THE UTILISATION OF SELECTED GOVERNMENT HEALTH FACILITIES IN ADDIS ABABA

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THE UTILISATION OF SELECTED GOVERNMENT HEALTH FACILITIES IN ADDIS ABABA

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A B S T R A C T

Health care delivery and utilisation studies are indispensable for the location and allocation of health resources. This is particularly true in developing countries like Ethiopia where social and economic resources are scarce that their misallocation would mean a serious set back in the smooth development of the overall socio-economic progress.

Health resources are highly concentrated in the Ethiopian capital, Addis Ababa. Thus, the majority of the population living in the rural areas have limited access to modern health institutions located in the city. Despite the high concentration of the health resources of the country in Addis Ababa, access to health care is not equitable in the city because of geographic, economic, socio-cultural and facility related factors.

This study attempts to examine the various constraints involved in health care delivery and utilisation in Addis Ababa by using the 1978 E.C. patient statistics and the results of structured interviews among 4800 patients. Fourteen government owned health institutions, including 6 hospitals, 3 health centres and 5 health stations are considered for the analysis of 3 types of patients, namely, polyclinic outpatients, sick children and antenatals.

The findings show that physical distance and size of facility were the most important factors affecting the utilisation of the various health institutions studied. Because of the wider range of services offered in the hospitals, distance decay gradients were found to be steeper for the health centres and health stations than for the hospitals. Per capita utilisation rates also declined gradually for the hospitals and precipitiously for the health centres and health stations indicating larger catchment areas for the hospitals than for the health centres and health stations. Both the interviews and the 1978 E.C. patient statistics show that the highest proportion of patients was served from Addis Ababa followed by Shewa and the other

administrative regions combined. Only 5.2% of the 4600 patients interviewed for polyclinic outpatients, sick children and antenatals was referred. The proportion of patients referred for polyclinic outpatients was the highest, 10.1%, followed by sick children, 3.4%, and antenatals, 0.9%. Higher proportion (53.0%) of patients was referred from other administrative regions than from Addis Ababa (47.0%). The policy of limiting patients to specific target areas was not strictly implemented in the health centres and health stations. Non-infectious diseases, diarrhoea and respiratory diseases were the most common illnesses reported. Duration of illness was longer for the hospital than for the health centre and health station patients. Duration of illness was also longer for rural than for Addis Ababa patients. The proportion of patients who used motorized transport was higher in the hospitals than in the health centres and health stations indicating that patients were more willing to travel further to higher than lower level health institutions by using motorized transport. As regards prior treatment, the proportion of patients who used modern medicine was higher than those who used traditional medicine indicating that modern medicine was more accessible in Addis Ababa than traditional medicine.

CHAPTER 1

INTRODUCTION

1.1 The Problems

As in most other developing countries there is a high concentration of health resources in the Ethiopian capital, Addis Ababa, with 28% of the total hospital beds, 51% of all physicians, 33% of the recurrent health budget, 60% of all pharmacies and 74% of the total pharhacists in the country in 1984 located in various parts of the city (MOH, 1986 a:278-290). An inequitable distribution of health resources of this nature has been widely criticized and raised the question of whether health planners should try to plan for the entire population or take for granted that only those living in the major urban centres will have access to health services (Gish, 1977:4). It is also believed that the rural-urban imbalance in Ethiopia contradicts the basic principles of the Primary Health Care (PHC) approach since the people are trying to reach the health institutions rather than vice versa (Hailu Meche and Mehari Woldeab, 1984,65).

In spite of the disproportionate concentration of health resources in Addis Ababa, health care utilisation studies indicate that access to health care is not equitable in this city due to geographic, economic and socio-cultural factors and lack of an efficient referral system (Kloos etal., 1987a:161-163; Hailu Meche and Mehari Woldeab, 1984:71). To avoid these various constraints, many patients resort to self-medication using over the counter drugs, home remedies, holy water or traditional healers and injection doctors which are not only usually cheaper but also more accessible both geographically and culturally Kloos etal., 1987a: 163).

The health sector component of the Ten-Year Perspective plan of Ethiopia (1983/84 - 1993/94) envisages a nation wide coverage of 80% by different types of services by the end of the plan period in 1994. This objective is expected to be attained by means of strong coordination, referral and support linkages of the six tier health care delivery system (MOH, 1985:18). The same plan also stipulates that by 1994 infant mortality should be lowered from 144 to 60, child (1-4 years) mortality from 92 to 65 and maternal mortality from 20 to 10 per 1000. According to the vaccination programme which commenced in 1980, all children under 2 years of age and all pregnant women in the country will be provided with the necessary vaccination services by 1990 (MOH, 1985:35 ; ONCCP, 1984:9).

Studies indicate, however, that a tremendous amount of work lies ahead to realize the objectives set above. A survey in Addis Ababa shows that out of the total population who should have received vaccination, only 33% of the children under 2 years of age and 6% of the antenatals were fully immunized and of those who started the vaccination about 40% defaulted (City Council and MOH, 1982/83:16). As regards antenatals, the same report (P.23) indicates that 64% did not appear even once for check-ups during their entire period of pregnancy and only 15% delivered in modern health facilities (MOH, 1982:27). Another study on EPI coverage in Addis Ababa also reveals that only 34% were fully immunized and 42% partly immunized; 27% did not get vaccination of any kind (MOH, 1983:7). Because of the various constraints involved, a review by the Ministry of Health is skeptical about the realization of the different programmes mentioned above. No quantitative objectives,

for example, are given for the nation wide vaccination coverage except that it should increase by 10% every year. Besides, according to the immunnization programme which started in 1980, a nation wide coverage of 50% should have been attained by 1984. The data released by the project, however,, shows that only 16% of the target population was covered by 1984 (MOH, 1985:38).

The concept of the referral system is based on the idea that patients should be diagnosed and/or treated in the lowest possible level of facilities near the patients homes and appropriate for their diseases. Only when a health facility is unable to render the necessary services should a patient be referred up in the chain for better treatment (King, 1966:2:4). The hierarchically organized health care system of Addis Ababa consists, from the bottom, of about 500 neighbourhood health action groups, 284 kebele level health services (most of them are not yet properly functioning), 10 health stations (excluding 59 health stations attached to various government agencies), 7 health centres, 5 zonal hospitals, 8 specialized hospitals and 1 national referral and training hospital (MOH, 1986a:270-90; Kloos etal., 1986:5). With the exception of a few facilities like ALERT and Tekur Anbessa hospitals, however, the patient referral system in the city as a whole is not well developed. A patient from any part of the city or country can directly go to the hospital of his own choice including the specialized and national referral hospitals even for minor illnesses that could easily and appropriately be treated at a health station or health centre. It is not unusual, therefore, to see a highly qualified physician treating minor illnesses (MOH, 1986b:44; Kloos etal., 1987a:159; Hailu Meche and Mehari Woldeab, 1984;69). A study in Addis Ababa, for instance,

shows, that as high as 90.2% of the hospital outpatients came on their own without being referred (Hailu Meche and Mehari Woldeab, 1984:69). Another study also reveals that out of the total outpatients in the hospitals studied, only 13-22% were referred and in the health centres and health stations, it was as low as 0-9% (Kloos etal., 1987a:163). Some patients after starting treatment in some of the facilities quit without notifying and completing the treatment and go to other health institutions that they think provide better services (MOH, 1986b:15). The same report (P.19) also expresses its concern that because the plan to assign the health facilities to clearly defined service areas is not yet strictly implemented, the catchment areas of the different levels of health facilities overlap, further complicating the referral system.

1.2 Objectives of the Study

This study focuses on the spatiality of health care utilisation in Addis Ababa based on examination of:

1. Catchment areas* and the distance factor.
2. Distribution of per capita utilisation rates** for polyclinic patients, sick children and antenatals in relation to distance from the health facilities.

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* Catchment area for each facility or type of patient is determined on the basis of number of kebele served within Addis Ababa and/or the proportion of patients from Addis Ababa, Shewa and the other administrative regions.

** Definition of per capita utilisation rates on page

3. The impact of target areas, transport facilities, previous treatment and referral practices on utilisation.

1.3 Hypotheses

To meet the objectives set above, the following research hypothesis have been formulated:

1. The catchment area of polyclinic outpatients is larger than those for sick children and antenatals.
2. There are significant differences in distance decay gradients for polyclinic patients, sick children and antenatals.
3. The proportion of referral of patients from outside Addis Ababa is higher than from Addis Ababa.
4. The proportion of referred polyclinic patients is higher than those for sick children and antenatals.
5. The proportion of free polyclinic patients from areas outside Addis Ababa is higher than that of full paying patients.
6. Duration of illness of polyclinic patients is related to distance travelled.
7. Size of facility in terms of medical staff and specialization is related to the number of patients served and catchment areas.
8. The proportion of inpatients from outside Addis Ababa is larger than that of outpatients.

1.4 Significance of the Study

The existing level and nature of health care delivery and utilisation in developing countries is a reflection of the overall socio-economic development and problems prevailing in these countries. Because attention is paid to the richer citizens of Third World countries,

modern health coverage in most of these countries is not more than 25% of the total population (Gish, 1979:204).

Wheareas some modern health care facilities in Ethiopia are under-utilised, others, both in the rural areas and Addis Ababa, are conjested (Buschkens and Slikkerveer, 1981:2; Kloos et al., 1987a:163). Due to a number of factors affecting health care utilisation, an estimated 75% of the rural Ethiopian population has no access to modern health services (Slikkerveer, 1982:1987) and the latest (1979 EC) estimated coverage was 45% (ONCCP, 1988:283). A health care utilisation study in Addis Ababa also indicates that geographic, economic, socio-cultural and facility related factors affect the proper utilisation of health institutions in the capital city. 30% and 9.9% of the ill persons in the low and high socio-economic kebeles respectively, for example, said that they did not use medical services because of physical, economic and socio-cultural factors (Kloos et al., 1987b:1016).

Health care utilisation and coverage studies are indispensable for optimizing the location and allocation of scarce health resources in a developing country like Ethiopia. Because the Municipality of Addis Ababa and the Ministry of Health require information on utilisation patterns for the purpose of improving health care delivery in Addis Ababa (Kloos et al., 1987a:157-58), the author of this paper strongly believes that this study can make a modest contribution to improving health care delivery and utilisation in Addis Ababa and thus to planning the health sector of the country as a whole.

1.5 Rationale for Selecting the Health Facilities Studies

This study covers 14 of the 29 government public health facilities in Addis Ababa including 6 hospitals, 3 health centres and 5 health stations. The other 15 hospitals, health centres and health stations in the city have already been studied by Kloos et al. (1987a). Thus, the selection of the remaining health facilities, namely Tekur Anbessa, Gandhi, Paulos, Ethio-Swedish, Ras Desta and Yekatit 12 (paediatric patients only) hospitals; Kebele 18, Kolfe and Talian Legasion health centres; and Addis Ketema, Beletschachew, Lideta, Gulele and Etege Mesk health stations in this study will complete the city's health care facilities utilisation studies (Fig.1).

1.6 Methodology

The data required for the study were obtained from various sources using the following methods:

a) The 1978 E.C. registration books for inpatients and first-visit outpatients of 6 hospitals (Tekur Anbessa, Paulos, Ras Desta, Gandhi, Ethio-Swedish and Yekatit 12), 3 health centres (Kebele 18, Talian Legasion and Kolfe) and 3 health stations (Gulele, Etege Mesk and Lideta) were reviewed in the respective facilities with the assistance of 12 senior undergraduate students.

b) Structured interviews were carried out in Hamle and Nehasse 1979 E.C. among 1800 polyclinic patients, 1400 sick children, 1400 antenatals and 200 gynaecology patients in the above medical facilities with the exception of Yekatit-12 Paediatric Hospital. The polyclinic outpatients were

1. Tekur Anbessa Hospital
2. Ethio-Swedish Hospital
3. Gandhi Hospital
4. Yekatit-12 Paediatric Hospital
5. Ras Desta Hospital
6. Paulos Hospital
7. Kebele 18 Health Centre
8. Kolfe Health Centre
9. Talian Legasion Health Centre
10. Etege Mesk Health Station
11. Beletshachew Health Station
12. Lideta Health Station
13. Addis Ketema Health Station
14. Gulele Health Station

Figure 1. Locations of the Health Institutions Studied

interviewed in 3 hospitals (Tekur Anbessa, Paulos, Ras Desta) and 3 health centres (Kebele 18, Talian Legasion and Kolfe), the sick children in Ethio-Swedish Hospital and 5 health stations (Addis Ketema, Gulele, Etege Mesk, Lideta and Beletshachew) and the antenatals and gyneacology patients in Gandhi Hospital, 2 health centres (Talian Legasion and Kolfe) and 4 health stations (Addis Ketema, Gulele, Etege Mesk and Lideta). The interviews were carried out by 12 university student assistants after proper training and field testing of questionnaires and under close supervision by the writer. Two types of questionnaires were use, one for polyclinic, gynaecology patients and sick children and the other for antenatal attendants. Most of the patients were interviewed during morning hours between 6:30 a.m. and 12 noon. More than three-quarters of all patients were interviewed in crowded waiting rooms that did not provide adequate privacy. The situation was due to lack of unoccupied or separate rooms or empty benches in the waiting rooms. As a result, patients waiting to be interviewed were listening to the questions and answers before hand. This probably influenced patient responses, particularly on sensitive questions such as type of illness and the use of traditional medicines.

c) Published and unpublished polyclinic, MCH and other statistics and reports available in the libraries and statistics departments of the Ministry of Health, Addis Ababa Health Office and Tekur Anbessa Hospital were reviewed.

The patient statistical data used being from 1978 E.C., the 1976 E.C. (1984) census data was used to compute per capita utilisation rates for distance rings of 1 km intervals in Addis Ababa. Per capita utilisation rates were calculated at the Kebele level by dividing the total number of different types of patients in each Kebele served at a given facility in 1978 E.C. by the total population of the respective kebele and multiplying by 100. For sick children and antenatals and gynaecology patients, the relevant populations, i.e., children under 5 years of age and the female population of 15-49 years of age, respectively, were used. Per capita utilisation rates were mapped. The circles were centered on each study facility to show the effect of distance on utilisation. To obtain the regression equations for the distance decay gradients, the negative exponential model of the form,

$$U = ae^{-bD}$$

where

U = utilisation

D = distance

e = the base of the natural logarithm

a and b = constants to be determined, is used.

This model was used by Stock (1983) in a health care utilisation study in rural Nigeria. It is selected on the ground that it provides meaningful and statistically significant predictions (Stock, 1983:564). Also the effect of target areas for each facility was evaluated. Catchment areas were determined for each facility and type of patients on the basis of (a) number of kebele served and (b) proportion of patients within a given distance (either in kilometers or Addis Ababa versus non-Addis Ababa patients).

On the basis of patient interviews, variables were selected to explain variations in utilisation. These variables are distance (Addis Ababa and the other administrative regions), type of illness, length of illness, referral of patients, sex, payment status, length of pregnancy, number of visits during pregnancy, mode of travel and previous treatment for the same illness. Chi-Square (X^2) tests were made for these variables to see if the distributions of the various categories of patients differed from the expected distributions. The rationale for selecting the model stems from its appropriateness for health care utilisation studies (Gesler, 1979; Kloos et al., 1987b).

CHAPTER 2

A REVIEW OF RELATED LITERATURE

2.1 Factors Affecting the Utilisation of Modern Health Services

Geographic, economic, socio-cultural and facility related factors are some of the major barriers in the utilisation of modern health services world wide. Geographic factors refer primarily to the physical distance between health care facilities and the residences of patients although topographic, transport and climatic barriers may contribute to distance constraints. The effect of distance on utilisation is more serious in developing than developed countries. Particularly where the density and quality of modern health facilities are low and lack of modern transport is severe, patients are generally unable or reluctant to travel great distances to obtain health care (Stock, 1983:563; Kloos et al., 1987b:1010; King 1966:2:6; Good, 1977:1). Moreover, limited financial resources and the confinement of modern health services and health personnel to larger urban centres make physical distance one of the major constraints of health care utilisation in these countries (Good, 1977:1). In general, physical distance, which may be calculated in straight line, actual measured length of journey, travel time, cost of transport etc., is an important component of accessibility (Gesler, 1984:60). Stock (1983: 567), however, warns that we have to be careful when choosing a variable for measuring spatial separation since there may be little relationship between travel time or transport cost and distance.

Health care utilisation studies show that there is an inverse relationship between per capita utilisation and physical distance

between health facilities and patients residences (King, 1966:2:7; Kloos et al., 1987a:161; Gesler, 1984:60; Stock, 1983:564). People prefer to obtain care at nearby health facilities indicating that number of patient travel, like other types of travel, decline with physical distance although type of illness, type and quality of health services and other factors influence the distance they actually travel (Mayer, 1983:826; Gesler, 1984). There are 4 major reasons why utilisation of health facilities is negatively related to distance: Fist, the greater the distance from a patients' residence or place of origin to a health facility, the higher the cost of transport. Second, it takes more time to travel longer distances and because of the opportunity cost involved, patients are reluctant to travel greater distances (Sorkin, 1976:137). Thirdly, intervening opportunities in the form of other health services increase with distance and lastly, information patients have about health services decreases with distance (Kloos et al., 1987b). The fact that utilisation is negatively related to distance from a health facility is demonstrated in a study of hospitals in uganda where the use of in-patient facilities halved every 5 kilometers whereas outpatient attendances were found to half every 3 kilometers (King, 1966:2:11). In Nigeria, the proportion of patients who travelled less than 10 kilometers to government dispensaries, rural health centres and hospital outpatients accounted for 94%, 89.3% and 85.2% respectively (Stock, 1983:565). A health care utilisation study among the Eastern Oromo of rural Hararge also reveals a decrease in the utilisation of modern health facilities with increasing distance from the facilities studied. Because of inadequate public transport in particular, there

was a sharp fall in utilisation after about 8 kilometers from the health facilities (Buschkens and Slikkerveer, 1981:109). Another study on the utilisation of selected health care facilities in Addis Ababa shows that 80-99% of the patients of the studied hospitals came from Addis Ababa and 0-10% travelled from rural places in Shewa and the rest of the country. Almost all the facilities studied served more clients from Shewa than from the whole of the rest of the country. Similarly, 35-95% of all the patients of the different hospitals, health centres and health stations in Addis Ababa lived within a radius of 2 kilometers (Kloos et al., 1987a:161). Another utilisation study of seven hospitals in Addis Ababa also reveals that 76.7%, 11.4% and 11.9% of the clients to these hospitals came from Addis Ababa, Shewa and the other administrative regions, respectively, further revealing the inverse relationship between distance and health care utilisation (Hailu Meche and Mehari Woldeab, 1984:68).

Although it is generally assumed that people prefer the closest health facility to minimize distance, it does not, however, mean that physical distance is the only factor and it may even be relatively unimportant in some localities (Gesler, 1984:68). Economic distance or accessibility, which is related to the capacity of the individual to cover the cost of treatment, travel and foregone earnings, is also a major barrier that affects the utilisation of health services. it includes also waiting time which may be used for productive activities (Gesler, 1984:68; Kloos et al., 1987a:161; Buschkens and Slikkerveer, 1981:8). Availability of health facilities may, therefore, be of little significance unless people have access to

them. Put in another way, a health facility is not accessible if the people around it are unable to afford its services (WHO, 1981:27; Aday and Anderson, 1974:82). This is a major health care utilisation constraint in developing countries, in particular where the services are designed to meet the health needs of the affluent urban minority, rather than those of the total population (Gish, 1979;104). A population based study among the Eastern Oromo of Hararge, for instance, reveals that about 83% of the population studied could not use the modern health facilities because of the high treatment cost involved. Transport cost and absence from work were also additional obstacles and hence they preferred to go to the traditional healers which were not only cheaper and sometimes free but also more accessible in terms of physical distance and social relations (Buschkens and Slikkerveer, 1981:110-11). Another health care utilisation study in Addis Ababa also reveals that a significant proportion of the patients interviewed preferred the facilities they were being treated because of low transport costs and shorter distance to avoid transport and travel time constraints (Kloos et al., 1987a:161).

The third major barrier in utilisation of the modern health facilities in developing countries are socio-cultural barriers. Socio-cultural distance in health care utilisation refers to the perception of and reaction to morbidity and varies primarily according to social class, cultural customs and preferences, religion and education. It is the acceptability of the services provided to those receiving the treatment (WHO, 1981:27; McKinlay, 1981:78; Bergner and Gilson, 1981:165). In Nigeria, for instance, age and sex were found to be important cultural factors affecting health care

utilisation. For a number of reasons, the mean distance travelled by both female out-and in-patients were significantly lower than for males. Adults also travelled further than children among both out-and in-patients (Stock, 1983:566).

Ethiopians have certain traditional perceptions, beliefs and customs surrounding disease causation and treatment, and many of them continue to use well tried and accustomed traditional treatments. As a result, the modern health services are in a serious competition with the traditional system in both the rural areas and Addis Ababa (Slikkerveer, 1982:1867). Addis Ababa residents and rural people widely believe that various "cultural illnesses" or cultural syndromes such as likift caused by demons (ganel in Amharic or jinni in Oromigna) hyena like character and possession caused by buda (evil eyed), madness and epilepsy cannot be cured by modern medicine (Young, 1976:150). For cures against spirit possession traditional healers such as the Amhara debtera and the Oromo kalicha exorcise or drive out evil spirits by smoking, whipping the patient and performing elaborate healing ceremonies. Counter-irritation and cauterization are also other methods used by Amhara and Oromo traditional healers to treat their patients. Many patients resort, therefore, to traditional healers like the baptizer healer (atmaky) and expert herbalist (yemedhanit awaki) for treatment rather than modern health services (Young, 1976;152; Buschkens and Slikkerveer, 1981:33).

Other factors affecting health care utilisation are facility-related which include the type and quality of services provided by individual health facilities, referral practices, fees charged for treatment, target areas and intervening opportunities. People are

willing to travel further when they expect better care at institutions with better facilities and more reputable and experienced personnel (Buschkens and Slikkerveer, 1981:113; Kloos et al., 161). Because institutions with a wider range of specialized services attract more patients from distant places than facilities offering a smaller range, there is a positive relationship between service hierarchy and mean distance travelled by patients (Shannon and Dever, 1974:101; Stock, 1983:565). In rural Uganda, for instance, the average number of outpatient attendances decreased by half for every 3.2 km from a hospital, every 2.4 km from a dispensary and every 1.6 km from and aid post (Sorkin, 1976:136) and in rural Nigeria, per capita outpatient utilisation decreased at rates of 25% and 20% per kilometer for government dispensaries and hospitals, respectively, and at a rate of 9% per kilometer for hospital impatients (Stock, 1983:565). A study among the Eastern Oromo of Hararge also indicates that people travelled further to hospitals and health centres than to nearby health stations expecting better care (Buschkens and Slikkerveer, 1981:113). A study in Addis Ababa also shows that hospitals, health centres and health stations served 12%, 5% and 4%, respectively, of the patients from the rural areas further revealing the significance of facility related factors in health care utilization (Kloos et al., 1987a:161).

As regards referrals, most Ethiopian patients prefer to go directly to hospitals without being referred by lower level health institutions since it is time consuming and self-referred patients are readily accepted in hospitals in the absence of an efficient referral system. This is a serious health care utilisation problem since it unnecessarily engages specialists and specialized medical

institutions in treatment that could easily be obtained at health centres, health stations and even kebele health services (Kloos et al., 1987a:163; Hailu Meche and Mehari Woldeab, 1984:65).

