were under staffed, 38.5% correctly staffed, and 23.1% overstaffed. According to actual workload, 15.4% of the health centres were under staffed, 53.8% correctly staffed and 30.8% overstaffed. Therefore not only would more staff need to be employed but also some redistribution of personnel would be necessary in order to correct the imbalances and so reach the expected workload. Both focus groups agreed that extra staff were needed (Fig 2,3).

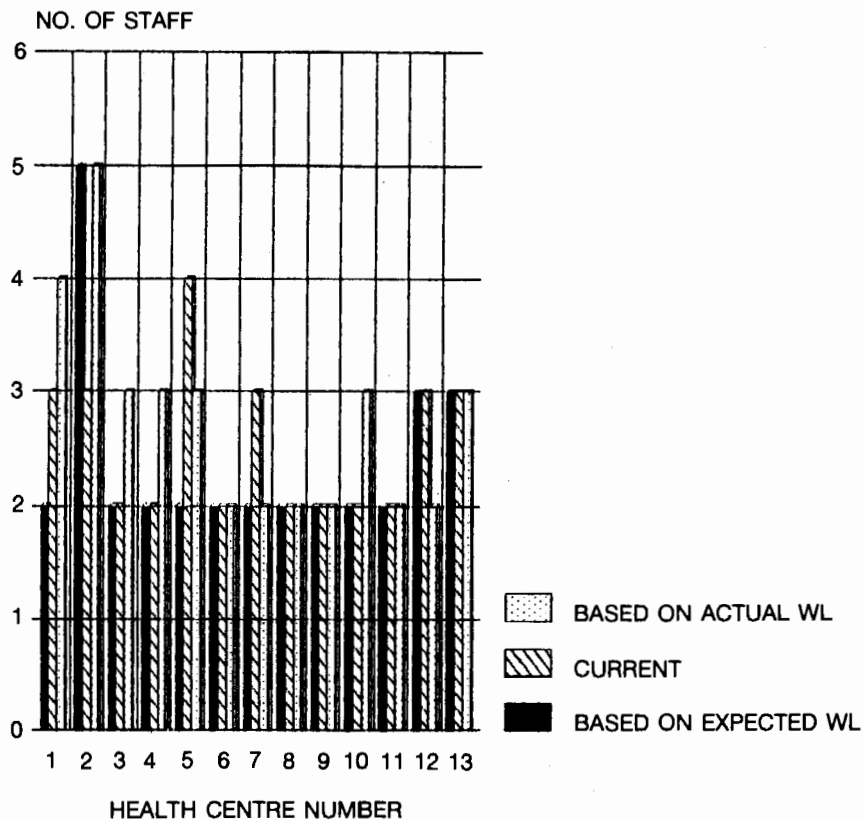


Figure 2 Staff Need According to Actual & Expected Workload

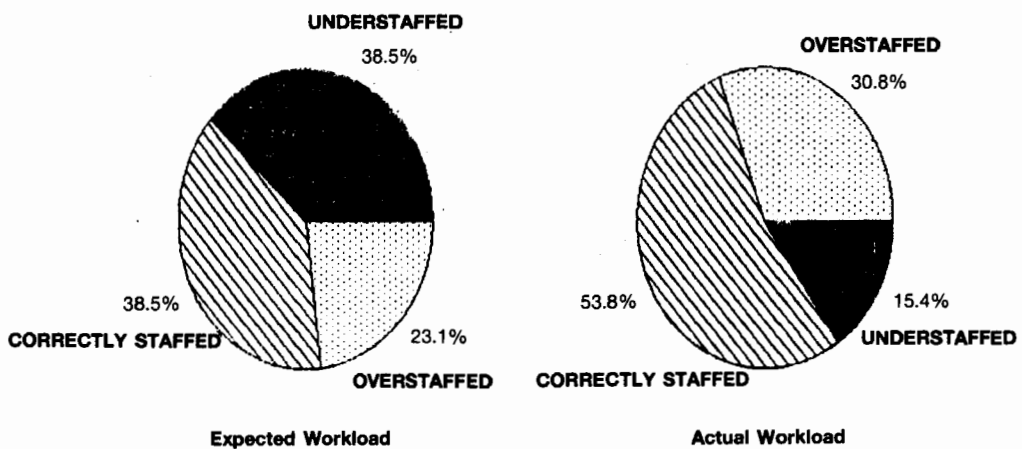


Figure 3 Staff Levels Accordings to Expected and Actual Workload.

Division of Labour

This issue was discussed in two focus groups one comprising senior health centre workers and another with juniors. Most members of both groups reached a consensus that the work is more or less shared equally between male and female workers although there is differentiation in terms of women doing antenatal and post natal care, and men concentrating on sanitation and village visiting.