Because patients in Addis Ababa have different opportunities for treatment within the city's pluralistic health care system which consists of modern, transitional and traditional sectors, they may not necessarily go to the nearest health facility but to the one which they think serves them best and most appropriate for their illness (Kloos et al., 1987a:161-163).

2.2 Health for All by the Year 2000 and the Primary Health Care Approach

Despite the World Health Organization's declaration of health as a fundamental human right, health care delivery in many countries in the past remained disappointingly unsatisfactory and this feeling of desperation led to the declaration by the World Health Organization of "Health for All by the Year 2000" (HFA/2000) in 1977 and consequently in 1978 the introduction of the Primary Health Care (PHC) approach as the alternative for the realization of this global social goal (Yayeh Yirad Kitaw, 1982:9). HFA/2000 should not be wrongly taken to mean that by the year 2000 all people in all countries will be healthy in its absolute sense. It does not mean that all ailments and diseases in all countries will disappear by the turn of the country. Neither does it mean that health care delivery and health status will be uniform all over the world. This is unrealistic since differences in socio-economic achievements and other factors in different parts of the world do not allow this situation to prevail. What HFA/2000 means is that after about 12 years from now, ill health

should not prohibit people from leading an active and productive social ane economic life. Decreasing infant mortality rates to less than 50/1000 and raising average life expectancy to more than 50 years could be taken as possible indicators on the attainment of HFA/2000 (WHO, 1981:31; Yayeh Yirad Kitaw, 1982:9-10).

The 1978 Alma-Ata International Conference on Primary Health Care (PHC) emphasizes that the PHC approach is the key to achieving HFA/2000. Primary Health Care as defined by the World Health Organization (1981:32) is:

> essential health care based on practical, scientifically sound and socially acceptable methods and technology and made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of the development in the spirit of self reliance and self determination. It forms and integral part both of the country's health system of which it is the central function and main focus, and the overall social and economic development of the community. It is the first level of contact of individuals, the family and community, with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process.

The programmes of the PHC constitute (Yayeh Yirad Kitaw, 1982:12):

1. Education concerning prevailing health problems and the methods of preventing and controlling them.
2. Promotion and food supply and proper nutrition.
3. An adequate supply of safe water and basic sanitation.
4. Maternal and child health care, including family planning.
5. Immunization against the major infections diseases.
6. Prevention and control of locally endemic diseases.

7. Appropriate treatment of common diseases and injuries and

8. Provision of essential drugs.

Although the PHC approach is the key to attaining a reasonable and acceptable level of health for all by guranteeing everyone entry to the modern health care system, its realization depends, in addition to the efforts of health ministries, on mass participation and control, inter-sectorality and national political will (WHO, 1981:10; WHO, 1978:16-17; Yayeh Yirad Kitaw, 1982:11). The PHC approach implies that the misplaced health budget allocation policy in the developing countries which gives priority to expensive hospitals should be reversed to satisfy the needs of the majority. Because it is impossible and undersirable to establish a hospital in every village and town of the developing world, and also to make it an integral part of the overall socio-economic process, restructuring or reorienting health care deliver from the traditional hospital bias in favour of primary health care has no option (Gesler, 1984:56; Editor , 1984:25, Gish 1979:).

Although there are some who regard the PHC approach as a policy of undermining the high standards of medical advance and a new way of political rehtoric (Bennet, 1979:505), there are also others who believe that it is a potential solution to the health problems of the developing countries since it works within the framework of the disease patterns and resources of these countries which are totally different from those of the more developed countries (Gesler, 1984:73). Their argument is that the PHC approach should not be regarded as second class medical care designed for the poor. It is rather a way of overcoming underdevelopment and concerned with the provision of health for all (Editor, 1984:27).

2.3 The Urban Poor and Access to Health Care

The 1980 estimated world population of 4.4 billion is expected to reach 6.2 billion by the end of the centrury and that of the urban population is believed to shoot up from 1.8 billion to 3.2 billion during the same period representing increases of 41% and 78% respectively. Shanty and slum dwellers of the developing countries in the 1960's and 70's accounted for 30-60% of the urban dwellers. Estimates also indicate that an average of 50% of the urban dwellers and in some cities like Addis ababa, as high as 79% live under extreme poverty (Harpham, 1986:7). Kloos et al., (1987b:157) believe that higher urban population growth rates than the national rates, socio-economic factors, newly emerging diseases, scarce resources, inefficient referral of patients and the existence of both modern and traditional medical systems contributed to the complex urban health problems of the developing countries. Verhasselt (1985:483) also contends that because of the prevailing differences in the standard of life and contrary to the widely held view that urban centres appropriate a substantial proportion of national health resources, there is a tremendous intraurban inequality in the provision and utilization of health services in the cities of the developing countries. In Khartoum/Omdourman, for instance, socioeconomic status, the confinement of health facilities to the central areas of the city and poor public transport services severely affected the utilization of health services by the poorest section of the population (Herbert and Hijazi, 1984:314). Children and women of the urban poor in the developing countries are particularly susceptible to various diseases and the fist to suffer and die from unbearable health related conditions

(Donohue, 1984:43). In Cali a city in Colombia, where one doctor is available for every 900 people, 17% of the children who die are not seen by physicians during their illness and another 19% do not get medical treatment during the 48 hours preceding death (Bryant, 1969: 52-53).

Despite the vulnerability of the urban poor to various diseases, and the 1978 World Health Organization sponsored Alma-Ata International Conference recommendations that the PHC approach is appropriate to meeting the health needs of the majority of the population in the developing countries and thus should be implemented in both the rural and urban areas most of the efforts made so far have emphasized on the rural areas (Harpham, 1986:5). Verhasselt (1985:483) is also of the openion that in spite of the growing awareness of the health problems of the urban poor in the developing countries, very little attention has been paid to alleviate these problems. The solutions to the problem, however, needs an interdisciplinary approach and research studies should be stimulated on aspects related to planning and accessibility so that satisfactory proposals could be formulated to improve the health conditions of the urban poor. Harpham (1986: 12-14) is hopeful that the health problems of the urban poor in developing countries can be solved to a large extent through the PHC approach and suggests that efforts like the development of neighbourhood health programmes, the use of community health workers and attempts to extend hospital services to community health activities as well as a multisectoral approach to the problem can greatly reduce the health hazards of the urban poor.

Few governments and urban planners in the past paid little attention to improve the life of the urban poor of developing

countries (Mandle, 1982:13) and as a consequence the development of infrastructual services and other facilities in the major cities of these countries could not cope with the fast urban population increases (Perlman, 1979;5). Because the urban population of the developing countries is growing at a much faster rate than the rural population and since the urban problems are no longer problems of a minority, considerable attention should be paid to improve the life (including health) of the urban dwellers in general and the urban poor in particular (Donohue, 1984:43).

2.4 The Significance of Investment in Health Services

Being healthy is generally defined as a condition of total physical, mental and social well-being (WHO, 1983:5). It is also defined, in relative terms, as a condition or state in which all the systems of the body are well coordinated and working with maximum efficiency in the environment in which it is existing (Adeniyi-Jones, 1978;1). Despite the inalienable right of every human being to be healthy, as stated in the World Health Organization's Global Strategy of Health for All by the Year 2000, there are those who argue that allocation of resources to health services is tantamount to unnecessarily diverting funds from productive investment to services that are of no immediate economic benefit. Investment priority should be given, therefore, to activities of immediate return and health inevitably gets improved as a result of the "trickling down" of economic growth (McEvers, 1980:44). Others contend that improved medical care enhances population grwoth and damages the economy by rapidly increasing the population denominator

vis-a-vis the progress of the social numerators thus affecting the well-being or standard of living of the people (Bryant, 1969:99).

The proponents of investment in health services are opposed to the views mentioned above. They maintain that although medical care as a basic human right should be viewed from the level of health care delivery attained by individual countries, it should be recognized that health care cannot be a gift to be provided by a benevolent government to its people, but a right to be demanded by every citizen (Kaufmann, 1981:161). Hence, it is the duty of the government of every country to provide the minimum required medical care and thus respect the birth right of every person in its territory (Adeniyi - Jones, 1978:2). Because medical care is not a commodity to be purchased by the patient seeking treatment, unlike other goods and services, access to health care should not be income dependent but a right ot be enjoyed by everyone (Fuchs, 1974:14).

The strongest argument in favour of investment in health services comes from those who say that the well-being or health of a given population is of great importance to promote economic production and for this they give ample evidence in Africa, Asia, Latin America and other parts of the world where the eradication and control of diseases like malaria has greatly augmented productivity (Bryant, 1969:98-99; McEvers, 1980:44).

As mentioned earlier, there are those who argue that modern medicine is increasing the problems of mankind by saving the lives of people and thus creating overpopulation. Modern medicine may be one of the factors in this regard, but by no means the only factor responsible for the declining death rates of some parts of the

world. It is mainly as a result of improved standard of living, not of medicine, that death rates in the United States, for example, declined from 50/1000 to 10/000 in the past three centuries (Gesler, 1984:10; Twaddle, 1981:127). Being indifferent, therefore, to improve health care delivery and allowing high mortality as a means of controlling population growth is by no means acceptable. Moreover, the sick and disabled do not necessarily die. Thus, poor health among the population of a country means nothing but only physical and intellectual disability with a negative impact on the smooth development of the economy (Bryant, 1969:99). In fact, improved health in the working population can lead to what McEvers (1980:44) calls "a quantum jump in the quality of human capital". There should be no illussion that the answer to the health care delivery-population control dilemma does not come by following anyone of the two courses but only when we try to maintain the balance between the moral necessity of providing health care and the need for developing effective means of population control (Bryant, 1969:99).

The writer of this paper is in favour of investment in health services since the ultimate objective of every investment, be it economic or social, is to improve the standard of life of the people living on the planet.

CHAPTER 3

HEALTH AND HEALTH SERVICES IN ETHIOPIA AND ADDIS ABABA

3.1 The Pre-revolution Period

Many authors have written on the pre-revolution historical development of health services in Ethiopia and Addis Ababa. The reigns of Emperors Menelik II and Haile Sellassie I in particular witnessed major developments in modern health care delivery and utilisation in both Addis Ababa and the rest of the country. Studies of the history (Pankhurst, 1965) and development (Asfaw Desta, 1971; Buschkens and Slikkerveer, 1981) of health services in the pre-revolution period can shed much light on the situation since most hospitals and health centres as well as certain aspects of health care delivery in use today had their origins before the revolution. Nevertheless, major changes in health policy, manpower training and delivery have taken place since the revolution. Since this paper is primarily a statistical analysis of the utilisation patterns of health services in Addis Ababa in 1978 E.C., the reader is referred to the above mentioned studies for a detailed account of the pre-revolution historical development of health services in Ethiopia and Addis Ababa, which is beyond the scope of this study.

3.2 The Post-revolution Period and the Ten Year Health Sector Plan

The change of government in 1974 facilitated the foumulation of a revised health policy that emphasises primary health care and decentralization of health services (Tewabech, 1986:25; Elias Gebre Egziabher, 1986:1). Between 1974 and 1977, 500 new health stations

and 20 health centres were established, as well as new schools for health assistants and a medical school in Gondar (MOH, 1980:15). During the first decade of the revolution (1974-84), health stations increased from 650 to 2000, hospital beds from 8624 to over 11,000 and community health services from nil to 4500. Total health coverage also increased, from an estimated 20% to 43% (Tewabech, 1986:26), although this remains to be confirmed by utilisation studies. Table 1 shows the number of health facilities and hospital beds for the years 1954 E.C., 1965 E.C. (one year before the on set of the revolution) and 1976 E.C.

Table 1: Increase in health facilities - 1954 E.C., 1965 E.C. and 1976 E.C.

Type of Health Facility	1954	1965	1976
Health Stations	354	650	1949
Health Centres	41	93	141
Hospitals	54	84	83*
Hospital Beds	5158	8415	11296

SOURCE: MOH (1986a:1)

* Excludes Bonga, Mizan and Carta Hospitals.

The number of hospitals increased by 2 only (including Bonga, Mizan and Carta hospitals) in 1976 E.C. over that of 1965 E.C. Hospital beds, however, increased from 5158 in 1954 E.C. to 8415 in 1965 and 11296 in 1976 E.C. The emphasis after the revolution on the expansion of basic health services can be clearly observed by looking at the progress made in the number of health centres and health stations. The number of health centres which was 41 in

1954 E.C. and 93 in 1965 E.C., increased to 141 in 1976 E.C. The greatest increase was in the number of health stations, from 650 in 1965 E.C. to 1949 in 1976 E.C., showing increases of 550.6% and almost 300% over 1954 E.C. and 1965 E.C., respectively.

The ambitious 10-Year (1984/85-93/94) Health Sector Plan of Ethiopia envisages the expansion of health services to the majority of the country's population. In includes immunization for all children and all pregnant women and an increase in health services coverage from 43% in 1984 to 80% by the end of the plan period. Decreasing infant and child mortaility by 35% and 29% respectively and increasing life expectancy from 42 to 55 are some of the major tasks to be accomplished by 1994 (MOH, 1986a:292-293). By the end of the target year, a total of 6 central hospitals (3249 beds), 27 regional hospitals (5341 beds), 41 rural hospitals (3405 beds), 360 health centres (4850 beds), 3600 health stations and 36,000 community health services will be operational throughout the country to raise the current 0.5 visits per capita per year of health institutions to 2.3 (Elias Gebre Egziabher, 1986:5). A total of 2440 additional hospital beds 230 health centres, 1750 health stations and 31500 community health services will be required to achieve the 10-year health sector objective of the country (MOH, 1986a:294).

As regards health manpower development, considerable progress was made during the first eight year of the revolution (1974-82). Table 2 co mpares the manpower of the Ministry of Health in 1974 and 1982. It is important to note from the table that the increase in health assistants in 1982 was more than twice that in 1974 (102.5%).

and that community health workers, of which there were none in 1974, increased to 4500 in 1982, reflecting the efforts being made by the government to strengthen and expand basic health services.

Table 2: Ministry of Health-Manpower-1974 and 1982

Type of Health Workers	1974	1982	Increase
Doctors	374	435	16.3
Health Officers	213	244	16.9
Pharmacists	137	186	35.8
Nurses	1162	1600	37.7
Sanitarians	241	335	39.0
Medical Technicians	342	459	34.2
Health Assistants	4003	8104	102.5
CHW	-	4500	-

SOURCE: Tewabech (1986:29).

In spite of the progress made in health manpower development in the years past, shortage in different types of health personnel in the country as a whole is severe and differences among the different regions of the country are great. The number of population per medical doctor and nurse in the country in 1976 E.C., for example, was 57,867 and 21,523 respectively (MOH, 1986a:10) whereas according to WHO's estimates the number of population per physician in Africa overall, even as far back as in 1968, was 21,000, clearly reflecting the very low level of health care delivery in Ethiopia (Fekade Tsegaye, 1978:10-11).

The health manpower requirement of the country by the end of the 10-Year Health Sector Plan is very high. Table 3 provides a comparison of selected types of manpower in 1983/84 and the requirement by the

end of the plan period. The table indicates that a huge number of health manpower is required during the plan period with particular emphasis on those who will be providing basic health services.

Table 3: Health Manpower in Ethiopian in 1983/84 and Requirement by 1994.

Profession	1983/84	1994
All medical doctors	729	2000
Pharmacists and Pharmacy technicians	367	877
All nurses	1960	5498
All Lab. technicians	425	1039
Sanitarians	298	1746
Health Assistant	6991	13500
Community Health Agents	5228	31500
Traditional birth Attendants	5093	33000

SOURCE: MOH (1986a:295).

Budget allocated for health services by the government is the strongest indicator of the efforts being made to improve the health status of the population. The progress made in health budget allocation in Ethiopia, particularly after the revolution has been significant. For example, the amount allocated (161.1 million birr) to the Ministry of Health for the fiscal year ending Sene 30,1979 E.C. (1986/87) was more than 3 times the budget allocated for the fiscal year ending Sene 30,1966 E.C. (51.0 million birr) (Negarit Gazeta, 1973 and 1986), accounting for 3.51 and 5.95 percent of the total government expenditures respectively. It must be borne in mind, however, that most of the increase in health expenditure was negated

by inflation (Hodes and Kloos, 1988:7). Table 4 shows total government capital and recurrent expenditures and the budget allocated to the Ministry of Health for the years 1980 through 1984. As shown in this table, there were steady increases (although very small in 1984) in both the recurrent and capital health bedget for all the 5 years. After small but steady increases, the share of the health budget in relation to the national budget shows a relatively sharp fall in both the capital and recurrent budgets. The fall in the 1984 share could be attributed to the widespread drought condition of 1983/84 and

Table 4: Government and MOH Expenditures, 1980-84.

Budget	Year	Total Government (million Birr)	MOH (million Birr)	MOH as % of Total Government
Capital	1984	1600.4	48.7	3.0
	1983	1281.7	47.3	3.7
	1982	1049.1	29.6	2.8
	1981	937.4	25.1	2.7
	1980	710.4	16.8	2.4
Recurrent	1984	2678.6	100.1	3.7
	1983	2043.5	97.4	4.8
	1982	1818.7	88.0	4.8
	1981	1741.2	81.2	4.7
	1980	1654.6	76.2	4.6

SOURCE: WHO (1985:9).

consequent diversion of government expenditures to drought victims (WHO, 1985:9).

As regards the 10 year allocated budget for national level health services, average annual capital investment during the plan period will be 47 million birr or 470.4 million birr for the whole period. The

recurrent budget is also expected to rise from its current 163.1 million birr to 418.1 million birr by the end of the plan period (Elias Gebre Egziabher, 1986:14).

With respect to per capita recurrent budget, appropriate measures will be taken during the plan period to narrow the existing regional differences. Table 5 compares recurrent per capita expenditures in 1984/85 and 1993/94 among the different regions of the country. As this table shows, the 1984/85 regional differences will be greatly minimized by the end of the plan period. It should also be noted that

Table 5: Per Capita Health Expenditure by Administrative Region - 1984/85 and 1993/94.

Regions	1984/85	1993/94
Addis Ababa	13.0	17.0
Arssi	2.6	6.2
Bale	3.9	6.5
Eritrea	7.0	12.5
Gamo Gofa	2.7	6.6
Gojjam	1.7	6.2
Gondar	2.3	7.3
Hararge	2.5	7.6
Ilubabor	5.0	6.6
Keffa	2.9	7.5
Shewa	2.0	6.7
Sidamo	1.9	6.4
Tigrai	1.0	6.6
Wellega	2.3	6.1
Wello	2.2	6.1

SOURCE: Elias Gebre Egziabher (1986:17).

the regions with more than 7 birr per capita entertain zonal or national referral and training services requiring additional budget (Elias Gebre Egziabher, 1986:17).

Addis Ababa

Addis Ababa had a total of 29 government owned public health institutions in 1976 E.C., including 12 hospitals, 7 health centres and 10 health stations (excluding 58 school clinics and 59 health stations run by other government agencies) representing 14.5, 5.0 and 0.7 percent respectively, of the total hospitals, health centres and health stations in the country. All the hospitals, health centres and health stations were established prior to the 1974 re-voltuion. Five of the 12 government hospitals and 1 of the health centres were established before the Italian occupation and all the health stations came into existence during the post-war period. The city also has 3257 hospital beds and 244 medical doctors accounting for 28.8 and 33.5 percent of the national total respectively (MOH, 1986a). This is an undue share of the national health resources vis-a-vis the city's 1,412,575 population in 1984 which accounts for only 3.4% of the country's total (OPHCC, 1984:16). The privilege or advantage in health care delivery that Addis Ababa enjoys over the rest of the country is best reflected if comparison is made with some of the administrative regions at the other extreme, as shown in Table 6. Hararge, Tigray and Wello have the lowest medical doctor, health officer and nurse ratios respectively. To raise the ratios of these 3 regions to the level of Addis Ababa, the number of medical doctors in Hararge would have to be increased 171 times, Tigray's health officers 87 times and the number of nurses in Wello

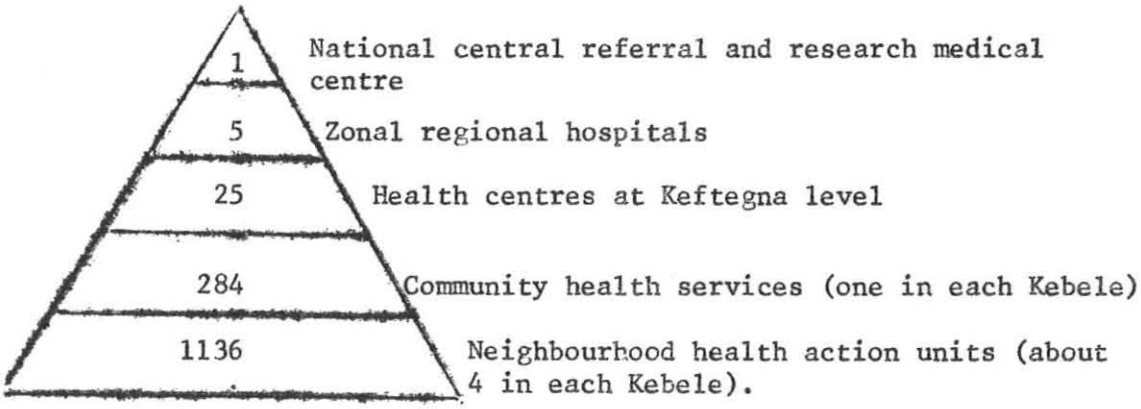
22 times. Although this is unlikely to occur, much remains to be done to narrow the wide gap existing between Addis Ababa and the rural areas.

Table 6: Number of People Per Medical Doctor, Health Officer and Nurses for Addis Ababa and Selected Regions - 1976 E.C.

Region	Per Med. Doctor	Region	Per Health Officer	Region	Per Nurse
Addis Ababa	5,789	Addis Ababa	13,986	Addis Ababa	2,167
Hararge	990,075	Tigray	1,204,850	Wello	47,299
Gamo Gofa	312,608	Wellega	619,319	Shewa	40,861
Shewa	212,910	Arssi	554,079	Gojjam	40,061
Country	57,867	Country	217,449	Country	21,523

SOURCE: Extracted from MOH (1986:10).

The 10-Year health sector plan of Addis Ababa stipulates a hierarchically organized health care delivery system as shown in the diagram below. At the top will be the national central referral training and



Source: City Council, Addis Ababa (1983:50)

research medical institution followed by 5 zonal regional hospitals that serve the 5 zones and the administrative regions of Addis Ababa. There will also be 25 health centres, one in each of the 25 keftegna of the city and community health services will be provided by all the 284 kebele with 4 neighbourhood health action units in each kebele (City Council, 1983:50).

As regards budget allocated for health services, Addis Ababa appropriated (excluding the health stations) 23.2% of the national total for salary, drugs and other activities in 1976 E.C. (MOH, 1986a: 13-19). Out of the total MOH recurrent budget (125.8 million birr) for 1979 E.C. (1986/87), the budget allocated to run the hospitals and clinics in Addis Ababa accounted for 25.15% (31.6 million birr) and that of the provincial and rural hospitals was 32.7% or 41.2 million birr (Negarit Gazeta, 1986). During the fiscal year ending Sene 1966 E.C. (one year before the revolution), by contrast the budget allocated 6.00 million birr to run the hospitals and clinics in Addis Ababa accounted for 16.4% of the national recurrent budget (36.4 million birr), and the provincial hospitals consumed 36.7% or 13 million birr (Negarit Gazeta, 1973). It means that the share of the budget allocated for the hospitals and clinics in Addis Ababa continued to rise during the post-revolution period whereas that of the provincial hospitals was falling. This trend contradicts the current health policy of the country, which gives priority to the development of basic health services for the majority of the rural population.

Concerning allocated budget per capita, Addis Ababa was far ahead of the other regions in 1976 E.C. with 16.37 birr per person. The national per capita was as low as 2.19 birr and Shewa, the lowest of all regions, received only 1 birr per person (MOH, 1986a:10).

As stated above, the rural urban disparity, Addis Ababa versus rural areas in particular, in health care delivery is alarming and requires serious attention, or else, was may have to argue saying that 12 years from now is so short a time that WHO's Declaration of Health for All by the Year 2000 is unrealistic and thus should be postponed to the end of the next century.

CHAPTER 4

HOSPITAL AND HEALTH CENTRE POLYCLINIC OUTPATIENTS AND HOSPITAL INPATIENTS

This chapter examines the 1978 E.C. health ceare utilisation patterns of 9628 and 111,720 first visit polyclinic outpatients in 3 hospitals (Tekur Anbessa, Paulos and Ras Desta) and 23,289 polyclinic outpatients in 3 health centres (Kebele 18, Talian Legasion and Kolfe). It also analyses the results of structured interviews among 1800 polyclinic outpatients in 3 hospitals (Tekur Anbessa, Paulos and Ras Desta) and 3 health centres (Kebele 18, Talian Legasion and Kolfe).

4.1 Catchment Areas and Per Capita Utilisation Rates

4.1.1 Polyclinic Outpatients: Figures 2-7 show the polyclinic outpatient per capita utilisation rates by Kebele and catchment areas of the 3 hospitals (Tekur Anbessa, Paulos and Ras Desta) and 3 health centres (Kebele 18, Talian Legasion and Kolfe).

The Hospitals: Figure 2 shows the per capita utilisation rates by kebele and catchment area for Tekur Anbessa Hospital. The rates, declining with increasing distance, are high for the kebele around the hospital in kegetegna 3 and 21 (4.0 to 7.9 per 100 population). A comparison of the rates to the north and south of the hospital (northern and southern halves of the city) shows that most kebele in the northern part of the city have lower rates, greater than 0 and less than 1.9 per 100 population, than those in the southern half (1.0 to 3.9) per 100 population. The reason for the lower rates in the northern half than in the southern half may be attributed to the intervening opportunities created by the location of Paulos, Ras Desta, Yekatit-12 and Menelik II hospitals in the northern half of

the city. Higher rates (4.0 to more than 16 per 100 population) for Paulos Hospital are confined to the kebele surrounding the health institution in keftegna 7,8,9,10 and 25 (Fig. 3). The highest rates (16 or more per 100 population) are restricted to kebele 3,10,22 and 25 in keftegna 8. The rates declined with increasing distance from the hospital ranging between 0.5 and 1.9 per 100 population for most kebele in the southwestern and southeastern parts of the city. As regards Ras Desta Hospital, only 5 kebele (kebele 3 in keftegna 1 and kebele 6,8,9 and 10 in keftegna 9) have the highest rates, 8.0 to 15.9 per 100 people (Fig. 4). The rates generally go on declining ranging between 0.5 and 1.9 per 100 population for most of the peripheral kebele in the western, southern and northeastern parts of the city.

A comparison of the per capita utilisation rates for the 3 hospitals shows that only Paulos Hospital has 4 kebele with rates of 16 or more per 100 population. The highest rate for Ras Desta Hospital is 15.9 per 100 population. The highest rate for Tekur Anbessa Hospital is less than 8 per 100 population. All rates for the 3 hospitals are greater than 0.

Since all the hospitals served patients from all the kebele of the city, we can say that there is no difference in the catchment areas of the hospitals within Addis Ababa (if the number of kebele served is taken as the criteria for catchment area). The distance decay gradients in Fig. 8 show, however, that Tekur Anbessa Hospital, followed by Paulos Hospital, has the largest catchment area of the 3 hospitals.

The Health Centres: Fig. 5 shows the catchment area and per capita utilisation rates for Talian Legasion Health Centre. Kebele 19,20 and 21 in keftegna 12 have the highest rates, 16 or more per 100 population. Keftegna 12,13 and 16 have kebele with rates ranging between 4 and less than 16. The rates decline to the northern and southwestern parts of the city (greater than 0 to 0.4). The kebele in the western and southern parts of the city did not send any patient to the facility. Kebele 3 and 5 in keftegna 25 have the highest rates for Kolfe Health Centre, 8.0 to 15.9 per 100 population (Fig. 6). The rates decline with distance from the health facility and consequently become zero for most kebele of the city. Figure 7 shows that kebele 18 in keftegna 5 (where the health centre is located) has the highest rate for kebele 18 Health Centre, 28.71. Three other kebele in the same keftegna (kebele 12,17 and 19) have rates ranging between 8.0 and 15.9. The rates for most kebele of the city are between greater than 0 and up to 0.4 100 population (Fig. 7).

The number of kebele served (Figs. 5-7) show that kebele 18 Health centre has the largest catchment area of the 3 health centres within Addis Ababa (241 Kebele) followed by Talian Legasion Health Centre (135 kebele). The distance decay gradients in Fig. 8 also reveal that kebele 18 and Kolfe health centres have the largest and smallest catchment areas of the 3 health centres, respectively.

A comparison of the catchment areas of the 3 hospitals and 3 health centres reveals that the hospitals have larger catchment areas than the health centres. The hospitals served patients from all the kebele of the city and the health centres treated patients

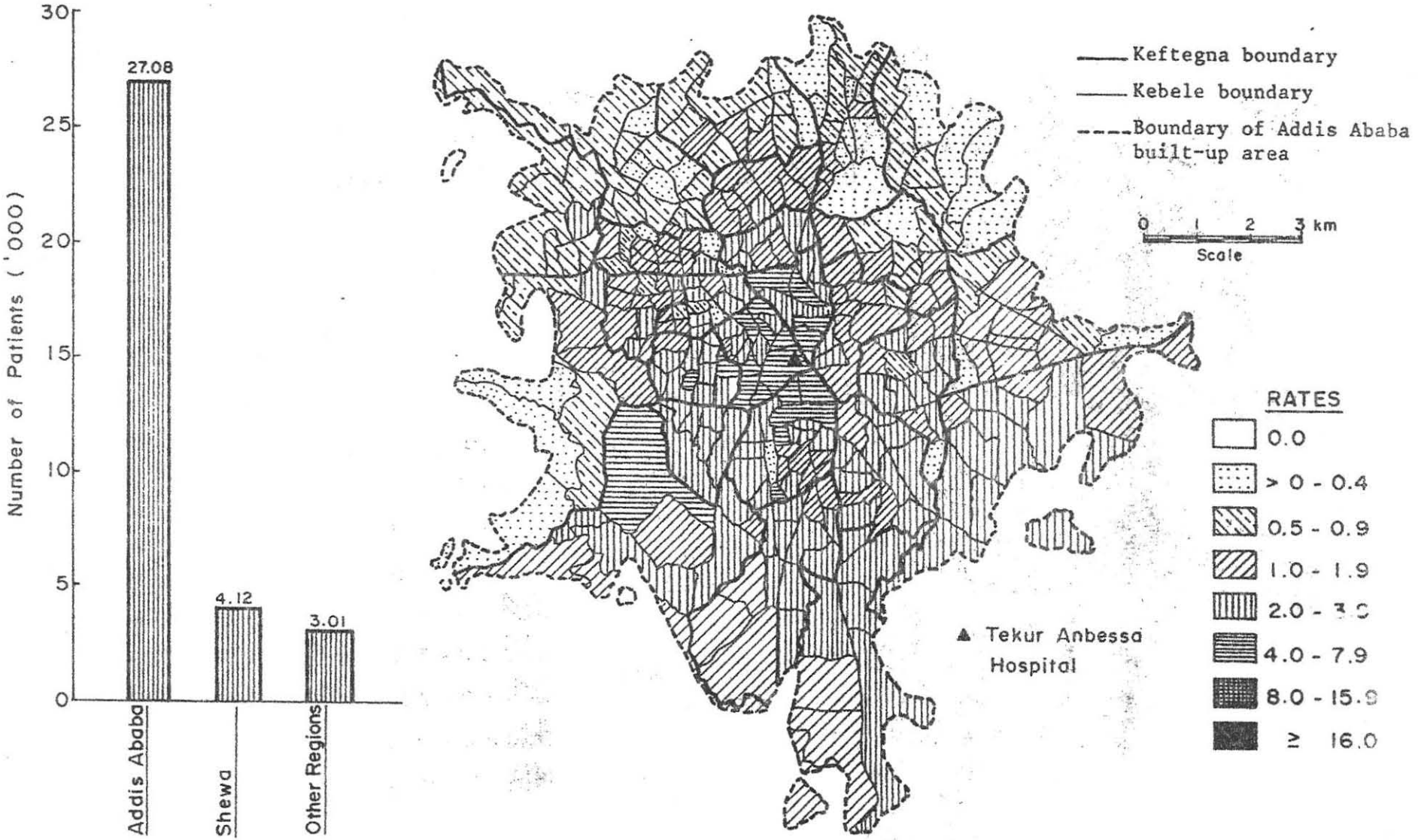


Figure 2. Per Capita Utilisation Rates by Kebele for Polyclinic Outpatients of Tekur Anbessa Hospital - 1978 E.C.

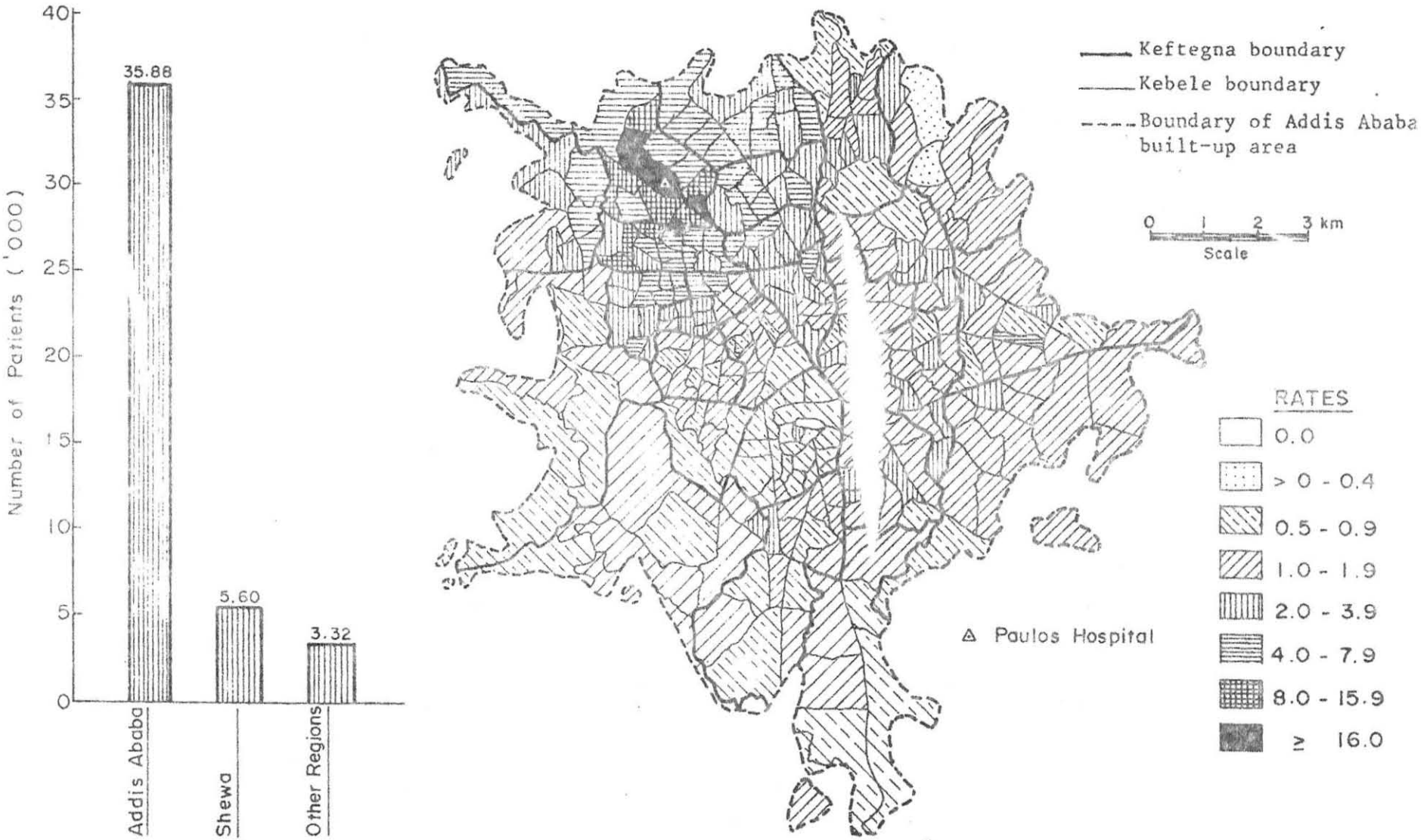


Figure 3. Per Capita Utilisation Rates by Kebele for Polyclinic Outpatients of Paulos Hospital - 1978 E.C.

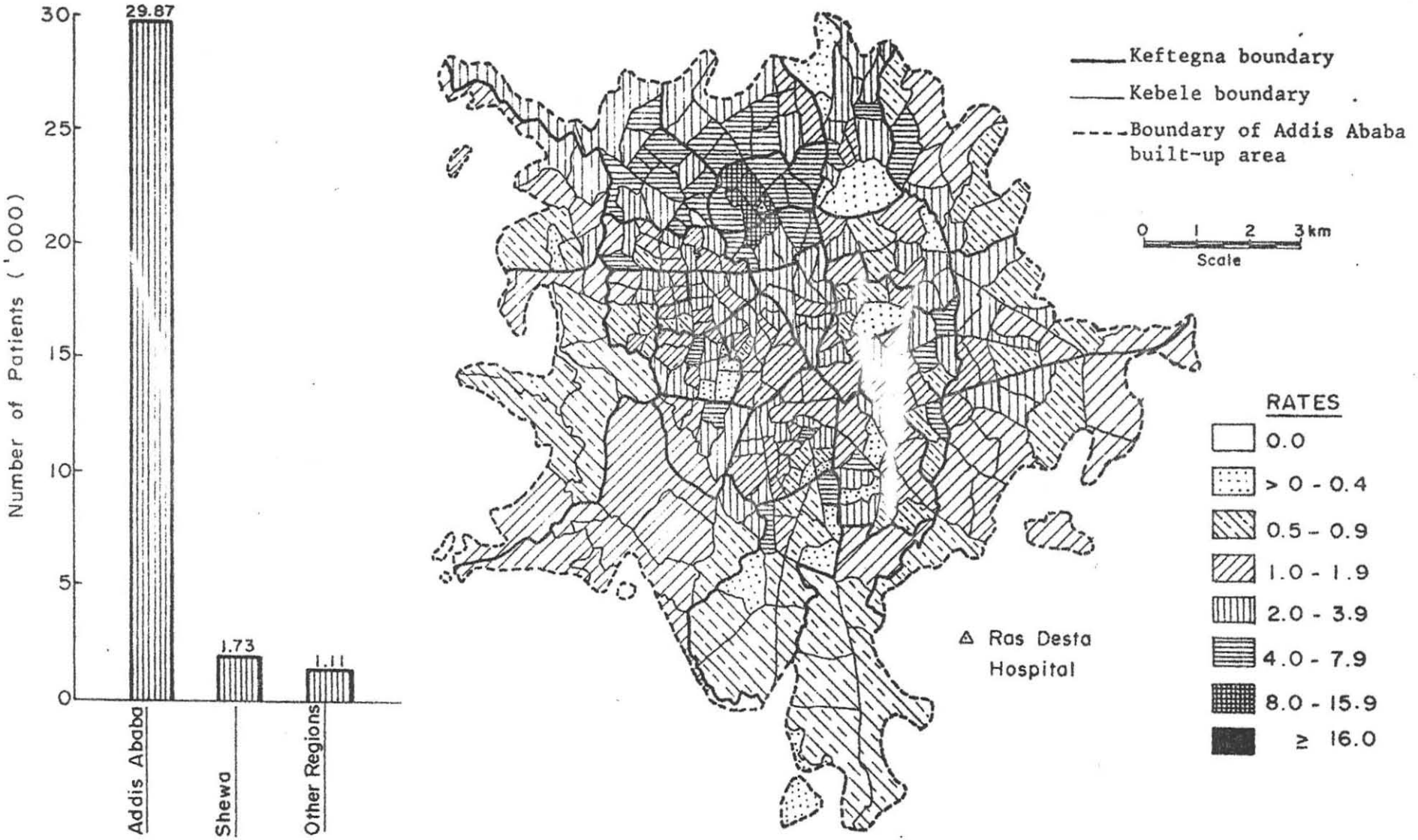


Figure 4 Per Capita Utilisation Rates by Kebele for Polyclinic Outpatients of Ras Desta Hospital - 1978 E.C.

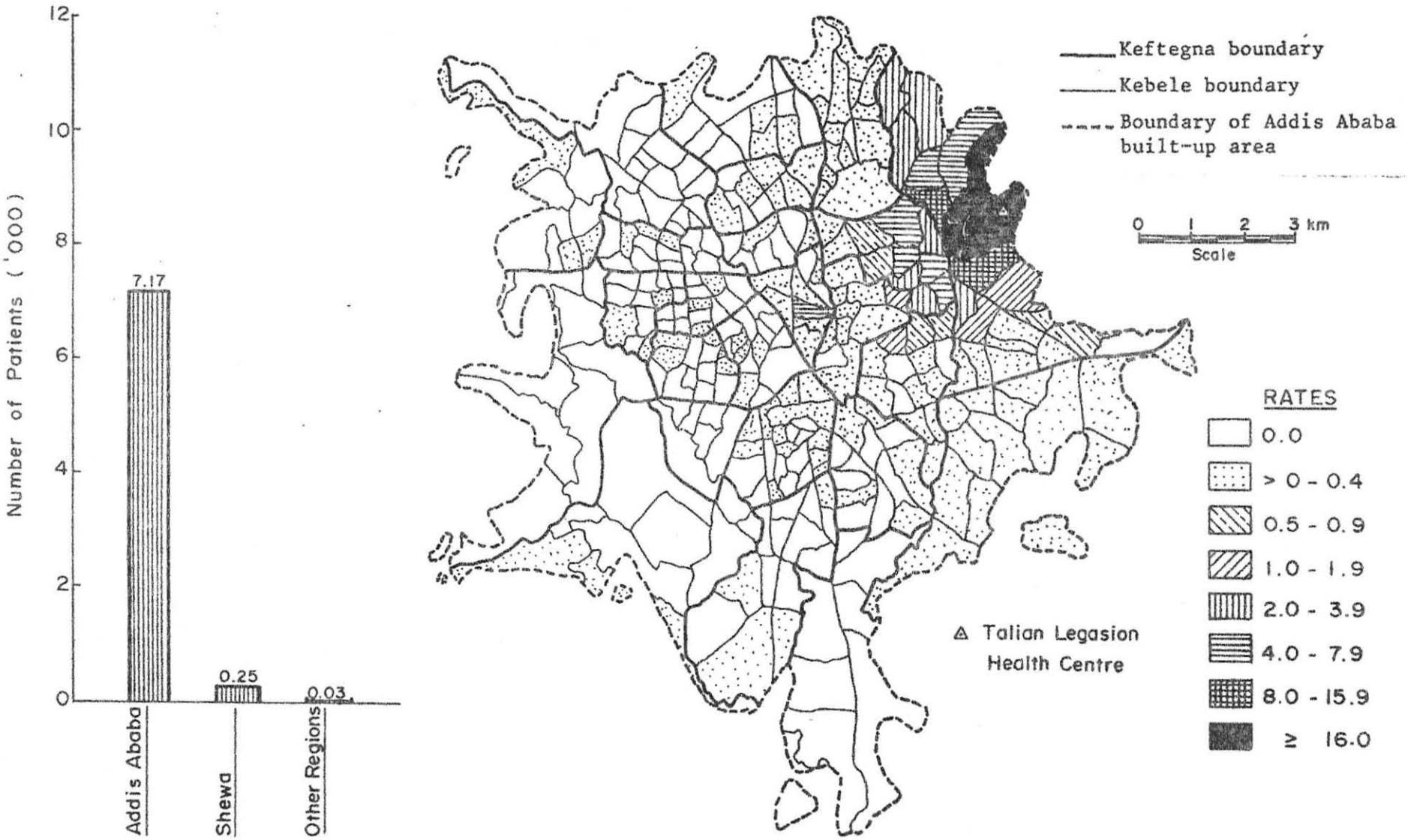


Figure 5. Per Capita Utilisation Rates by Kebele for Polyclinic Outpatients of Talian Legasion Health Centre - 1978 E.C.

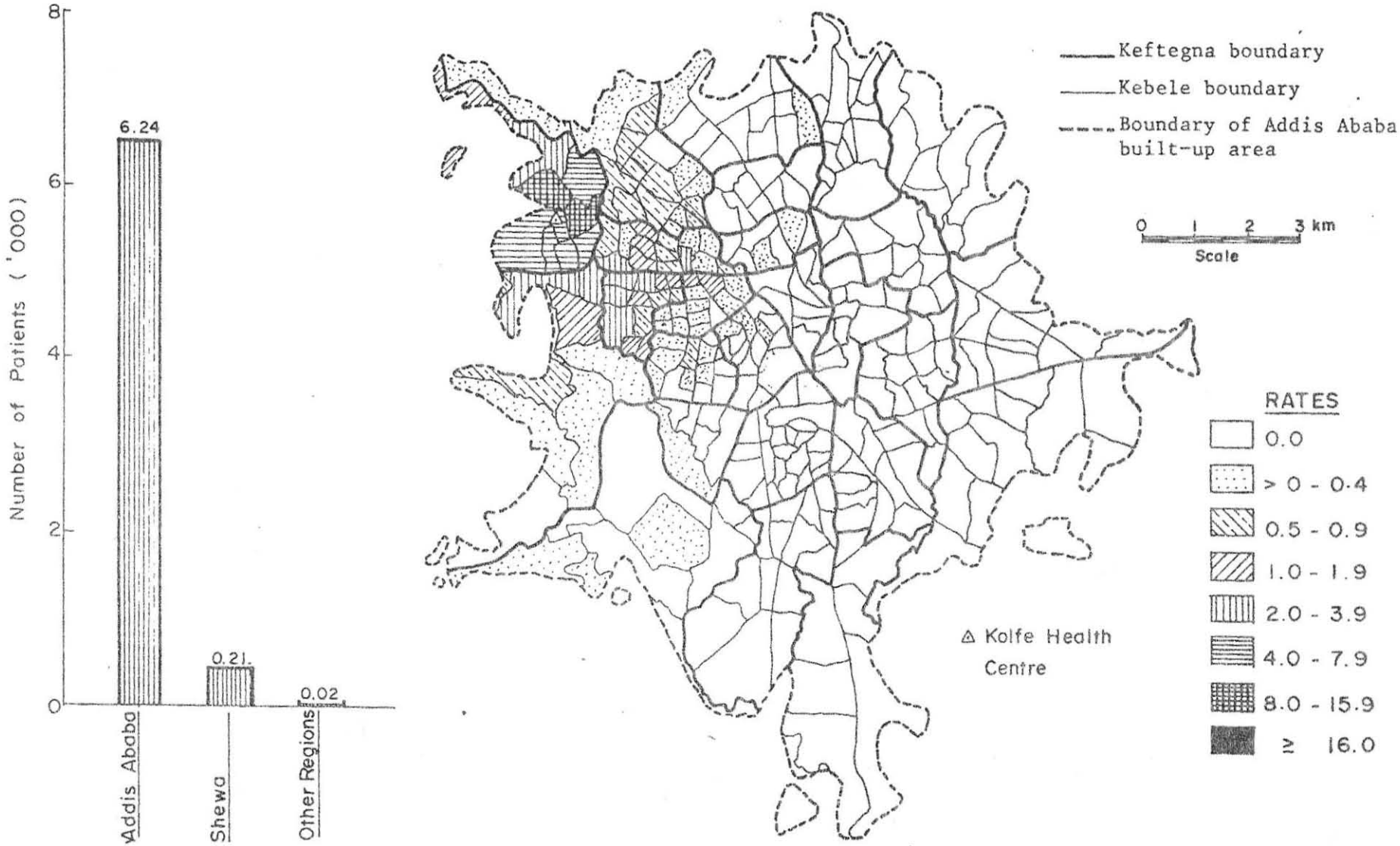


Figure 6. Per Capita Utilisation Rates by Kebele for Polyclinic Outpatients of Kolfe Health Centre - 1978 E.C.