Factors Influencing Utilisation

The distance of the health centres to the district hospital did not appear to have any effect on out-patient utilisation.

Accessibility and Cost

When assessing accessibility to the health centre in terms of travel time we found that, 88% of patients interviewed lived within 30 minutes travel of the health centre using different means of transport. The direct cost of service to the patient includes both travel costs and payment for treatment. Only 2% had to pay directly for their travel and 40% paid for their treatment. Of those who paid for medication, 56% thought it was cheap and 35% thought it was average. This indicates that the cost of travel or treatment was not a major consideration to most of our sample population when deciding to use a health centre.

Patient Satisfaction

This was measured in terms of waiting time, time spent with staff to explain their problems, the single most important reason for attending a health centre and whether they liked the treatment they received at the health centre; 82% had waited less than 30 minutes, 96% spent less than 15 minutes with staff, 98% liked the treatment they received. The reasons

for attending the clinic were because it was nearest (67%) while 30% attended because of the good service that the health centre offered them.

Use of Traditional Healers and Private Clinics

All the staff interviewed stated that the presence of traditional healers did not influence the attendance patterns of the clinic, although 59% (16) thought that the patients used traditional healers for such illnesses as common fever, joint, pains, headaches, stomachaches, 19% of the patients interviewed at the health centre also used traditional healers for a range of complaints similar to the above. In the patient interviews 49% used private clinics especially at weekends, during the night and for what they termed serious illnesses which required the prompt service of a doctor.

Community Perception

In the two villages studied (Ban None-Hai and Ban Don-Long), we found that in Ban None-Hai patients used the health centre for a variety of ailments, abdominal pain, fever, colds and immunisations. The distance to the rural health centre was 3 kilometers and cost 2 baht by motor rickshaw (tuk tuk). The majority (65%) estimated it would take between 15 to 30 minutes to reach the health centre by tuk tuk or motorcycle. At Ban Don Long, the distance to the nearest health centre was 5 kilometers at a cost of 2 baht by bus, but the bus service ran infrequently and the bus stop was beyond the next village 1.5 kilometers away. The time estimated to reach the health centre was more than 30 minutes.

Migration

The focus group and discussions with the staff revealed that seasonal migration may account for the difference between the expected

targets and actual performance. This was expressed by one participant who said "in Nampong district where the land is irrigated, E.P.I. is 100%. We would like to reach 100% too but we cannot as the people have to migrate to another place for work in the dry season. If they were here we could reach 100%."

DISCUSSIONS

Health Centre Activities : (Expected & Actual)

The study showed that different expectations of curative, preventive, promotive and administrative activities operate in all 13 health centres though they all use the same guidelines for estimating yearly expectations. These are based on the average activities of the past 3 years, and a yearly updated census of newly created activities. What all health centres have in common is that the estimates of the expected promotive activities were greater in relation to the other 3 groups of activities. These findings are consistent with the Thailand National Policy (Health Planning Division, 1990)⁽¹⁰⁾. On assessing actual performance we found that all 13 health centres performed more in promotive activities (66.7%) followed by curative, preventive and lastly administrative activities. In promotive activities 9 health centres out of 13 reached their expected targets while in preventive 3 reached their expected and only one in curative. This shows that the health centres studied reached the targets expected of them which is in contrast to findings to the similar study in Papua New Guinea where "despite the government emphasis on preventive health, 60-70% of all staff time spent on in-patient and out-patient care" (Thomason and Kolehmainen-Aitken, 1990)⁽¹¹⁾.

comparison of Expectation and Actual Activities

When comparing expected and actual activities performed we found that in 3 groups

of activities, promotive and curative, there was a statistically significant difference between expected and actual with a p-value >0.001 , showing these activities to be over or under estimated. Further comparisons showed that 12 of the 13 (92%) health centres performed more actual promotive activities than expected promotive activities. In administration 9 out of 13 (69.2%) performed more actual administrative than expected activities, whereas in preventive activities only 3 of the 13 (23%) had more actual than expected. The curative activities were the opposite of promotive activities, showing that 12 out of 13 of health centres had expected more than actual. This result suggests that there is a preference when performing certain health centre activities at the expense of others, therefore resulting in an imbalance between the expected and actual activities performed in many health centres.