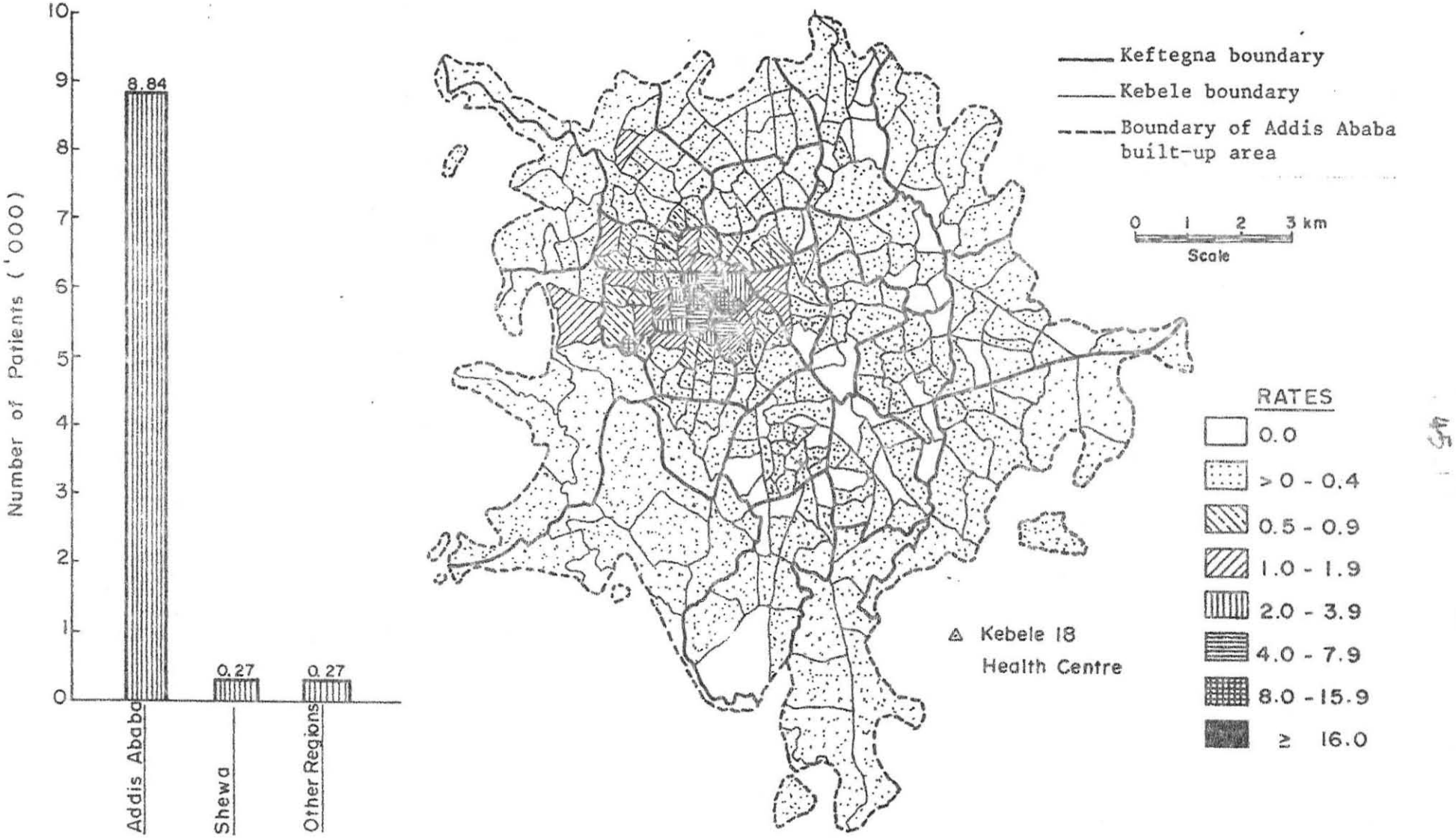


Figure 7. Per Capita Utilisation Rates by Kebele for Polyclinic Outpatients of Kebele 18 Health Centre - 1978 E.C.

mainly from the kebele of nearby keftegna. The distance decay gradients in Fig.8 also confirm the same situation.

Table 7 shows the number and proportion of first visit outpatients from Addis Ababa, Shewa and the other administrative regions for the 3 hospitals and 3 health centres studied. Out of all patients treated in the 6 health institutions, 85.2%, came from Addis Ababa, 9.0% from Shewa and 5.8% from the other administrative regions. Tekur Anbessa Hospital followed by Paulos Hospital had the largest catchment area of the 3 hospitals with 79.1%, 12% and 8.8% of its patients from Addis Ababa, Shewa and the other regions

Table 7: Distribution of first-visit polyclinic outpatients from Addis Ababa, Shewa and the other administrative regions among the 3 hospitals and 3 health centres, 1978 E.C.

	Addis Ababa		Shewa		Other Regions		TOTAL	
Facility	No.	%	No.	%	No.	%	No.	%
Tekur Anbessa Hospital	27,078	79.1	4,122	12.1	3,018	8.8	34,218	100.0
Paulos Hospital	35,879	80.1	5,600	12.5	3,315	7.4	44,794	100.0
Ras Desta Hospital	29,869	91.3	1,732	5.3	1,107	3.4	32,708	100.0
Talian Legasion Health Centre	7,165	96.2	252	3.4	27	0.4	7,444	100.0
Kolfe Health Centre	6,237	96.4	209	3.2	23	0.4	6,469	100.0
Kebele 18 Health Centre	8,839	94.3	270	2.9	267	2.8	9,376	100.0
TOTAL	115,067	85.2	12,185	9.0	7,757	5.8	135,009	100.0

Source: Patient registration books, 1978 E.C.

respectively. Kebele 18 and Kolfe health centres had the largest and smallest catchment areas of the 3 health centres. The reason for Kebele 18 Health Centre having the largest catchment area of the 3 health centres may be attributed to its location in the busy Mercato area. Patients can get treatment and at the same time shop in the Merkato. For all the 6 health institutions, more patients came from Shewa than from the other administrative regions combined.

Table 8 shows the distribution of polyclinic outpatients of the 3 hospitals and 3 health centres by place of patient residence. The hospitals as a group served 83.1% of the patients from Addis Ababa, 10.2% from Shewa and 6.7 from the other administrative regions. The health centres together served a larger proportion of polyclinic patients from Addis Ababa (95.5%), but fewer from Shewa (3.1%) and the other administrative regions (1.4%). Both the number and proportion of patients from Shewa and the other administrative regions

Table 8: Summary distribution of polyclinic outpatients among the 3 hospitals and 3 health centres from Addis Ababa, Shewa and the other regions - 1978 E.C.

	Hospitals		Health Centre		TOTAL			
Regions	No.	%	No.	%	No.	%	X^2	Sig.
Addis Ababa	92,826	83.1	22,241	95.5	115,067	84.5		
Shewa	11,454	10.2	731	3.1	12,185	9.2	23.69	<0.001
Other Regions	7,440	6.7	317	1.4	7.757	5.9		
TOTAL	111,720	100.0	23,289	100.0	135,009	100.0		

Source: Patient registration books - 1978 E.C.

were higher for the hospitals than for the health centres indicating larger areas of influence for the hospitals than for the health centres. In both the hospitals and health centres more patients came from Shewa than from the other administrative regions. The situation confirms the findings of previous researchers (Kloos et al., 1987a; Hailu Meche and Mehari Woldeab, 1984).

4.1.2. Inpatients

A total of 9628 inpatients were treated in Tekur Anbessa, Paulos and Ras Desta hospitals in 1978 E.C. Table 9 shows the number and proportion of inpatients from Addis Ababa, Shewa

Table 9: Inpatients of the 3 hospitals from Addis Ababa, Shewa and the other regions, 1978 E.C.

	Tekur Anbessa		Paulos		Ras Desta		TOTAL	
Region	No.	%	No.	%	No.	%	No.	%
Addis Ababa	3330	80.9	4127	89.5	781	86.8	8238	85.6
Shewa	471	11.4	278	6.0	86	9.5	835	8.6
Other Regions	317	7.7	205	4.5	33	3.7	555	5.8
TOTAL	4118	100.0	4610	100.0	900	100.0	9628	100.0

Source: Patient registration books, 1978 E.C.

and the other administrative regions. Out of all the inpatients admitted to the 3 hospitals, 85.6%, came from Addis Ababa 8.6 from Shewa and 5.8 from the other administrative regions. Although the number of inpatients in Tekur Anbessa Hispital was less than that of Paulos Hospital, the proportion and number of those from both Shewa and other administrative regions were the largest of the 3 hospitals. This may be due to its role as a national referral

hospital. The proportions of inpatients from Shewa were larger than those of the other administrative regions for all the 3 hospitals.

A comparison of the distribution of the hospital inpatients and polyclinic outpatients shows that the catchment area for the outpatients was larger than that of inpatients with 83.1%, 10.2% and 6.7% of the total outpatients coming from Addis Ababa, Shewa and the other administrative regions, respectively (tables 8 and 9). Reference to the individual hospitals shows that outpatient catchment areas for Tekur Anbessa and Paulos hospitals were larger than those of inpatients and the reverse holds true for Ras Desta Hospital (tables 7 and 9).

4.2 Factors Related to the Unilisation of the Health Facilities

4.2.1 Physical Distance: Physical distance between the 3 hospitals and 3 health centres and the residences of patients was found to be a major factor affecting the utilisation of the services provided by the facilities. Table 10 shows the distribution of the population of Addis Ababa and the number of patients within a 2km radius of the 3 hospitals and 3 health centres. The proporiton of patients within this distance ring of the various facilities ranged from 35.3% to 87.9%, being higher for the health centes (68.5% to 87.9%) than for the hospitals (35.3% to 38.8%). The same distance ring, however, comprises only 4.5% to 29.3% of the city's population. The relatively lower population proportions for Talian Legasion and Kolfe health centres are apparently due to their locations toward the peripheral areas of the city (Fig. 5 and 6).

Table 10: Number and Proportion of Polyclinic Outpatients Living Within a 2 km radius of the Health Facilities - 1978 E.C.

FACILITY	POPULATION		PATIENTS	
	No.	%*	No.	%*
Tekur Anbessa Hospital	310,027	22.0	9,558	35.3
Paulos Hospital	213,264	15.0	13,855	38.6
Ras Desta Hospital	283,967	19.8	11,585	38.8
Kebele 18 Health Centre	416,405	29.3	7.772	87.9
Talian Legasion Health Centre	50,473	4.5	4,906	68.5
Kolfe Health Centre	126,359	15.2	4,484	71.9

Source: Patient registration books

* The percentages are of their own respective total number of patients and catchment area populations in Addis Ababa.

The consistent declines in the per capita utilisation rates for the 1978 E.C. statistics with increasing distance of 1 km interval (Table 11) reveal the effect of distance on the utilisation of the services provided by the 3 hospitals and 3 health centres. The declines in the rates for the hospitals are gradual and sharp for the health centres particularly beyond the 0-1 km distance ring. The rates for Paulos Hospital (10.1) and Talian Legasion (17.5) and Kolfe health centres (6.8) in the 1 km radius are higher than for the other 3 health institutions (Tekur Anbessa and Ras Desta hospitals and Kebele 18 Health Centre) due to their locations toward the peripheral built-up areas of the city with lower population densities (Figs. 3, 5 and 6). Because of the locations of Tekur Anbessa Hospital in the centre of the city and Kebele 18 Health centre in the busy and densely populated Mercato area, they have lower utilisation rates, 4.1 and 4.4, respectively.

Table 11: Per Capita Utilisation Rates for Distance Rings of 1 km Interval for the 3 Hospitals and 3 Health Centres-1978 E.C.

	Number of Patients Per 100 Population					
Distance	Tekur Anbessa	Paulos	Ras Desta	Kebele 18	Talian Legasion	Kolfe
0-1	4.14	10.09	6.66	4.36	17.54	6.75
1-2	2.78	5.64	3.18	0.60	8.62	2.15
2-3	2.12	3.35	1.95	0.20	1.72	0.68
3-4	1.48	1.63	1.80	0.10	0.31	0.22
4-5	1.29	1.48	1.46	0.07	0.05	0.04
5-6	1.27	1.35	1.45	0.06	0.02	0.01
6-7	1.25	1.34	1.30	0.06	0.01	
7-8	1.23	1.34	1.15	0.05	0.01	
8-9	1.21	1.23	1.11			
9-10		1.20	0.81			
10-11		0.90	0.49			
11-12		0.74	0.42			
12-13		0.68				

Source: Patient registration books, 1978 E.C.

The effect of distance on the utilisation of the services provided by the 3 hospitals and 3 health centres is also confirmed by the distance decay gradients, correlation coefficients and coefficients of determination (r^2) shown in Fig. 8. Utilisation and distance are significantly correlated for all the facilities with correlation coefficients ranging between -0.8781 and -0.9951. The coefficients of determination also reveal that 77% to 99% of the variations in the utilisation of the 6 health institutions are explained by distance. The graphs in Fig. 9, showing the actual relationships between distance and utilisation further reveal the effect of distance on the utilisation of the services provided by the 3 hospitals and 3 health centres.

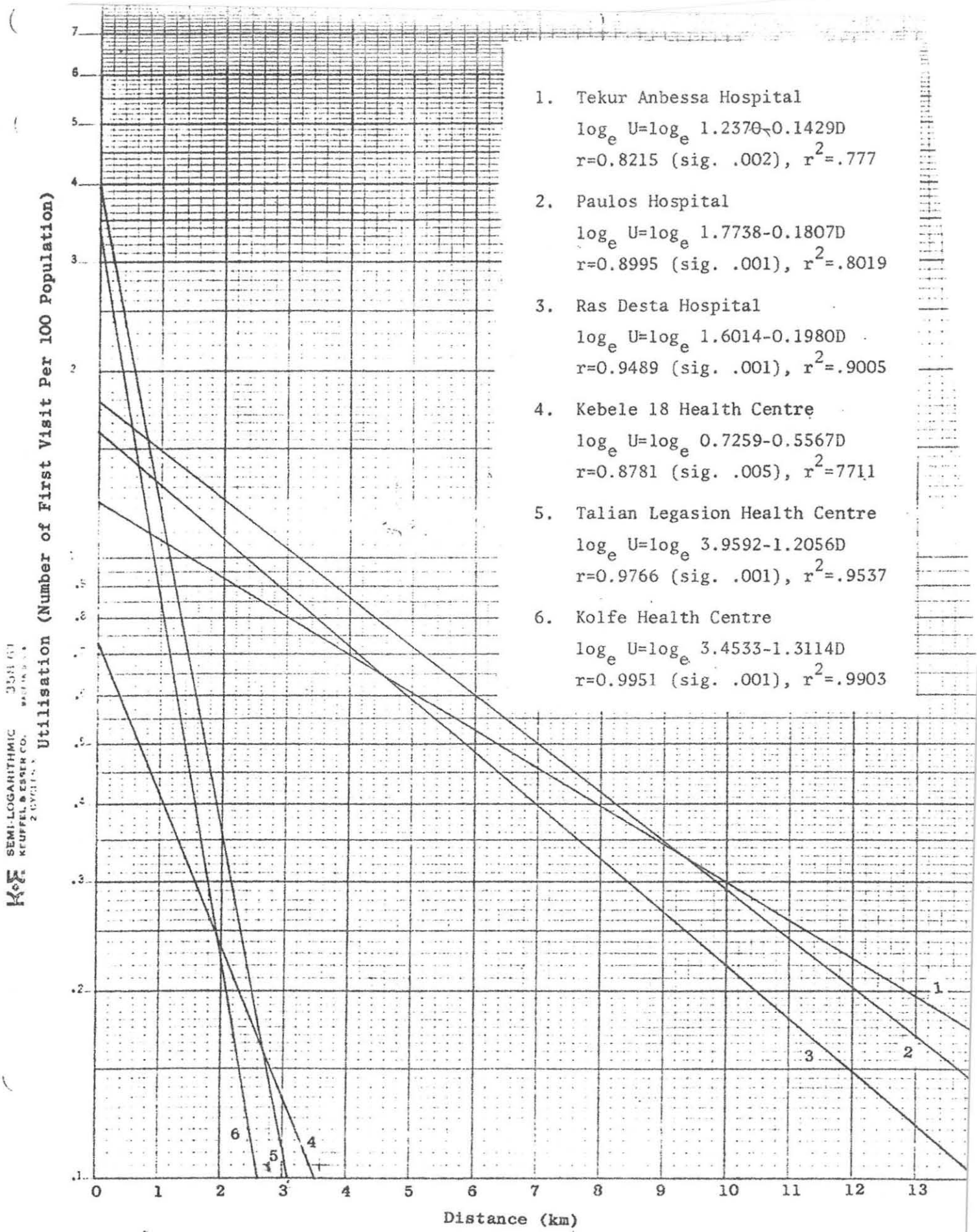


Figure 8. Distance and Utilisation Relationships for Polyclinic Outpatients in 3 Hospitals and 3 Health Centres - 1978 E.C.

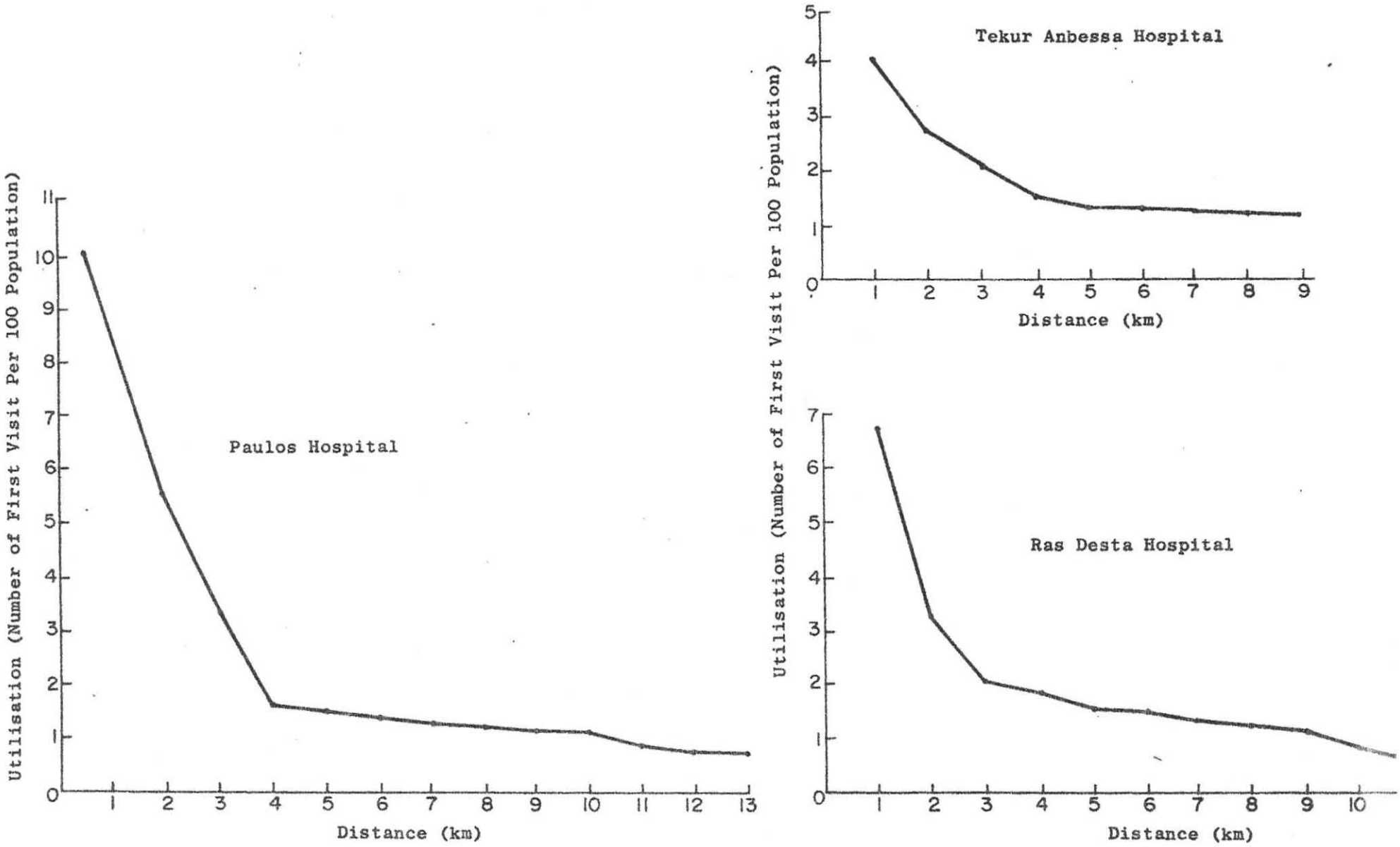
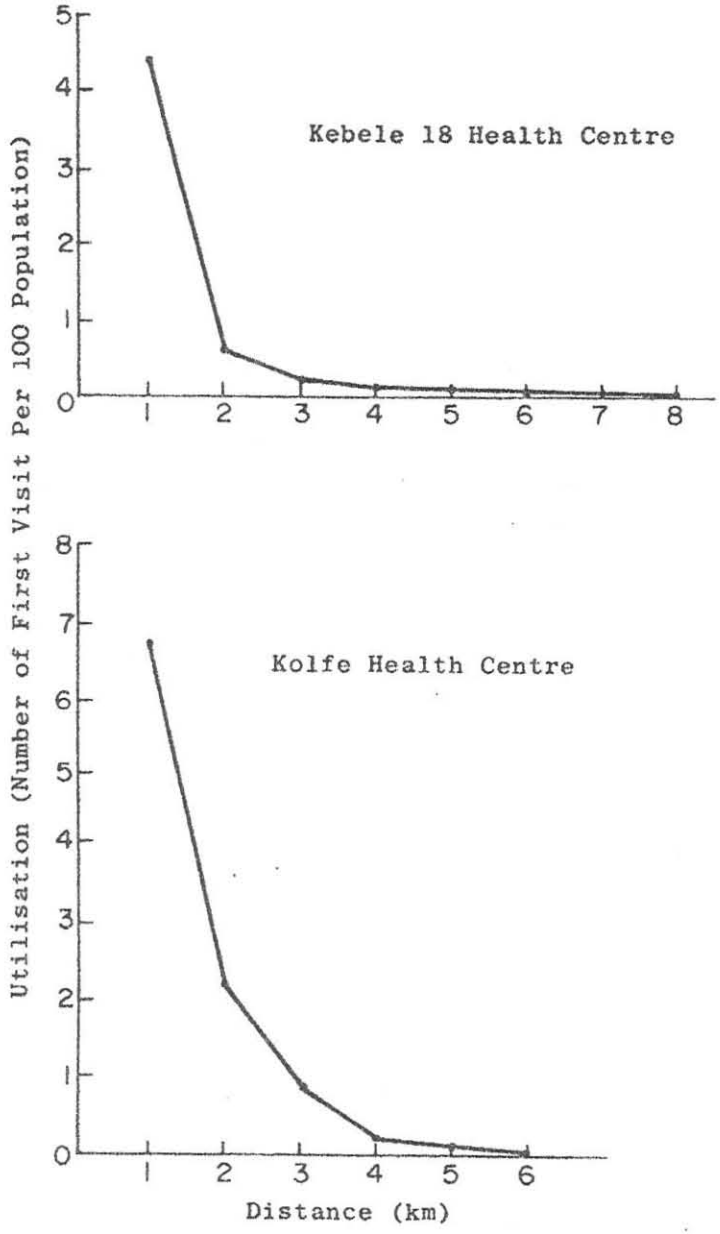


Fig. 9. Distance and Per Capita Utilisation Relationship for Polyclinic Outpatients - 1978 E.C.


Kebele 18 Health Centre
Kolfe Health Centre
Utilisation (Number of First Visit Per 100 Population)
Distance (km)

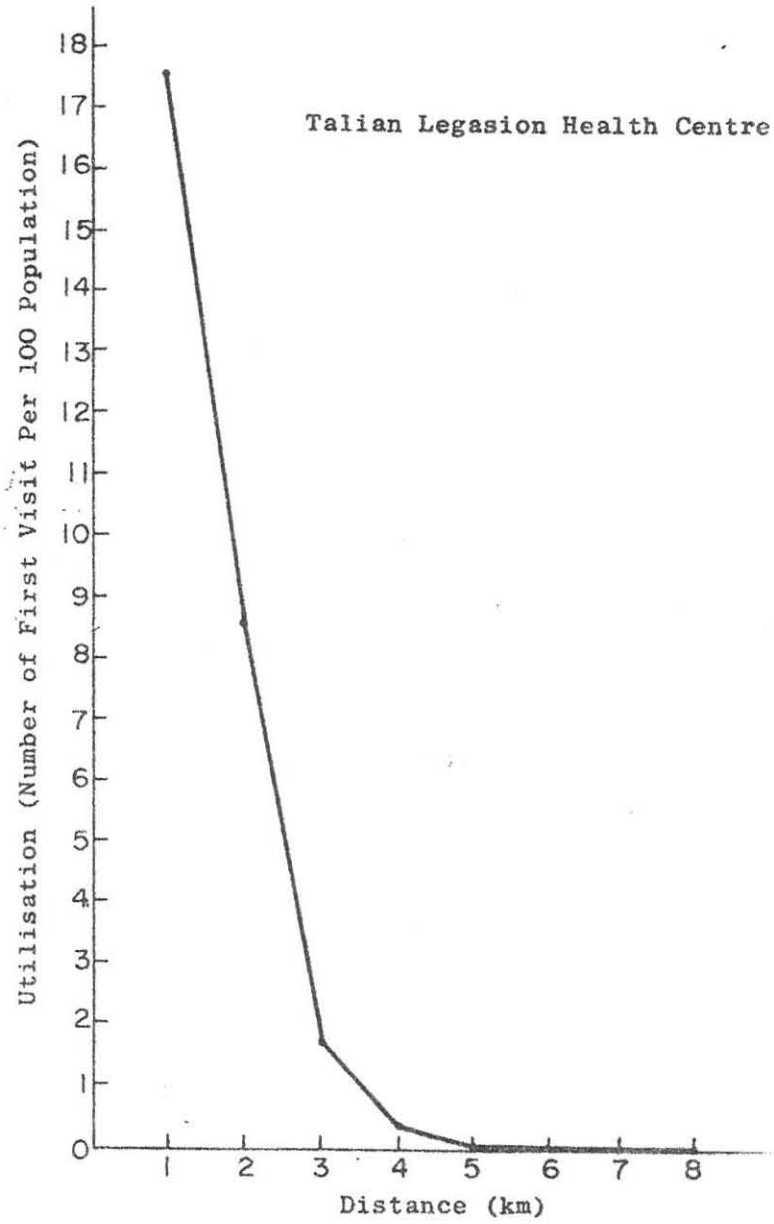

Talian Legasion Health Centre
Utilisation (Number of First Visit Per 100 Population)
Distance (km)

Fig. 9 (Cont'd.)

4.2.2. Size of Facility: Although distance, as discussed above, is a major factor affecting the utilisation of the health facilities studied, this study also confirms the findings of previous studies (Kloos et al., 1987a; Hailu Meche and Mehari Woldeab, 1984; Stock, 1983) that patients are willing to travel further to specialized health institutions rather than to nearby facilities with lower level services. Whereas the 3 hospitals attracted patients from all the Kebele of the city, the 3 health centres served patients mainly from kebele of respective nearby Keftegna (Figs. 2-7). The proportions of patients from both Shewa and the other administrative regions were also much higher for the hospitals than for the health centres (Table 7). Thus, mainly due to the wider range of services provided (MOH, 1986a: 279-285) and the perceived quality of services available, more patients travelled further to the hospitals rather than to nearby health centres. The chi-square value of 23,69 with P significant at <0.001 level (Table 8) confirms that the distances travelled by hospital patients were significantly larger than those travelled by health centre patients.

4.2.3. Referral Status: Structured polyclinic outpatient interviews in 3 hospitals (Tekur Anbessa, Paulos and Ras Desta) and 3 health centres (Kebele 18, Talian Legasion and Kolfe) reveal that referra of patients is not well developed. Table 12 shows the number and proportion of referred and non-referred interviewees in the 3 hospitals and 3 health centres. out of the 1800 patients interviewed, only 182 (10.1%) said that they had been referred and the remaining 1618 (89.9%) were self-referred patients; 8.0% of the interviewed patients from Addis Ababa and 16.4% from the rural areas

Table 12: Referral Status for the 3 Hospitals and 3 Health Centres - 1978 E.C.

	Referred		Non-referred		Total	
FACILITY	No.	%	No.	%	No.	%
Tekur Anbessa Hospital	102	25.5	298	74.5	400	100.0
Paulos Hospital	46	11.5	354	88.5	400	100.0
Ras Desta Hospital	29	7.25	371	92.8	400	100.0
Talian Legasion Health Centre	2	1.0	198	99.0	200	100.0
Kolfe Health Centre	0	0.0	200	100.0	200	100.0
Kebele 18 Health Centre	3	1.5	197	98.5	200	100.0
TOTAL	182	10.1	1618	89.9	1800	100.0

Source: Structured patient interviews by the writer.

(including Shewa), were referred. The proportion of referral patients for the hospitals varied from 7.25% (Ras Desta) to 25.5% (Tekur Anbessa). For the health centres it ranged from 0 to 1.5%. The findings are in line with previous studies (Kloos et al., 1987a; Hailu Meche and Mehari Woldeab, 1984). Chi-square tests were applied for the 3 hospitals (Table 13) to see if referral status (referred

Table 13: Chi-square Values for 3 Hospitals for the Differences in referral of patients by distance.

Facility	Referral Status	Addis Ababa	Other Regions	X^2	Significance
Tekur Anbessa	Referred	37	58	7.34	0.010
	Not Referred	153	125		
Paulos	Referred	18	23	1.50	0.250
	Not Referred	181	154		
Ras Desta	Referred	14	12	2.78	0.100
	Not Referred	251	110		

Source: Structured interviews by the writer.

and non-referred) was indpendent of distance (Addis Ababa and the rural areas). The results were significant for Tekur Anbessa Hospital (which may probably be due to its role as the national referral hospital) and not significant for Paulos and Ras Desta hospitals.

4.2.4. Mode of Travel: Table 14 shows the modes of travel used by 1800 interviewees in the 3 hospitals and 3 health centres studied. Those who walked constituted the highest proportion (41.6%) followed by those who went by taxi (23.3%); 72% of the patients in the 3 health centres and 26.4% of those in the hospitals walked on foot whereas 25.3% and 9.2% of the patients in the 3 hospitals and 3

Table 14: Means of Transport Used by 1800 Polyclinic Outpatients, by Health Facility

Facility		Walking	Bus	Taxi	Bus and Taxi	Private Car		Others	NO Responses	Total
Tekur Anbessa		67	108	113	75	12	12	12	1	400
Paulos		130	85	94	76	6	3	6	0	400
Ras Desta		120	111	123	11	22	3	10	0	400
Talian Legasion		167	10	13	2	1	0	2	5	200
Kolfe		128	24	46	0	1	0	1	0	200
Kebele 18		137	21	31	0	5	0	0	0	200
TOTAL	No	749	359	420	164	47	18	31	12	1800
	%	41.6	20.0	23.3	9.1	2.6	1.0	1.7	0.7	100.0

Source: Structured interviews by the writer.

health centres, respectively, travelled by bus; 27.5% and 15% of the patients in the 3 hospitals and 3 health centres, respectively, went by taxi. Seventy percent and 25.7% of the interviewed patients in the 3 hospitals and 3 health centres, respectively, used bus, taxi and private car. The situation reveals that patients are more prepared to use motorized transport to travel to higher than to lower level health facilities.

4.2.5 Sex: Table 15, prepared from the results of polyclinic outpatient interviews, gives the number and respective proportions of male and female patients in the 3 hospitals and 3 health centres studied. Two hospitals (Tekur Anbessa and Ras Desta) and 1 health

Table 15: Male and Female Patients in the 3 Hospitals and 3 Health Centres.

	MALE		FEMALE		TOTAL	
Facility	No.	%	No.	%	No.	%
Tekur Anbessa Hospital	254	63.5	146	36.5	400	100.0
Paulos Hospital	170	42.5	230	57.5	400	100.0
Ras Desta Hospital	212	53.0	188	47.0	400	100.0
Talian Legasion Health Centre	59	29.5	141	70.5	200	100.0
Kolfe Health Centre	99	49.5	101	50.5	200	100.0
Kebele 18 Health Centre	111	55.5	89	45.5	200	100.0

Source: Structured interviews by the writer.

centre (Kebele 18) served more males than females and the reverse holds for Paulos hospitals and 2 health centres (Talian Legasion and Kolfe). The chi-square results (Table 16) for the differences between distance (Addis Ababa and rural areas) and sex for the 3 hospitals show that the values are significant for Tekur Anbessa

and Paulos hospitals. The null hypothesis that sex is independent of distance is accepted for Ras Desta hospital. Since no conclusion can be drawn from these results, further investigation is suggested in this area.

Table 16: Sex and Distance Relationships for 1503 polyclinic outpatients in 3 hospitals

Facility	Sex	Addis Ababa	Other Regions	X^2	Significant
Tekur Anbessa	Male	112	129	6.03	0.025
	Female	80	54		
Paulos	Male	74	93	10.09	0.005
	Female	132	66		
Ras Desta	Male	138	66	0.36	0.750
	Female	129	54		

Source: Structured interviews by the writer.

4.2.6 Type of Illness: Different types of illnesses were reported by polyclinic interviewees in the 3 hospitals and 3 health centres studied of which 4 major categories were selected as the common ones: (1) noninfections diseases including diabetes, blood pressure, heart attack. (2) diarrhoea and other abdominal problems, (3) various conditions on head and neck and (4) all coughs. Table 17 shows the total number of patients under these categories and the

Table 17: Total number and proportion of patients for 4 major types of illnesses in the 3 hospitals and 3 health centres.

TYPE OF ILLNESS									
Non-infections		Diarrhoea and....		Head and Neck		All Coughs		TOTAL	
No.	%	No.	%	No.	%	No.	%	No.	%
302	16.8	375	20.8	449	24.9	147	8.2	1273	70.7

Source: Structured interviews by the writer.

proportion from the total outpatients interviewed (1800) in 3 hospitals (Tekur Anbessa, Paulos and Ras Desta) and 3 health centres (Talian Legasion, Kebele 18 and Kolfe). Out of the total 1800 patients interviewed, 1273 or 70.7% responded in one or the other of the 4 categories of illnesses indicated. Those who complained various types of head and neck problems accounted for the highest proportion, 24.9% of the total followed by diarrhoea and other abdominal problems, 20.8%. The highest number of head and neck complaints were reported in Ras Desta (181 patients) and Paulos (134) patients. The chi-square values for the differences in the proportions by distance (Addis Ababa and rural areas) for the 5 types of illness are given in Table 18. The results show that the

Table 18: Type of illness and distance relationships for 3 hospitals

Facility (Hospi)	Regions	TYPE OF ILLNESS: Non-Infections	All Fevers	Diarrhoea and...	All Coughs	Conditions on head..	X^2	Sig.
Tekur Anbessa	Addis Ababa	39	1	42	13	21	5.42	0.250
	Other Regions	30	4	38	13	32		
Paulos	Addis Ababa	44	3	47	7	61	11.50	0.025
	Other Regions	25	0	44	2	70		
Ras Desta	Addis Ababa	45	1	53	12	107	15.09	0.005
	Other Regions	10	1	18	1	71		

Source: Structured interviews by the writer.

differences are significant for Paulos and Ras Desta hospitals and not significant for Tekur Anbessa hospital. Further study is required in this area as well before any conclusion can be made.

4.2.7. Length of Illness: In a developing country like Ethiopia where modern health facilities are not easily accessible and the perceived causes of illness are mostly unscientific, the duration of time between start of illness and treatment may be interesting and worth examining. Table 19 shows the length of time between start of illness and the date of interview as reported by 1800

Table 19: Length of time between start of illness and date of interview as reported by 1800 polyclinic outpatients in 3 hospitals and 3 health centres.

Facility	Less than 7 days		7 days-less than 1 month		1 month to less than 1 year		1 year plus		Don't know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Tekur Anbessa	31	7.8	44	11.0	88	22.0	235	58.7	2	0.5	400	100.0
Paulos	10	2.5	38	9.5	148	37.0	199	49.7	.5	1.3	400	100.0
Ras Desta	58	14.5	60	15.0	100	25.0	181	45.2	1	0.3	400	100.0
Talian Legasion	68	34.0	48	24.0	32	16.0	51	25.5	1	0.5	200	100.0
Kolfe	45	22.5	66	33.0	66	33.0	20	10.0	3	1.5	200	100.0
Kebele 18	89	44.5	55	27.5	34	17.0	16	8.0	6	3.0	200	100.0
TOTAL	301	16.7	311	17.3	468	26.0	702	39.0	18	1.0	1800	100.0

Source: Structure interviews by the writer.

interviewees in the 3 hospitals and 3 health centres. The totals show that both the number and proportions of patients increased with increasing length of illness. The proportion of patients going with a duration of 1 year or more was high (39.0% of the total). Only 16.7% said that they had been ill for less than 7 days. The proportion of patients with shorter period of illness was higher in the health centres than in the hospitals and the reverse holds for patients with longer period of illness. This implies that patients travelled to the health centres for minor illnesses like cough and fever and those who travelled to the hospitals were with relatively serious illnesses who could not obtain the necessary treatment at lower level health institutions. The chi-square test was used to examine the differences in the proportions by distance (Addis Ababa and the rural areas) for length of illness obtained from interviews in the 3 hospitals studied (Table 20). All the values obtained are

Table 20: Number of patients by distance (Addis Ababa and other regions) and length of illness for 3 hospitals.

Hospital	Region	Length of Illness				X^2	Sig.
		Less than 7 days	7 days to less than 1 month	1 month to less than 1 year	1 year plus		
Tekur Anbessa	Addis Ababa	26	29	40	97		
	Other Regions	3	11	40	128	24.30	0.001
Paulos	Addis Ababa	9	28	75	70		
	Other Regions	1	9	65	105	13.86	0.005
Ras Desta	Addis Ababa	48	50	65	103		
	Other Regions	6	10	33	73	24.90	0.001

Source: Structured interviews by the writer.

significant showing that duration of illness was significantly shorter for Addis Ababa patients than those from other regions.

4.2.8. Payment Status: Polyclinic outpatients in the 3 hospitals and 3 health centres were asked about their payment status, i.e., whether they were free patients, full paying, credit or half paying. The 2 most commonly reported payment classes, full paying and free patients, are shown in Table 21. Almost all the patients in the health centres were full paying with proportions ranging from 89%

Table 21: Full paying and free patients among 1800 patients of the 6 facilities.

FACILITY	PAYMENTS STATUS				TOTAL*	
	Full Paying		Free Patients			
	No.	%	No.	%	No.	%
Tekur Anbessa Hospital	151	37.8	155	38.8	400	100.0
Paulos Hospital	172	43.0	198	49.5	400	100.0
Ras Desta Hospital	298	74.5	66	16.5	400	100.0
Talian Legasion Health Centre	191	95.5	7	3.5	200	100.0
Kolfe Health Centre	178	89.0	4	2.0	200	100.0
Kebele 18 Health Centre	197	98.5	0	0.0	200	100.0
TOTAL	1187	65.9	430	23.9	1800	100.0

Source: Structured interviews by the writer.

* Includes credit and half paying patients.

to 98.5%. More free patients were treated in the hospitals. It appears that because of the higher treatment costs involved in the hospitals than in the health centres, hospital patients try to obtain free letters from mass or government organizations. An

attempt was made for the 3 hospitals to see if there were any difference between distance (Addis Ababa and rural areas) and payment status (full paying or free patients). The chi-square results show that the number of free patients from the other administrative regions was significantly higher ($P<0.001$) than from Addis Ababa for Tekur Anbessa Hospital only.

4.2.9 Actions Taken Before Treatment: Patients were asked if they had done anything about their illness prior to coming to the health institutions they were being treated, i.e., whether they were treated before or not (Table 22). Only 8.3% of all the patients interviewed used traditional medicine and 49.2% said they used

Table 22: Type of previous treatment from Addis Ababa and other regions for the 6 health institutions combined.

Traditional				Modern				Modern and Traditional				Not Treated				TOTAL	
Addis Ababa		Other Regions		Addis Ababa		Other Regions		Addis Ababa		Other Regions		Addis Ababa		Other Region			
No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
98	5.6	47	2.7	529	30.4	373	17.5	58	3.3	41	2.3	511	29.3	132	7.6	1743	100.0

Source: Structured interviews by the writer.

modern medicine. Those who were not treated before accounted for 36.9% of the patients interviewed. The lower proportion of patients for traditional medicine and higher proportion for modern medicine may reflect that modern medicine is more accessable in Addis Ababa than traditional medicine. Only 8.6% of the patients from the rural areas and 8.2% of those from A.A. said that they used traditional medicine;

44.2% of the patients from Addis Ababa and 59.8% of those from the rural areas used modern medicine;42.7% of the patients interviewed in Addis Ababa said that they were not treated before and 24.1% of those from the rural areas did not get any prior treatment.

4.2.10 Target Areas for the Health Centres: Clearly defined target areas may facilitate the utilisation and delivery of health service in Addis Ababa. There are no specific target areas assigned, however, for polyclinic outpatients in Kebele 18 and Kolfe health centres. The target area for Talian Legasion Health Centre is Keftegna 12. However, since the target area policy was not strictly implemented, the health centre served patients from other part of the city as well as from the other administrative regions. (Fig.5).

CHAPTER 5

SICK CHILDREN

This chapter examines the utilisation patterns of a total of 53,094 sick children (under 5 years of age) inpatients and first visit outpatients in 2 paediatric hospitals (Ethio-Swedish and Yekatit-12) and 3 health stations (Gulele, Etege Mesk and Lideta). They include 2011 inpatients in Ethio-Swedish Hospital and 41,430 and 9653 outpatients in the 2 hospitals and 3 health stations, respectively. For Ethio-Swedish Hospital and the 3 health stations the 1978 E.C., and for Yekatit-12 Paediatric Hospital that of the 1977 E.C. statistics are used. Also analysed are the results of structured interviews among the mothers of 1400 sick children in Ethio-Swedish Hospital and 5 health stations (Gulele, Etege Mesk, Lideta, Addis Ketema and Beletshchew).

5.1. Catchment Areas and Per Capita Utilisation

5.1.1. Outpatients: Figures 10-14 show the per capita utilisation rates by kebele and catchment areas for the sick children outpatients of the 2 hospitals and 3 health stations.

The hospitals: The per capita utilisation rates for Ethio-Swedish Hospital were high for most kebele of the city (8 or more visits per 100 children under 5 years of age, referred to here after in this chapter as "population"), Fig. 10. Several kebele in a number of keftegna had rates of 16 or more visits per 100 population. The rates are, however, lower (0.5 to 3.9) for kebele in the north eastern part of the city which may be attributed to the location of Yekatit-12 Paediatric Hospital in this part of the city. Yekatit-12 Hospital attracted patients from all the kebele of the city (Fig. 11). Kebele

in the north-eastern part of the city, had the highest rates for Yekatit-12 Hospital (8 or more visits per 100 population). Almost all the kebele in keftegna 13 (10 of the 11 kebele), where Yekatit-12 Hospital is located, had rates of 16 or more per 100 population. The rates generally declined toward the southern and western parts of the city where the influence of Ethio-Swedish Hospital was stronger. Although both hospitals served patients from all the kebele of the city, the volume of patients and the per capita utilisation rates by kebele for Ethio-Swedish Hospital indicated that this hospital had a larger catchment area than that of Yekatit-12 Paediatric Hospital. The area of influence of Yekatit-12 Hospital was confined mainly to the keftegna of the northeastern part of the city whereas Ethio-Swedish Hospital had a predominant position over the rest of the city excluding the keftegna closer to Yekatit-12 Paediatric Hospital (Figs. 10 and 11). The steeper distance decay gradient for Yekatit-12 Hospital than for Ethio-Swedish-Hospital (Fig. 15) further confirms that Ethio-Swedish Hospital had a larger catchment area than that of Yekatit-12 Paediatric Hospital.

The Health Stations: The area of influence of Gulele Health Station (Fig. 12) was restricted to the northern-most part of the city serving patients mainly from keftegna 8, 9 and 10. Kebele nearer to the health station in the 3 keftegna had the highest per capita utilisation rates (8-15.9 visits per 100 population). The rates declined outwards with distance until they became almost nil for the rest of the kebele in the city.

Etege Mesk Health Station attracted patients mainly from kebele in keftegna 1,13,14 and 15 (Fig. 13). The sharp falls in utilisation rates immediately to the west of the health station (west of Keftegna 14) may be due to the location of Ethio-Swedish Hospital in Keftegna 3. The highest utilisation rates (16 or more per 100 population) were confined to the kebele surrounding the health station mainly in Keftegna 14. The rates gradually declined with distance from the facility and became zero with the exception of the kebele with lower rates (0.4-1.9) to the south and south-east of the city (Fig. 13).

Lideta Health station located in Keftegna 22, Kebele 6, served patients mainly from the keftegna of the south-western part of the city (Fig. 14). The highest utilisation rates (16 or more per 100 population) were restricted mainly to the kebele in Keftegna 22. The rates are also high (8 to 15.9 per 100 population) to the north of the facility in Keftegna 4 and to the south-west upto the limit of the city's built up area. These rates decline to the north, north-east and south-east gradually becoming nil for most kebele of the city.