Workload

The standard time taken to perform these activities enabled us to calculate the staff workload, from this we found that in all 13 health centres promotive activities were expected to account for the highest percentage of the workload (58.7%) in relation to other groups of activities followed by administrative (23.0%), curative and preventive. When measuring performance, the results showed that promotive activities took 64.1% of the total workload, administration 25.6%, curative 7.2% and preventive 3.1%. This showed that promotive activities were performed more and took more time. Administrative activities were performed less frequently but took up more time per activity thus contributing to a greater workload than the combined curative and preventive activities. As the administrative workload occupies approximately a quarter of the staff time and this is only a conservative estimate based on some of their responsibilities, then there needs to be a review of their administrative functions so that time can be allocated

to other areas. Curative and preventive activities are performed in greater numbers but take a shorter time, hence accounting for less workload than administrative activities.

The staff responses from interviews revealed that promotive activities took up the greatest amount of time (40.7%) and were the most difficult to perform (85.2%), yet 55.6% found them most satisfying. These responses stimulated the idea for one of the themes used in the focus group which was to gain further insight into promotive activities. The two focus groups were unanimous that nutrition was the most difficult promotive activity, while the greatest satisfaction was gained from immunisation and sanitation programmes.

Staff

In general staffing levels were adequate however the distribution is uneven in some centres, with 15% being under staffed and 30.8% over staffed. This suggests that the individual health centre planning is based on actual staff levels whereas activity estimates are calculated purely on past attendance figures and do not consider staffing levels. However if expected targets are to be reached then staffing levels would need to be increased by 3. This can be validated by staff reports : 50% of those interviewed felt there was a need for more staff. Perhaps the major reason why staff were unable to fulfil their targets was due to feeling overburdened by the magnitude of the work they were expected to perform. This is best illustrated by one health worker who pointed out, "We have asked for so long to have more staff. We work so hard now," and as another rather exasperatedly put it, "every year we have more and more programmes added. There is never any reduction".

Utilisation

The workload of the health centre staff

is governed by the community's utilisation of the service and in our study this appeared to be directly related to an individual's perception of the seriousness of an illness along with where they thought was the best place to receive treatment. This knowledge appeared to be based in part on health education, which was found overall to be good, and in part on past experience. No relationship was found between distance, cost and accessibility of services, however in some villages distance from the health centre may be an issue if roads are poor and transportation infrequent. From discussions with the focus groups and District Health Officer it was found that 40% of the population may migrate for part of the year. The consequences of this are that the staff are unable to provide adequate immunisation coverage for some migrating children, and malnutrition often appearing in children left in the care of grandparents. One reason why there is such a difference between the expected targets and actual performed activities may be explained if migration fluctuates as a result of poor rice yields. However the question still remains as to how can the health status of migrant women be improved ?

CONCLUSION

The study showed that in the area of promotive activities the majority of health centre reached their expected targets. The staff showed preference towards the promotive activities and the success of the programmes motivate them to perform at a high level. The health centre workload mainly comprises of promotive and administrative activities which is in line with Ministry of Public Health, leaving a very small part of the workload to be spent on curative and preventive activities. When summarizing the health staff actual performance, they achieve 90% of their expected workload. The current staffing levels in the district are adequate according to actual workload performed, but if they were to achieve the

expected workload then there would need to be an increase of three staff. The reasons for a community choosing a service appears to depends upon their perception of the seriousness of the illness and the accessibility of the service. Other factors like cost and distance appear less influential.

REFERENCES

1. McDougall W. **An Introduction to Social Psychology**, London, Methuen (1968).
2. Hornby P., P. Shipp, T. Hall and D. Ray. **Guidelines for Health Manpower Planning**, Geneva, WHO. (1980).
3. Yesudian C. **Health Services Utilisation in Urban India**, Delhi, Mittal Publications. (1988).
4. Amonoo-Lartson R., G. Ebrahim, H. Lovel and J. Ranken. **District Health Centre**, London, Macmillian Press (1984).
5. Rauyajin B. **Women and World Change** edited by N. Black and Baker Cottrell, A. Beverley Hills, Sage Publication (1981).
6. Golomb L. **An Anthropology of Curing in Multiethnic Thailand**, Urbana, University of Illinois Press (1985).
7. Manderson L. **Women and their Health in Southeast Asia Obstetric Services**. Tropical Health Programme University of Queensland, ASAA Regional Conference, Singapore, February (1989).
8. King M. **Medical Care in Developing Countries**, Oxford, Nairobi University Press. (1966).
9. Krueger R. **Focus Groups, California, Sage Publications** (1988).
10. **Health Planning Division. Health in Thailand 1990**. Ministry of Public Health, Bangkok (1990).
11. Thomason J. and R-L. Kolehmainen-Aitken "Distribution and performance of rural health workers in Papua New Guinea, **Social Science and Medicine** 27, 1990, pp 1-7.