If we use the number of kebele served as a measure for size of catchment area within Addis Ababa, Lideta Health station had the largest catchment area (85 kebele) of the 3 health stations followed by Gulele (69 kebele) and Etege Mesk (63 kebele) health stations. The distance decay gradients in Fig. 15 reveal that Lideta and Gulele health stations had the largest and smallest catchment areas of the 3 health stations, respectively.

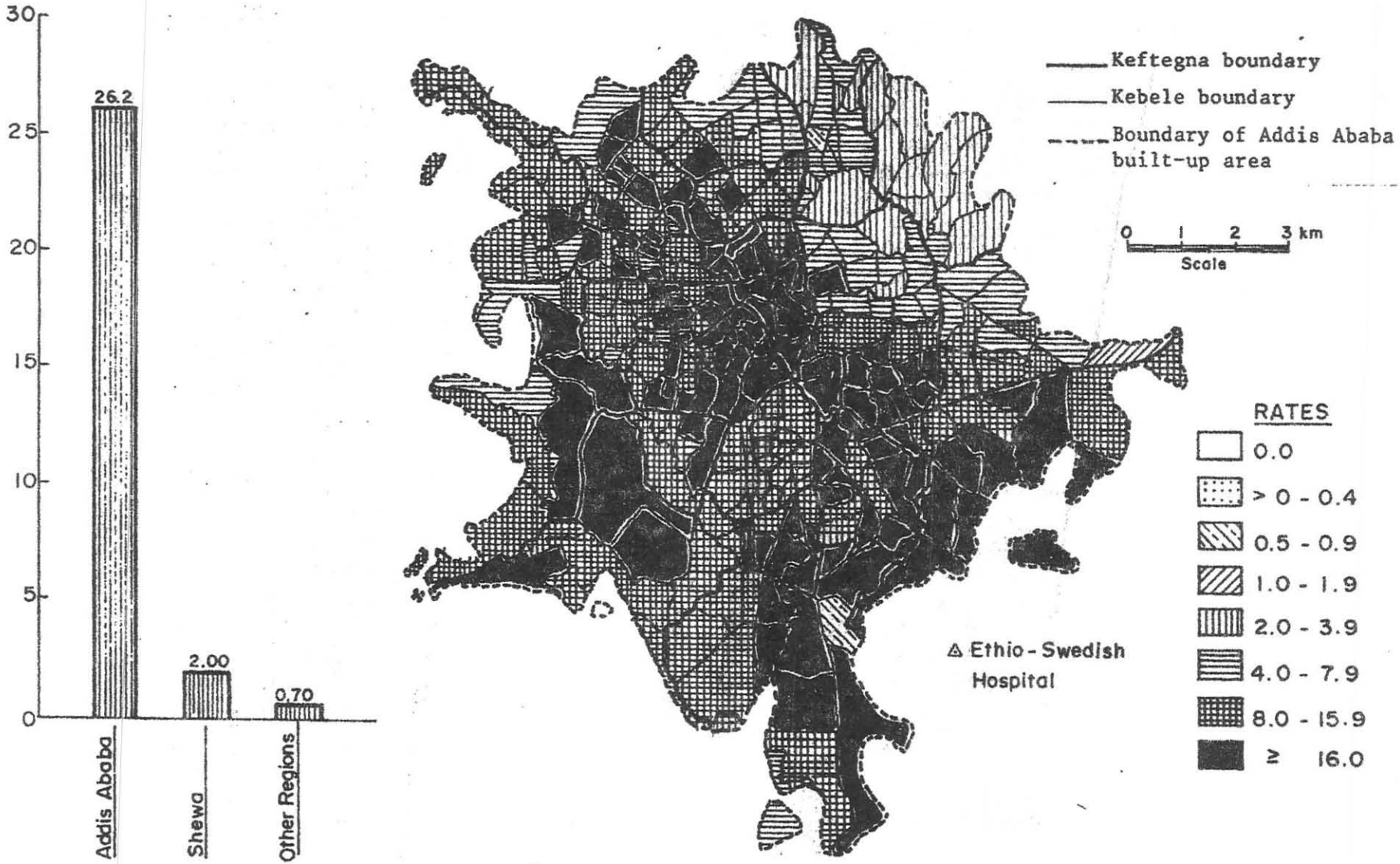
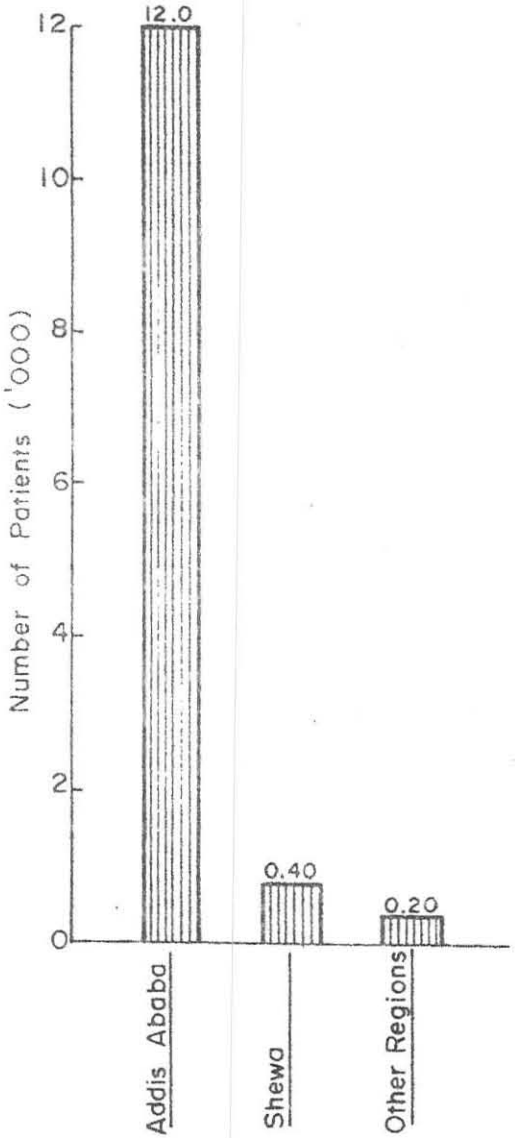


Figure 10 Per Capita Utilisation Rates by Kebele for Child Health Outpatients of Ethio-Swedish Paediatric Hospital - 1978 E.C.



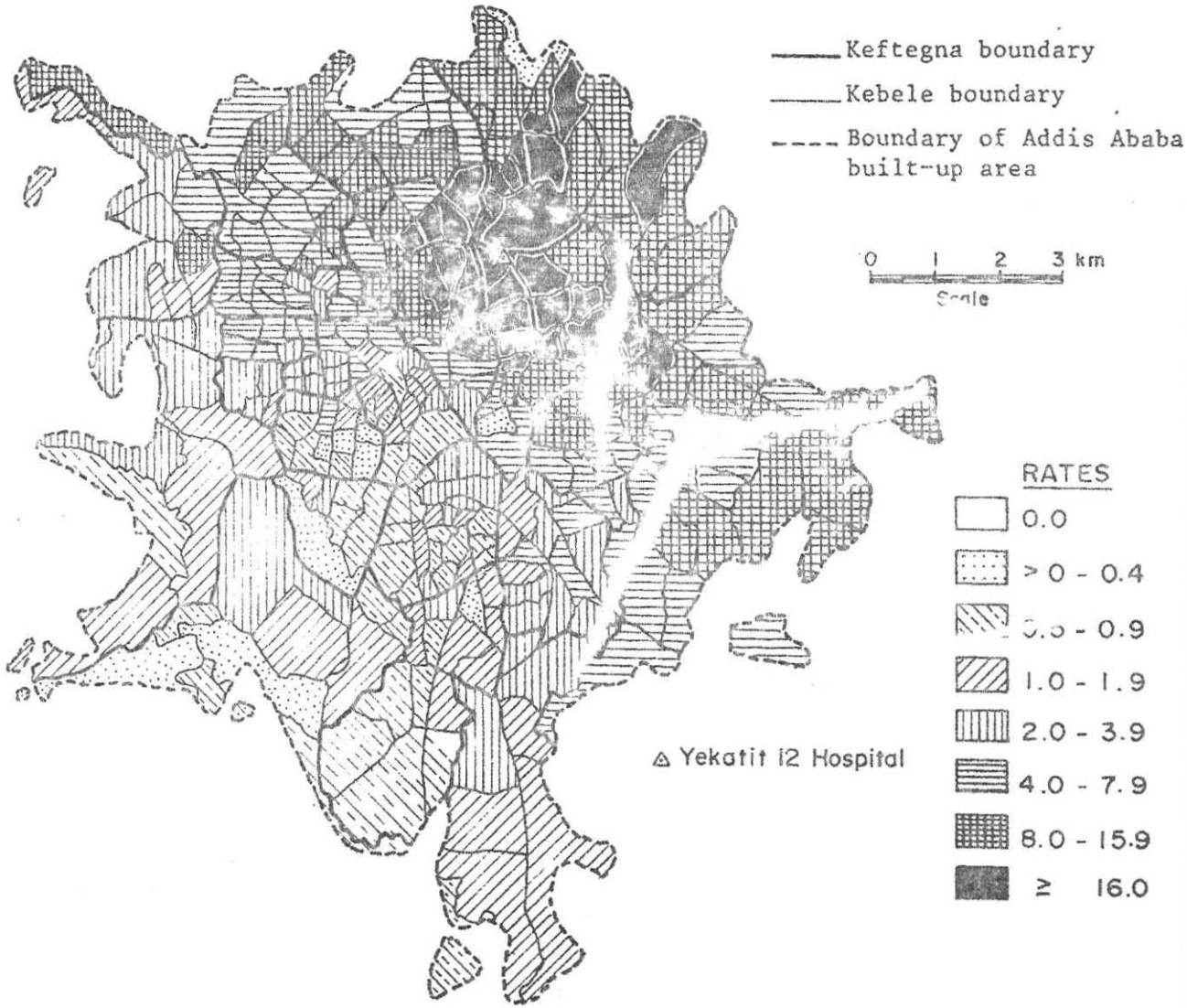


Figure 11 Per Capita Utilisation Rates by Kebele for Child Health Outpatients of Yekatit-12 Paediatric Hospital - 1977 E.C.

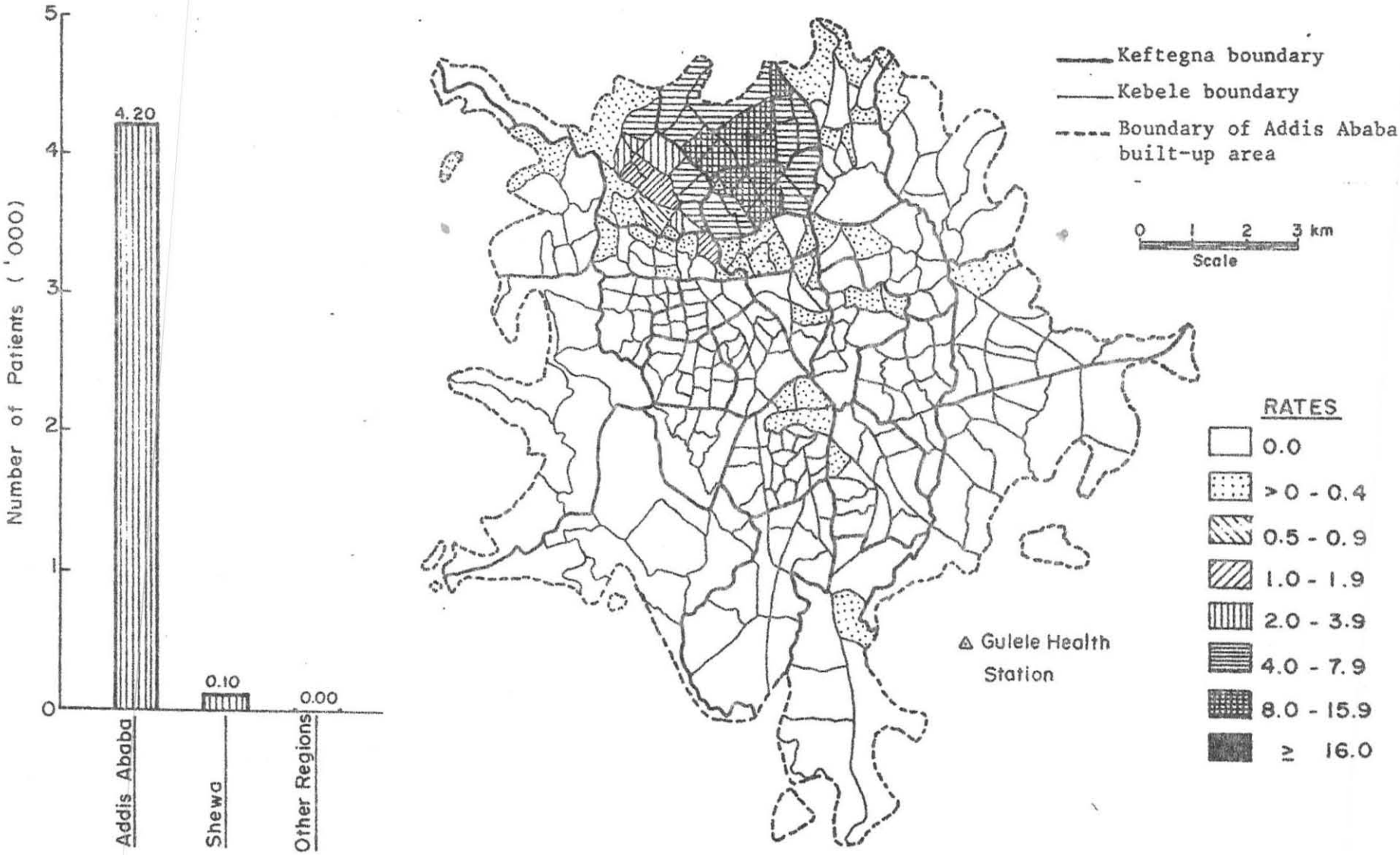


Figure 12 Per Capita Utilisation Rates by Kebele for Child Health Outpatients of Gulele Health Station - 1978 E.C.

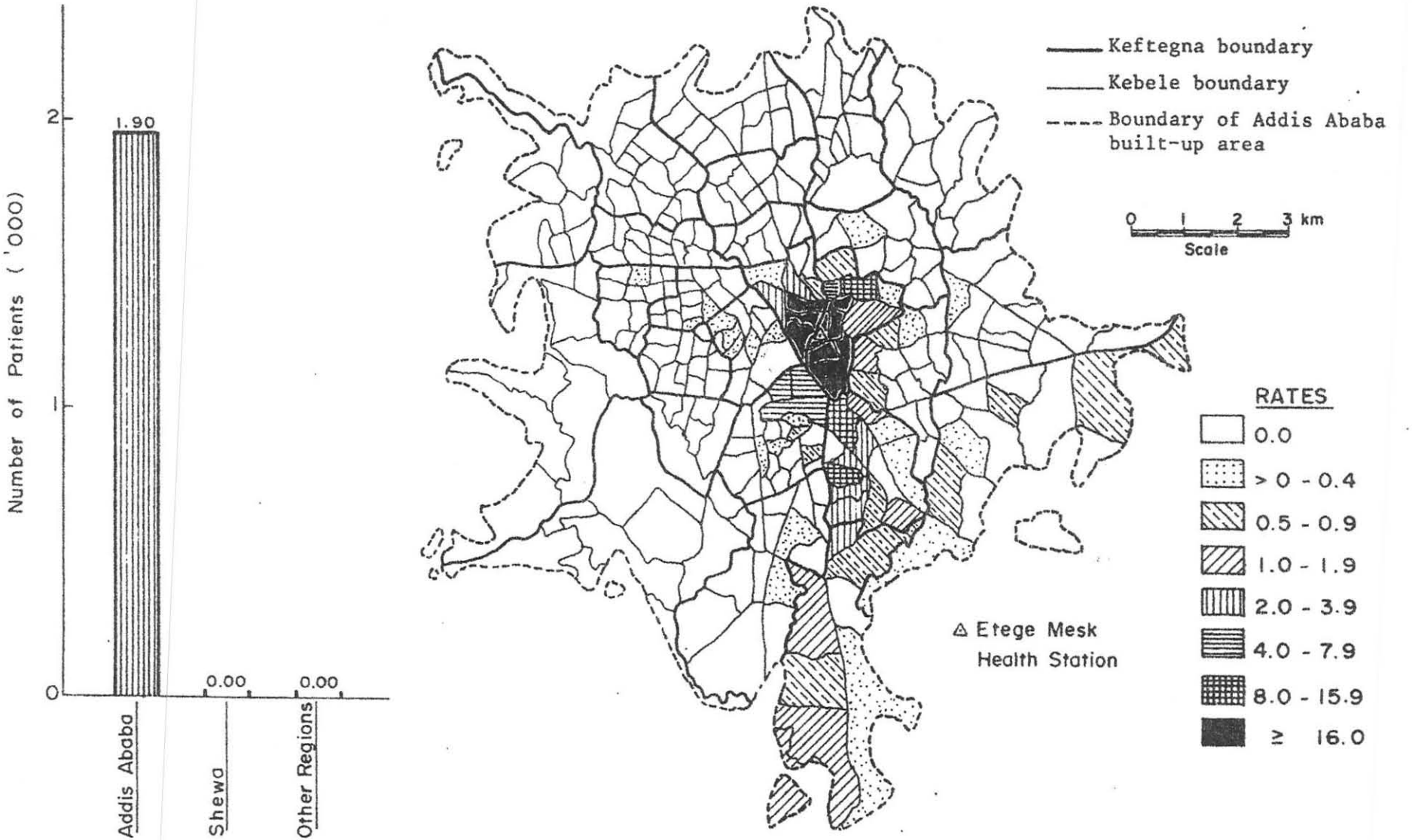


Figure 13 Per Capita Utilisation Rates by Kebele for Child Health Outpatients of Etege Mesk Health Station - 1978 E.C.

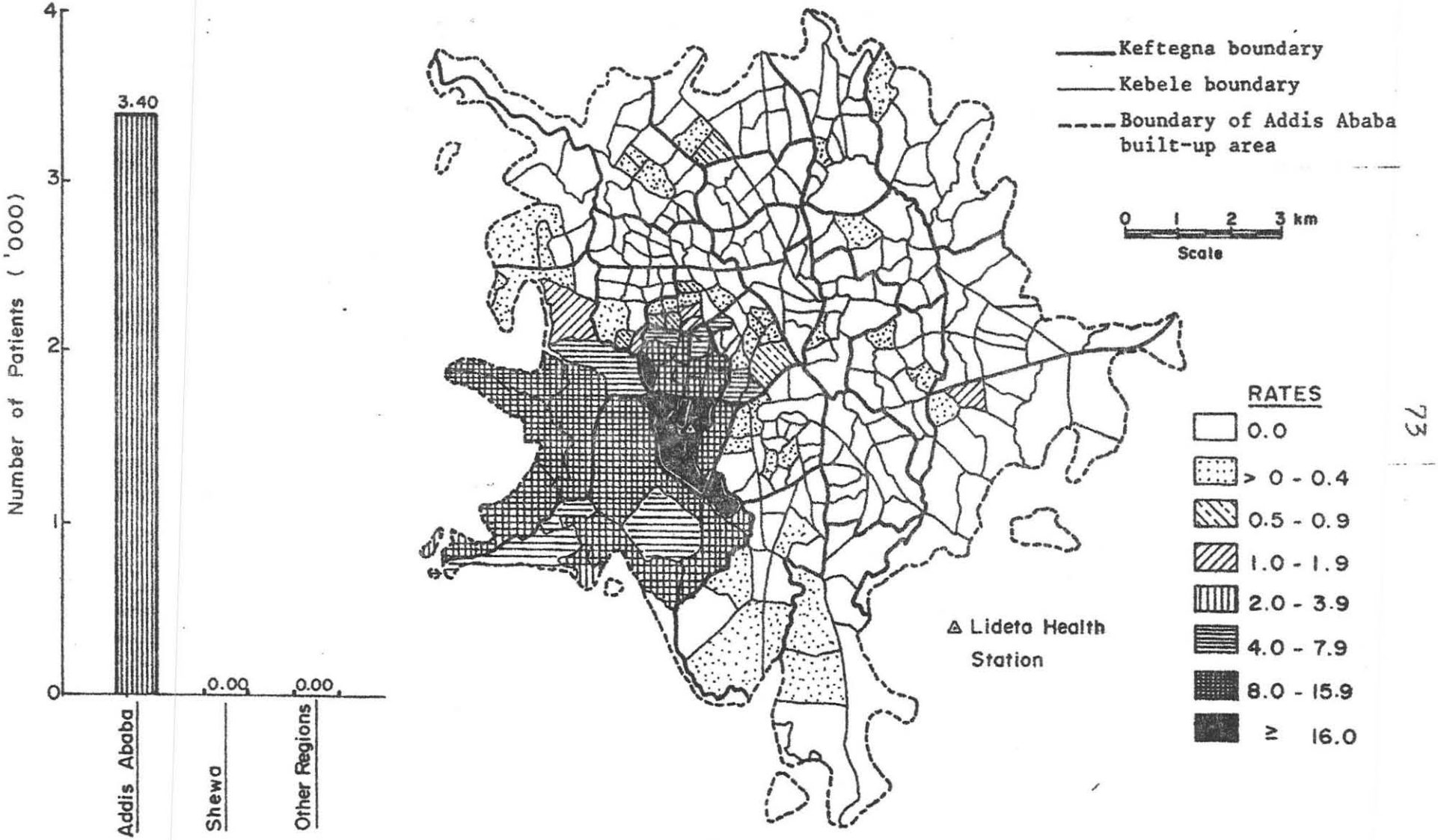


Figure 14. Per Capita Utilisation Rates by Kebele for Child Health Outpatients of Lideta Health Station - 1978 E.C.

A comparison of the catchment areas of the 2 hospitals and 3 health stations within Addis Ababa reveals that the hospitals had larger areas of influence than the health stations. Ethio-Swedish and Yekatit-12 paediatric hospitals were visited by patients from all the kebele in the city and the health stations treated patients from only some kebele (Lideta-85, Gulele-69 - and Etege Mesk-63) of nearby keftegna (Figs. 10-14).

The number and proportion of patients from Addis Ababa, Shewa and the other administrative regions for the 2 paediatric hospitals and 3 health stations reveal 3 facts:(1) the hospitals had larger catchment areas than the health stations, (2) Ethio-Swedish Hospital had a larger area of influence than Yekatit-12 Paediatric Hospital and (3) Gulele Health station served more patients from Addis Ababa, Shewa and the other administrative regions than Lideta and Etege Mesk health stations. Table 23 shows the distribution of sick children

Table 23: Number and Proportion of Sick Children Outpatients from Addis Ababa, Shewa and the Other Regions, by Facility, 1978 E.C.

	Addis Ababa		Shewa		Other Regions		TOTAL	
FACILITY	No.	%	No.	%	No.	%	No.	%
Ethio-Swedish	26,244	90,8	1,949	6.8	698	2.4	28,891	100.0
Yekatit-12	12,025	96.9	368	2.9	146	1.2	12,539	100.0
Gulele	4,119	98.2	76	1.8	1	0.0	4,296	100.0
Etege Mesk	1,870	99.4	11	0.6	0	0.0	1,881	100.0
Lideta	3,443	99.1	33	0.9	0	0.0	3,476	100.0
TOTAL	47,801	93.6	2,437	4.8	845	1.6	51,083	100.0

Source: Sick children outpatient registration books, 1978 E.C.

outpatients from Addis Ababa, Shewa and the other administrative regions for the 2 hospitals and 3 health stations. Although the proportions of patients from Addis Ababa were very high for all the facilities, ranging between 90.8% (Ethio-Swedish hospital) and 99.4% (Etege Mesk Health Station), both the number and proportion of patients from Shewa and the other administrative regions were much smaller for the health stations than for the hospitals. The proportion of patients from Shewa was less than 3% and nil from the other administrative regions, indicating larger areas of influence for the hospitals than for the health stations. The proportions of patients from Shewa (6.8%) and the other administrative regions (2.4%) for Ethio-Swedish Hospital were larger than those of Yekatit-12 Paediatric Hospital, 2.9% (Shewa) and 1.2% (other regions) showing a larger zone of influence for Ethio-Swedish Hospital than for Yekatit-12 Paediatric Hospital. The number of patients from Shewa (76) and the other administrative regions (1) for Gulele Health Station revealed that this health station had the largest area of influence of the 3 health stations, followed by Lideta and Etege Mesk health stations. All the facilities served more patients from Shewa than from the other administrative regions combined. No patient came from the other administrative regions to Etege Mesk and Lideta health stations and only 1 patient was treated in Gulele Health Station. For the hospitals, both the number and proportion of patients from Shewa were larger than from the other administrative regions combined.

5.1.2. Inpatients in Ethio-Swedish Hospital: A total of 2011 inpatients were treated in Ethio-Swedish Hospital in 1978 E.C. About three-quarters (77.2%) of the total patients came from Addis Ababa; 14.1% from Shewa and 5.7% from the other administrative regions (Table 24).

Table 24: Number and Proportion of Inpatients for Ethio-Swedish Hospital in Addis Ababa, Shewa and the Other Regions, 1978 E.C.

Addis Ababa		Shewa		Other Regions		No Address		TOTAL	
No.	%	No.	%	No.	%	No.	%	No.	%
1553	77.2	283	14.1	114	5.7	61	3.2	2011	100.0

Source: Patient Registration Books.

The distribution of sick children outpatients for Ethio-Swedish Hospital shows that 90.8% came from Addis Ababa, 6.8% from Shewa and 2.4% from the other administrative regions. The corresponding outpatient proportions for Yekatit-12 Paediatric Hospital were 96.9% and 1.2%, respectively (Table 23). A comparison of the distribution of the inpatients in Ethio-Swedish Hospital (Table 24) with those of the the outpatients in Ethio-Swedish and Yekatit-12 Paediatric Hospitals (Table 23) reveals that the inpatient catchment area for Ethio-Swedish Hospital is larger than the outpatient catchment areas of Ethio-Swedish and Yekatit-12 Paediatric Hospitals with 77.2%, 14.1% and 5.7% of the patients coming from Addis Ababa, Shewa and the other administrative regions, respectively. The larger area of influence for Ethio-Swedish Hospital inpatients than for the outpatients of Ethio-Swedish and Yekatit-12 Paediatric Hospitals

reflects the efforts made by patients to travel further to specialists and specialized health institutions for illnesses that may require admission to the hospital.

5.2. Factors Related to thw Utilisation of the Health Facilities

5.2.1 Physical Distance: This study reveals the inverse relationship that existed between physical distance and the number of sick children who came to the 2 hospitals and 3 health stations for treatment. The effect of distance on the utilisation of the services provided by these health institutions can be explained by Table 25 which shows consistent declines in the per capita utilisation

Table 25: Per Capita utilisation rates for distance rings of 1 km intervals for the 2 hospitals and 3 health stations, 1978 E.C.

	Number of Patients per 100 Population				
Distance Rings	Ethio-Swedish Hospital	Yekatit 12 Hospital	Gulele Health Station	Etege Mesk Health Station	Lideta Health Station
0-1	30.55	26.78	25.72	17.02	21.09
1-2	19.48	17.24	8.88	0.90	3.17
2-3	15.78	8.15	1.17	0.18	0.94
3-4	13.18	4.85	0.04	0.12	0.70
4-5	13.06	3.55	0.03	0.11	0.18
5-6	12.48	3.13	0.02	0.08	0.09
6-7	12.36	2.76			
7-8	11.30	1.56			
8-9	11.23	0.98			
9-10		0.96			
10-11		0.91			

Source: Patient registration books.

rate with increasing distance. The rates were highest for all the facilities within the 0-1 km distance ring, ranging between 17.0 (Etege Mesk Health Station) and 30.6 (Ethio-Swedish Hospital). These rates dropped sharply after the 0-1 km distance band for the 3 health stations, becoming less than 0.1 at 5-6 km distance. The declines in the rates for the hospitals were gradual particularly for Ethio-Swedish Hospital with 11.2 in the 8-9 km distance ring.

This pattern may partly be due to the high number of patients (the numerator) treated in 1978 E.C., more than 26,000, as compared to that of Yekatit 12 Paediatric Hospital, about 12,000 (Table 23). Gulele and Lideta health stations are located in the northern and sourhwestern peripheral built-up areas of the city, respectively, which have lower population densities. Etege Mesk Health Station is located in the heart of the city with higher population density and more other health facilities acting as intervening opportunities. Moreover, the number of children treated in Etege Mesk Health Station in 1978 E.C. was lower than those of Gulele and Lideta health stations (Table 23). As a result the per capita utilisation rates for Etege Mesk Health Station sharply declined from 17.0 within the 0-1 km distance ring to 0.9 in the 1-2 km strip. This phenomenon does not exist for Gulele and Lideta health stations. The rates for the same distance ring (1-2 km) were 8.9 for Gulele and 3.2 for Lideta.

The regression equations and distance decay gradients (Fig. 15) further reveal the statistically significant inverse relationship between distance travelled and the utilisation of the 2 hospitals and 3 health stations studied. The correlation coefficients (r),

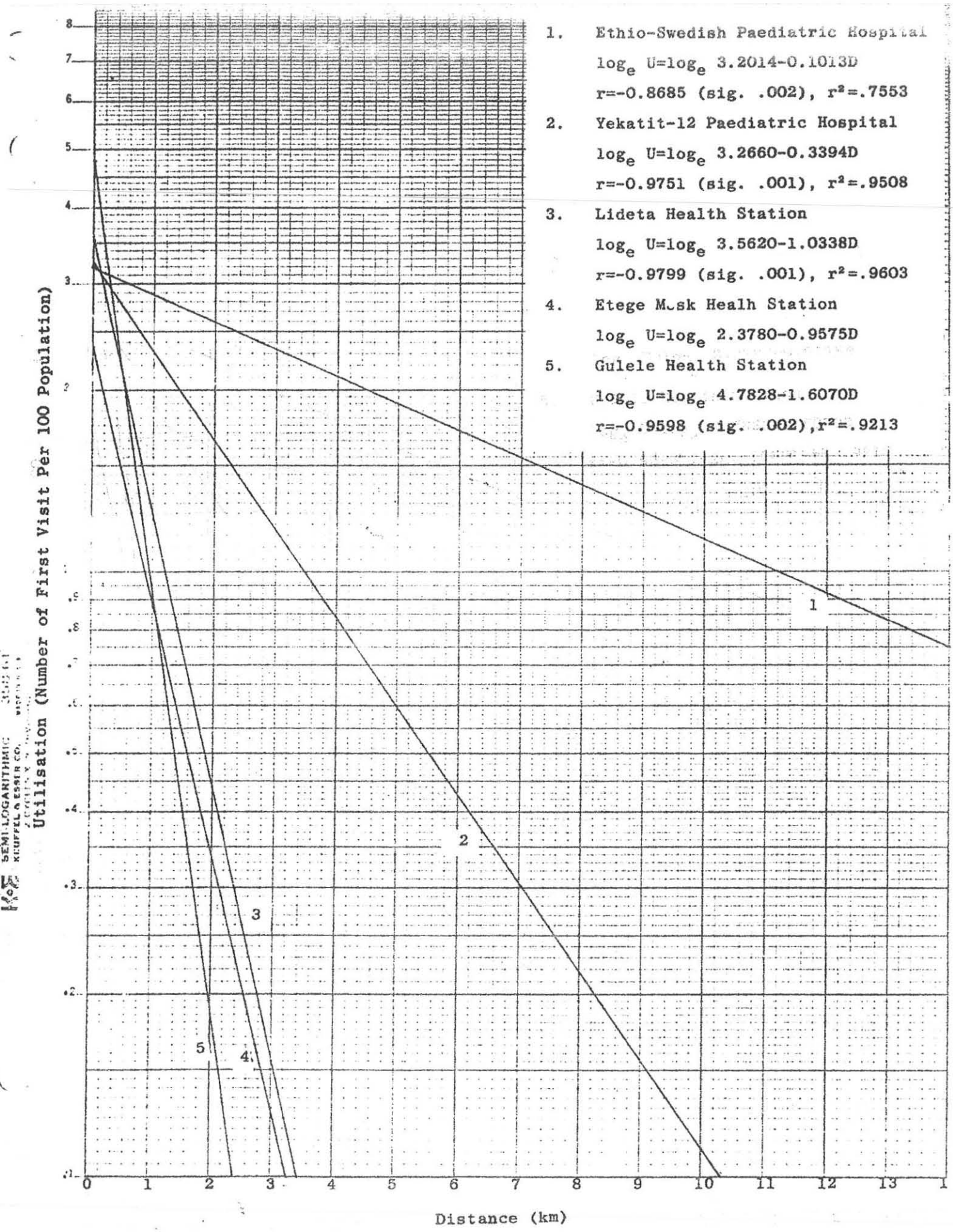


Figure 15. Distance and Utilisation Relationships for Sick Children in 2 Hospitals and 3 Health Stations - 1978 E.C.

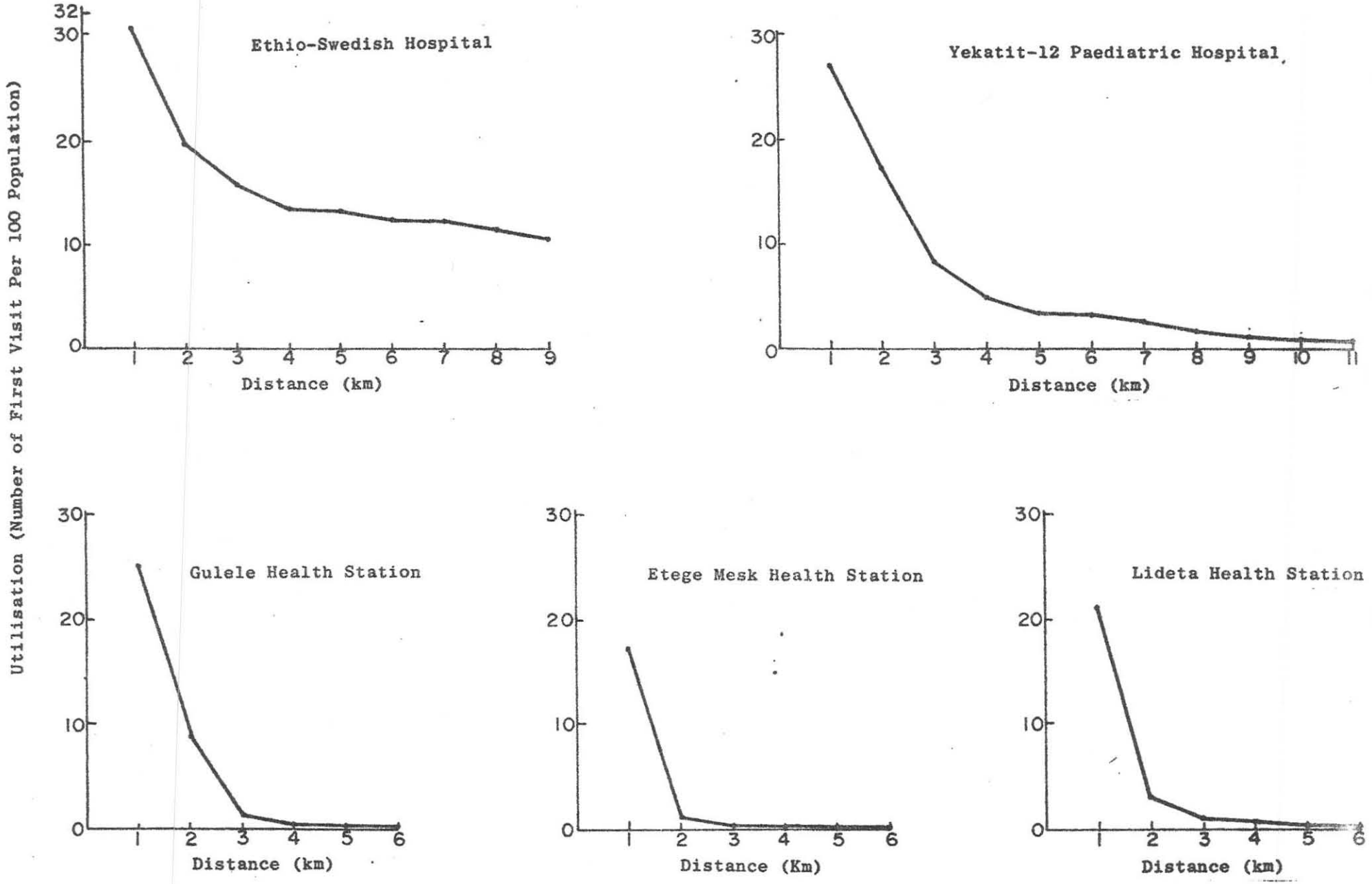


Fig. 16 Distance and Per Capita Utilisation Relationships for Sick Children - 1978 E.C.

ranging between -0.8685 and -0.9794, reflect the strong relationship between distance and utilisation. The coefficients of determination (r^2) show that between 75% to 96% of the variation in utilisation of the 2 hospitals and 3 health stations is explained by distance. Figure 16 shows the actual relationship between distance and per capita utilisation rates for the 2 hospitals and 3 health stations. The utilisation rates decline with distance for all the facilities being more preciptious over short distances for the health stations than for the hospitals.

5.2.2 Size of Facility: In 1976 E.C., Ethio-Swedish Hospital had 15 physicians, 30 nurses, 10 lab. technicians, 19 health assistants, 1 pharmacist and 113 beds. Yekatit-12 Paediatric Hospital had 4 physicians, 3 MCH and paediatric nurses and 52 beds. The number of nurses in the 5 health stations studied (Addis Ketema, Beletshacew, Lideta, Gulele and Etege Mesk) ranged between 4 (Addis Ketema) and 11 (Gulele). Gulele Health Station had 2 medical doctors and/or health officers. Addis Ketema, Beletshachew and Lideta had 1 medical doctor or health officer each. Etege Mesk Health Station had no medical doctor or health officer (MOH, 1986a:278-285). Because of the differences in the number of physicians, nurses, beds and other health personnel, Ethio-Swedish Hospital served more patients than Yekatit-12 Paediatric Hospital. Similarly, because of the differences in the number of staff, specialists and facilities, Ethio-Swedish and Yekatit-12 Paediatric Hospitals served more patients than the health stations (Table 23) indicating that size of facility and specialisation of service was one of the major factors in utilisation.

5.2.3. Location of Health Facilities: The location of the health facilities within the city and the nature of transport facilities and network played a role in the utilisation of the 2 hospitals and 3 health stations. The location of Ethio-Swedish Hospital right in the centre of the city (Fig. 10) encouraged patients to flock to the hospital from all the kebele of the city. The location of the hospital is favoured by a relatively reliable public transport. Yekatit-12 Paediatric Hospital is located further to the north-east in the city and thus relatively far from patients in the southern and south-western parts of Addis Ababa. However, since its location is at point where roads from different directions converge, the hospital received patients from all the kebele of the city, although higher per capita utilisation rates were confined to kebele of nearby keftegna (Fig.11). Gulele and Lideta health stations are located in the northern and south-western parts of the city, respectively. The location of Etege Mesk Health Station is almost in the centre of the city. Only this health station is as conviently located, as far as transport facilities are concerned, as Ethio-Swedish and Yekatit-12 paediatric hospitals. Besides, all the 3 health stations are lower level health facilities. As a result, the utilisation of their services was restricted mainly to kebele of nearby keftegna.

5.2.4. Referral of Patients: Sick children outpatient interviews involving 1400 patients in Ethio-Swedish Hospital and 5 health stations (Gulele, Etege Mesk, Lideta, Addis Ketema, and Beletshacew) revealed that referral of patients was seldom practiced, particularly

in the health stations. Table 26 shows the number of patients of Ethio-Swedish Hospital and the 5 health stations referred from other health institutions. Out of the total 1400 sick children studied in the 6 health institutions, only 47 (3.4%) were referred and the remaining 1353 (96.6%) were self-referred patients. Out of the total patients interviewed in Addis Ababa, only 29 (2.4%) were referred and the remaining 97.6% were self referred patients. Twenty five of the 29 referred patients in Addis Ababa were sent to Ethio-Swedish Hospital. A total of 93 patients or 6.6% of the total interviewed patients visited the various facilities from other administrative regions including Shewa. Out of those who came from

Table 26: Sick Children Referral Status for Ethio-Swedish Hospital and 5 Health Stations, by Regions.

FACILITY		Addis Ababa		Other Regions		No Address		TOTAL
		Re-ferred	Not re-ferred	Re-ferred	Not re-ferred	Re-ferred	Not re-ferred	
Ethio-Swedish Hospital		25	287	15	54	3	16	400
Addis Ketema Health Station		-	192	-	4	-	4	200
Gulele Health Station		-	189	-	6	-	5	200
Etege Mesk Health Station		-	196	-	-	-	4	200
Lideta Health Station		-	189	-	6	-	5	200
Beletshachew Health Station		4	172	-	8	-	16	200
TOTAL	No.	29	1125	15	78	3	50	1400
	%	2.1	87.5	1.0	5.6	0.2	3.6	100

Source: Structured interviews by the writer.

these regions, 15 patients (16%) were referred, all of them to Ethio-Swedish Hospital. Those who were referred from both Addis Ababa and the other administrative regions to Ethio-Swedish Hospital accounted for 10.8% of the 400 patients interviewed in the hospital of which 25 (6.25%) and 15 (3.75%) came from Addis Ababa and the other administrative regions, respectively. In conclusion, it can be said that referral of patients in the 6 health institutions is unsatisfactory and almost non-existence in the health stations.

5.2.5 Mode of Travel: Mode of travel used by patients to the 6 health institutions studied is another constraint in the utilisation of their services. Table 27 shows the modes of travel used by

Table 27: Modes of transportation used by 1400 patients to travel to the facilities they were being interviewed.

FACILITY		Walking	Bus	Taxi	Bus & Taxi	Private Car	Service	Others	No Response	TOTAL
Ethio-Swedish		64	67	217	3	31	1	9	8	400
Addis Ketema		193	1	2	-	-	-	-	4	200
Gulele		183	7	9	-	1	-	-	-	200
Etege Mesk		191	-	9	-	-	-	-	-	200
Lideta		178	13	8	-	-	1	-	-	200
Beletshachew		95	7	86	-	10	2	-	-	200
TOTAL	No.	904	95	331	3	42	4	9	12	1400
	%	64.6	6.8	23.6	0.2	3.0	0.3	0.6	0.9	100.0

Source: Structured interviews by the writer.

1400 sick children outpatients to reach the facilities they were being interviewed. About 65% of the total patients to the 6 health facilities travelled on foot and 23.6% came by taxi;47.5% to 96.5% of the patients in the health stations came on foot. Sixteen percent, 16.75% and 54.3% of the patients in Ethio-Swedish Hospital travelled on foot, by taxi and by bus, respectively. If we ignore Beletschachew and take the remaining 4 health stations Addis Ketema, Gulele, Lideta and Etege Mesk) and Ethio-Swedish Hospital, we can say that the majority of the patients in the health stations walked on foot and most of the patients in Ethio-Swedish Hospital used motorized transport. This pattern, together with the size of catchment areas, shows that people are willing to travel further to specialized health institutions by using motorized transport than to lower level health institutions.

5.2.6. Sex: An attempt was made to examine the role of sex in the utilisation of the 6 health facilities studied. Table 28 shows the number of interviewed male and female patients served in these

Table 28: Male and Female Sick Children Served in the 6 Health Institutions

	Health Institution							
Sex	Ethio-Swedish	Addis Ketema	Gulele	Etege Mesk	Lideta	Belet-shachew	X^2	Sig.
Male	199	106	99	93	96	95	2.20	0.900
Female	201	94	101	107	104	105		
TOTAL	400	200	200	200	200	200		

Source: Structured interviews by the writer.

facilities. With the exception of Addis Ketema Health Station, there were more female patients than male patients in all the remaining 5 health institutions. The differences are relatively larger for Etege Mesk, Lideta, Addis Ketema and Beletschachew health stations than for Ethio-Swedish Hospital and Gulele Health Station. Are these differences due to chance?. The null hypothesis states that there is no difference between the observed and expected male and female proportions, and whatever the difference may be, it is due to sampling error. With the rejection level set at P less than 0.05, the chi-square test for the 2x6 contingency table with 5 degrees of freedom gives a value of 2.20. This value is significant at 0.900. The null hypothesis is accepted. It means that sex is not a determinant factor in the utilisation of the 6 health institutions studied.

5.2.7 Type of Illness: Parents of sick children were interviewed about the type of illness for which treatment was sought. Five major types of illnesses were reported:

a) Non-infections diseases including heart attack, blood pressure and diabetes.

b) Diarrhoea and other abdominal conditions.

c) Conditions on head and neck including eye, ear, teeth, tonsilitis and headache.

d) All coughs.

e) All fevers.

Table 29 shows the total number and proportions of patients treated under these 5 major categories of illness. The proportions

Table 29: Major types of illness reported for sick children in the 6 health facilities combined.

TYPE OF ILLNESS*												X^2	Sig.
Non-Infection		Diarrhoea and...		Head and Neck		All Coughs		All Fever					
No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
36	2.6	361	25.8	137	9.8	448	320	122	8.7	1104	78.9	524.31	0.001

Source: Structured interviews by the writer.

* Both the number of patients and percentages are out of the total 1400 patients interviewed.

are out of the total 1400 sick children parents interviewed. Thus, 1104 (78.9%) of the total 1400 patients reported that their illnesses belonged to one or the other of the 5 major types of illnesses as classified by the writer. Children who had various types of coughs constituted 32.0% of the total patients interviewed, the highest of all the 5 major categories. Those who contrasted diarrhoea and other abdominal problems accounted for 25.8% of the total patients. The lowest was that of non-infections diseases, 2.6%. The one sample case chi-square test with a value of 524.31 and significant at the 0.001 level reveals that the differences in the number of patients in the various categories of illness are not due to chance.

5.2.8. Duration of Illness: With the view to examining how fast they sought medical care when their children were sick, parents of sick children were interviewed about the duration of illness for which treatment was sought. Table 30 shows the number and proportion of patients who reported in the 4 categories of duration of illness

Table 30: Duration of Illness Reported for 1400 Sick Children, by Facility.

FACILITY	LENGTH OF ILLNESS										TOTAL	
	Less than 7 days		7 days to less than 1 month		1 month to less than 1 year		1 year plus		No response and don't know			
	No	%	No	%	No	%	No	%	No	%	No	%
Ethio-Swedish	106	26.5	68	17.0	90	22.5	86	21.5	50	12.5	400	100.0
Addis Ketema	123	61.5	51	25.5	21	10.5	3	1.5	2	1.0	200	100.0
Gulele	122	61.0	45	22.0	20	10.0	5	2.5	8	4.0	200	100.0
Etege Mesk	86	43.0	68	34.0	41	20.5	5	2.5	0	0.0	200	100.0
Lideta	135	67.5	41	20.5	19	9.5	2	1.0	3	1.5	200	100.0
Belet-shachew	140	70.0	43	20.1	14	7.0	3	1.5	0	0.0	200	100.0
TOTAL	712	50.9	316	22.6	205	14.6	104	7.4	63	4.5	1400	100.0

Source: Structured interviews by the writer.

in the 6 health institutions. About half (50.9%) of the 1400 sick children in the 6 health facilities reported that the duration of their illness was less than 1 month accounted for 73.5% of the total patients interviewed. The proportions of patients ill less than 7 days were higher in different health stations (43% to 70%) and relatively lower in Ethio-Swedish Hospital (26.5%). The proportions of patients who were ill for 1 year or more were highest for Ethio-Swedish Hospital (21.5%) and lowest for the health stations (1% to 2.5%). These patterns indicate that patients visited the hospital for illnesses not cured at lower level health institutions resulting

in longer time between start of illness and treatment. As shown in Table 29, 57.8% of the 1400 patients sought treatment for coughs and diarrhoea. This includes illness requiring urgent treatment. Thus, about half of the total patients (50.9%), having illness of up to 7 days duration (Table 30) is not unexpected.

5.2.9 Actions Taken Before Treatment

Interviewees were asked about the type of treatment used before for the same illness. Only 10.1% (141 patients) of all the 1400 interviewed said that they used traditional medicine and 30.4% (425 patients) reported the use of modern medicine; 58.0% (812 patients) said that they did not have any prior treatment which may probably be related to shorter duration of illness and lack of money for treatment.

5.2.10. Target Areas for the Health Stations: None of the health stations studied strictly adhered to the target area policy formulated by the Ministry of Health. Etege Mesk Health Station, for instance, was assigned to serve patients from Keftegna 2,14,18 and 19. The 1978 E.C. sick children statistics revealed, however, that only 85.8% of the sick children came from within the target area and the remaining 14.2% were from outside the target area. During the same year, Lideta Health Station was expected to treat sick children from Keftegna 3,4,22,23 and 24 only. More than 95.5% of the sick children treated were from within the target area and the rest 4.5% came from places outside the target area.

CHAPTER 6

ANTENTALS AND GYNAECOLOGY PATIENTS

This chapter examines the 1978 E.C. material health care utilisation patterns of a total of 7958 first visit antenatal women in 6 health institutions including 3246 antenatals in 3 health centres (Kebele 18, Talian Legasion and Kolfe) and 4712 in 3 health stations (Gulele, Etege Mesk and Lideta). A total of 16825 gynaecology patients (13,599 out-patients and 3226 inpatients) in Gandhi Hospital are also analysed in this chapter. Also included are the analyses of the results of structured interviews among 1400 antenatals in Gandhi Hospital, 2 health centres (Talian Legasion and Kolfe) and 4 health stations (Addis Ketema, Lideta, Etege Mesk and Gulele) and 200 gynaecology patients in Gandhi Hospital. Gandhi Hospital and Addis Ketema Health Station were not included in the analysis of antenatal statistics since antenatals are not separately registered in Gandhi Hospital and because of time constraint for Addis Ketema Health Station. Kebele 18 Health Centre was excluded from the interviews because of time pressure.

6.1 Per Capita Utilisation and Catchment Areas

6.1.1 Per Capita Utilisation

Antenatals: Figures 18-23 show the per capita utilisation rates and catchment areas for 3 health centres (Kebele 18, Talian Legasion and Kolfe) and 3 health stations (Gulele, Etege Mesk and Lideta) for the 1978 E.C. statistics. Utilisation rates for Kebele 18 Health Centre (Fig. 18), located in Kebele 18, Keftegna 5, are high (4 to less than 8 per 100 female population between the ages of 15-49 years, referred to here after in this chapter as "population")

for 9 kebele in Keftegna 5. Kebele 16 and 18 in Keftegna 5 had the highest rates, 8.8 and 8.3 per 100 population, respectively. The rates gradually declined with distance ranging between greater than 0 and less than 8 per 100 population and become zero for most kebele of the city. The per capita utilisation rates for Talian Legasion Health Centre (Fig. 19) ranged between 2 and less than 8 per 100 population for kebele in Keftegna 12. The highest rates, 4 to less than 8 per 100 population, were confined to only 5 kebele in Keftegna 12, including Kebele 21, where the facility is located. No patient came from most kebele of the city. The utilisation rates for Kolfe Health Centre (Fig. 20) were high (4 to less than 8 per 100 population) for 7 kebele in Keftegna 25 and 2 kebele in Keftegna 24. The rates ranged from nearly zero to less than 0.4 within 3 km of the health centre becoming zero for the rest of the city's kebele. As regard Gulele Health Station higher rates (greater than 2 and less than 8 per 100 population) were observed for 21 kebele in Keftegna 9 and 10 (Fig.21). The rates continued to decline with distance and no patient was served from most kebele of the city. Etege Mesk Health Station had higher rates (2 less than 8 per 100 population) for 7 kebele in Keftegna 2 and 14. Kebele in the keftegna to the south of the facility had lower rates (up to 2 per 100 population). Kebele to the west north and northwest of the health station did not send any patient (Fig. 22). Lideta Health Station had higher utilisation rates (4 to less than 16 per 100 population) for all the Kebele in Keftegna 22. Eight kebele in Keftegna 4 had rates ranging between 2 and 8 per 100 population. Kebele 6 in Keftegna 22, where the health station is located, had the highest rate, 11.2 per 100 population. With the exception of

the kebele with lower rates (upto 2 per 100 population) to the south-east of the facility, almost no patient was sent from the rest of the city (Fig. 23).

Gynaecology Patients: The highest utilisation rate, 8.69 per 100 population, for gynaecology patients in Gandhi Hospital was confined to Kebele 1 in Keftegna 21, where the hospital is located (Fig. 17). Kebele around the hospital and extending further to the north-west and south-east had rates ranging between 4.0 and 7.9 per 100 population. Several kebele in the western and eastern parts of the city had rates of 2 to less than 4 per 100 population. Kebele in the north-eastern part of the city had lower rates, 0.5 to less than 2 per 100 population.

6.1.2 Catchment Areas

Antenatals: The per capita utilisation rates by kebele (Figs. 18-23) show that the antenatal catchment areas of the 3 health centres and 3 health stations are confined mainly to the areas surrounding the facilities. However, 4 of the 6 facilities (Figs., 18,20, 22 and 23) had asymetric catchment areas with elongated or scattered patterns. The catchment area for Kebele 18 Health Centre was confined mainly to the north-west central part of the city, whereas Talian Legasion and Kolfe health centres served patients from the north-eastern and north-western extreme sections of the city, respectively. The zone of influence for Gulele Health Station was restricted to the northern most part of the city and Lideta Health Station covered areas in the south-western and central parts of the city. The zone of influence of Etege Mesk Health Station

covered mainly the small central area of the city with limited extension to the keftegna of the south-eastern part of the city.

Out of the 6 health institutions studied, Kebele 18 (with 100 kebele) and Talian Legasion (with 33 kebele) health centres had the largest and smallest catchment areas within Addis Ababa, respectively, as measured by the number of kebele served. Because of its location in the densely populated and busy north-west central part of the city (Merkato), Kebele 18 Health Centre had the largest area of influence (100 kebele) of the 3 health centres. In contrast, Talian Legasion and Kolfe health centres are located in the relatively lower population density areas of the north-east and north-west in the city, respectively. As a result, their service areas were confined to their immediate respective surroundings (Talian Legasion served 33 kebele and kolfe 50 kebele). Etege Mesk Health Station had the largest area of influence (69 kebele) of the 3 health stations within Addis Ababa followed by Gulele Health Station (66 kebele). Etege Mesk Health Station is located almost in the centre of the city with relatively reliable transport facilities. Gulele and Lideta Health Stations are located in the northern and south-western extreme built up areas of the city, respectively, and, thus, not favoured by the transport network of the city. As a result, their catchment areas (Gulele 66 kebele and Lideta 62 kebele) were found to be smaller than that of Etege Mesk Health Station (69 kebele).

The distance decay gradients for the 6 health institutions (Fig. 24) show that Etege Mesk Health Station, followed by Lideta Health Station, had the largest catchment area of the 6 health

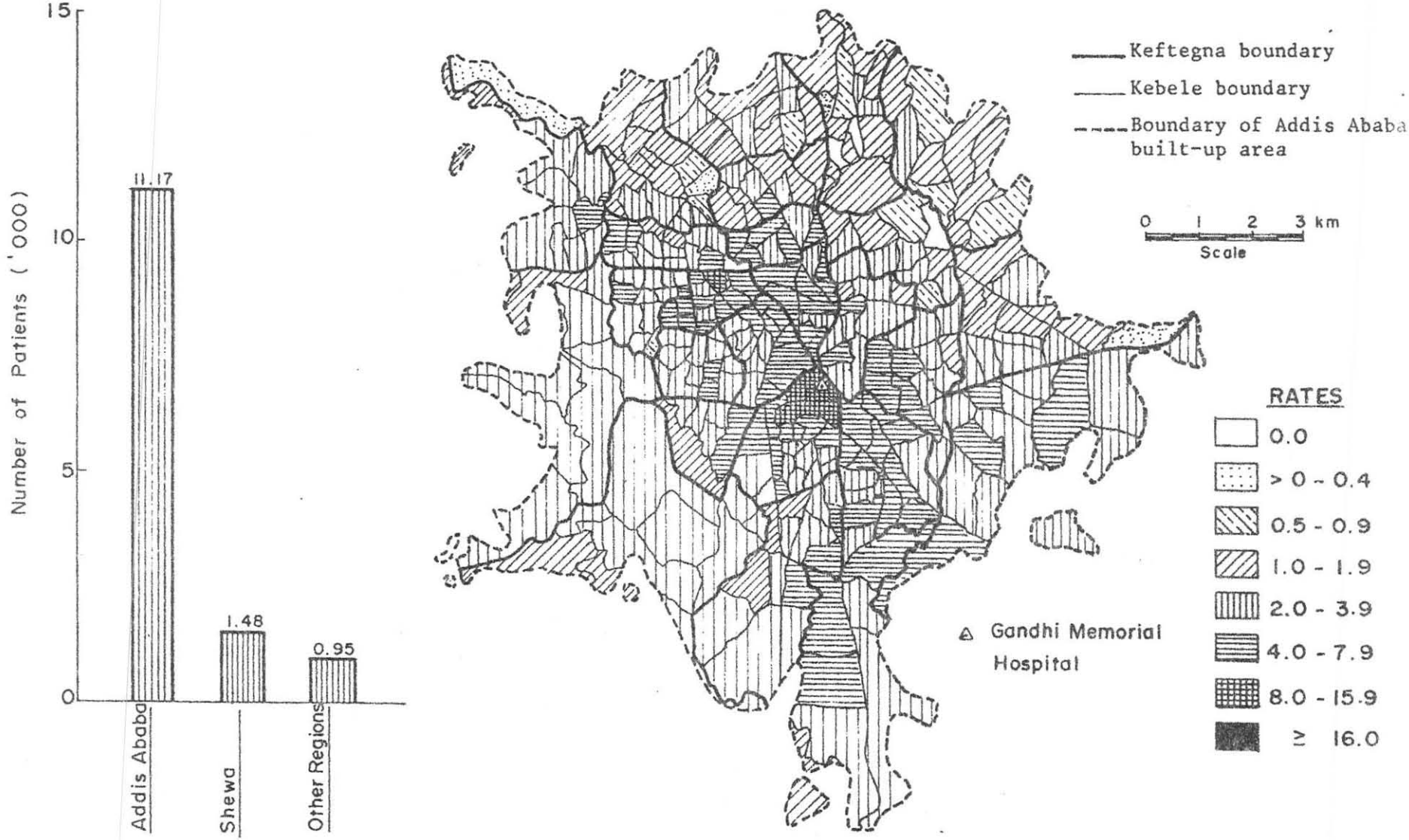


Figure 17. Per Capita Utilisation Rates by Kebele for Gynaecology Outpatients Gandhi Hospital 1978 E.C.

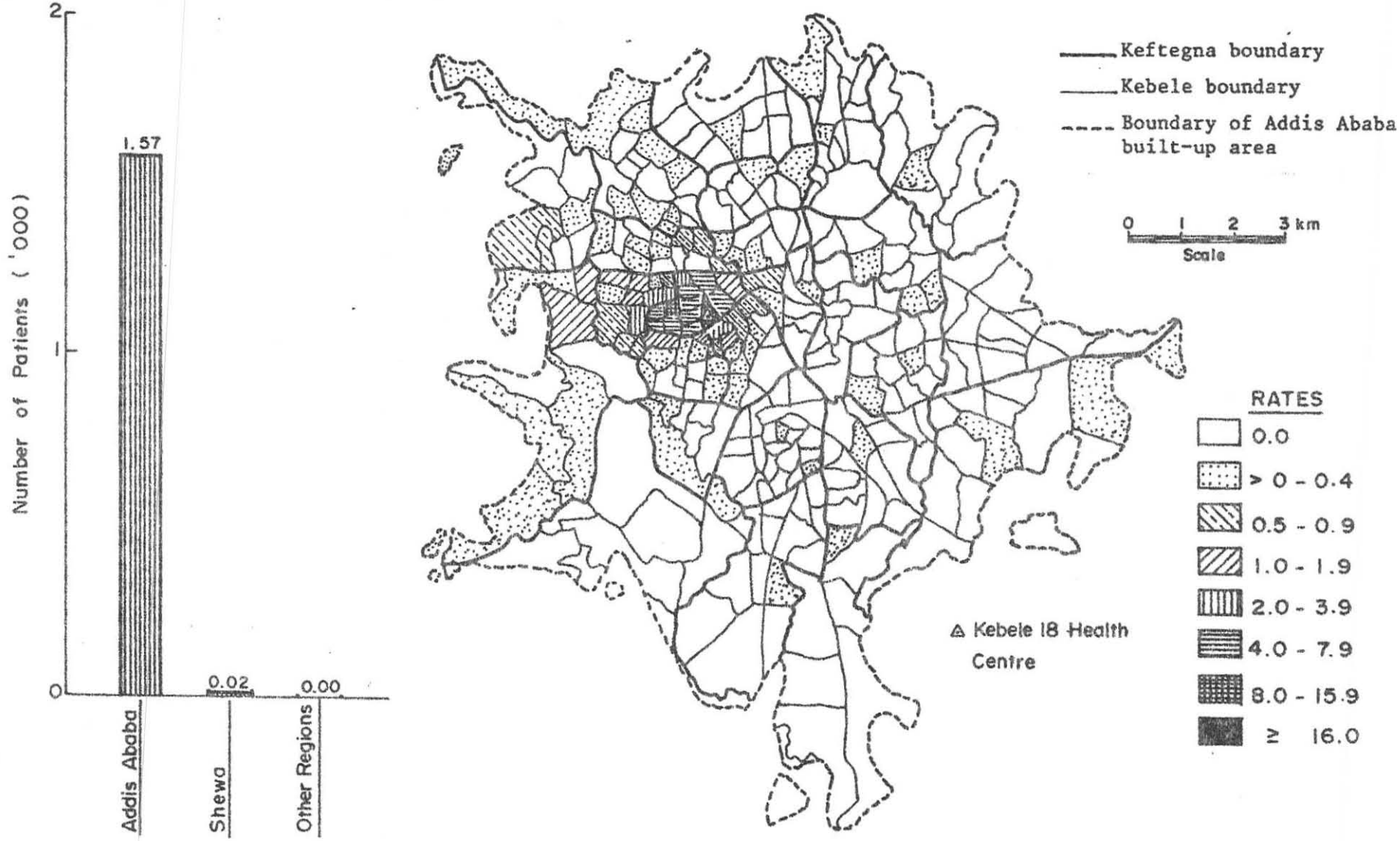


Figure 18. Per Capita Utilisation Rates by Kebele for Antenatals of Kebele 18 Health Centre.

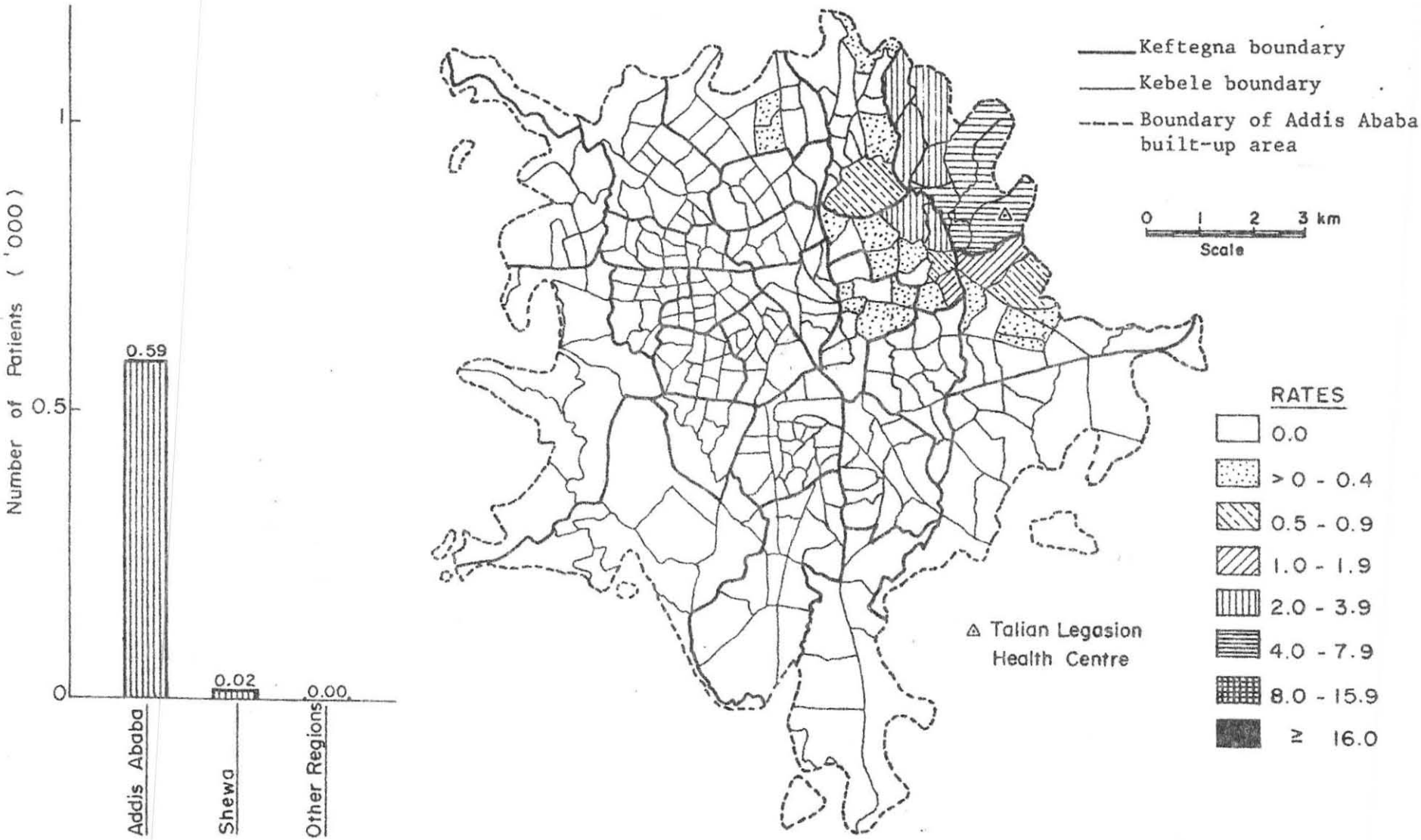


Figure 19. Per Capita Utilisation Rates by Kebele for Antenatals of Talian Legasion Health Centre - 1978 E.C.

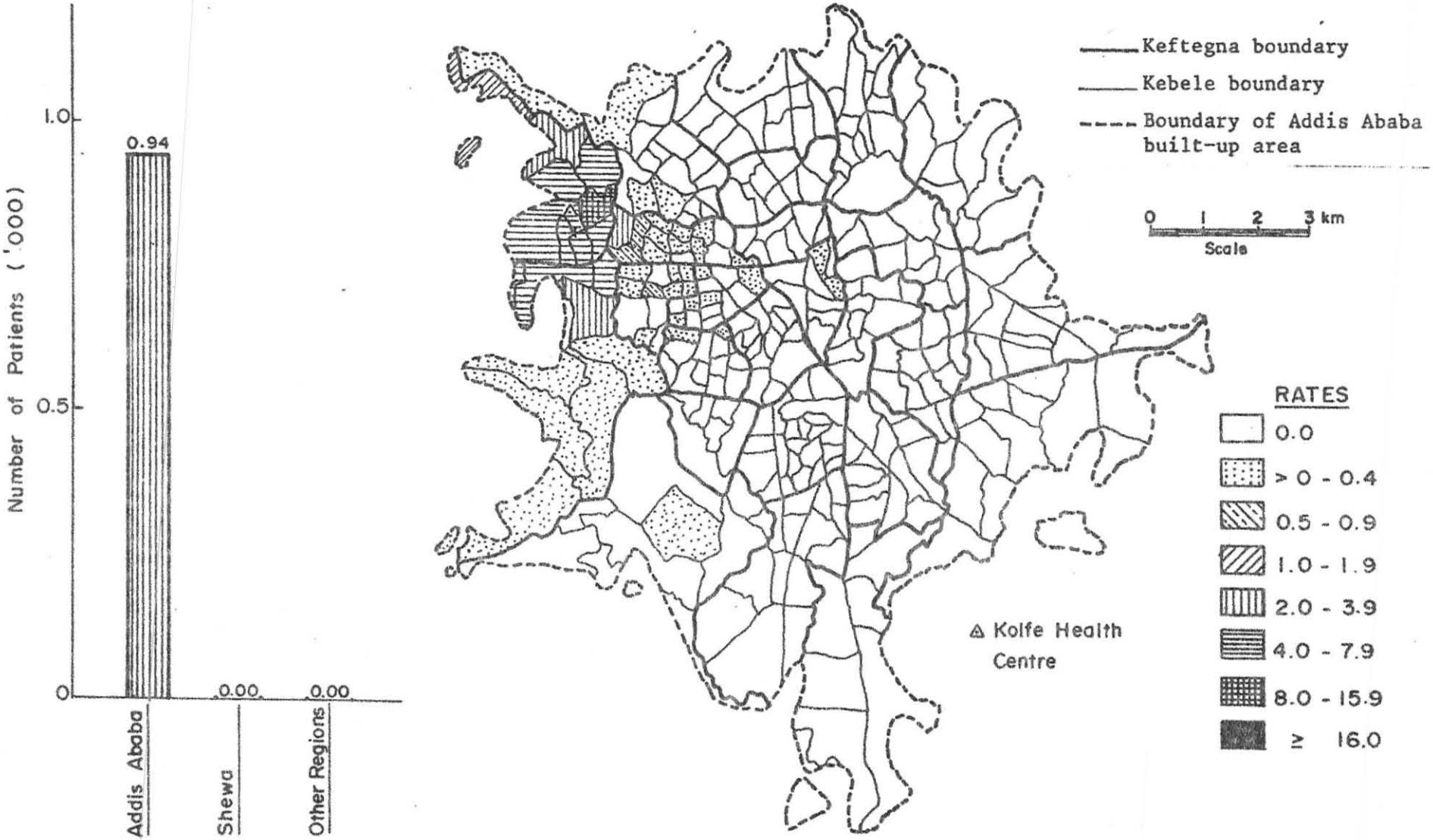
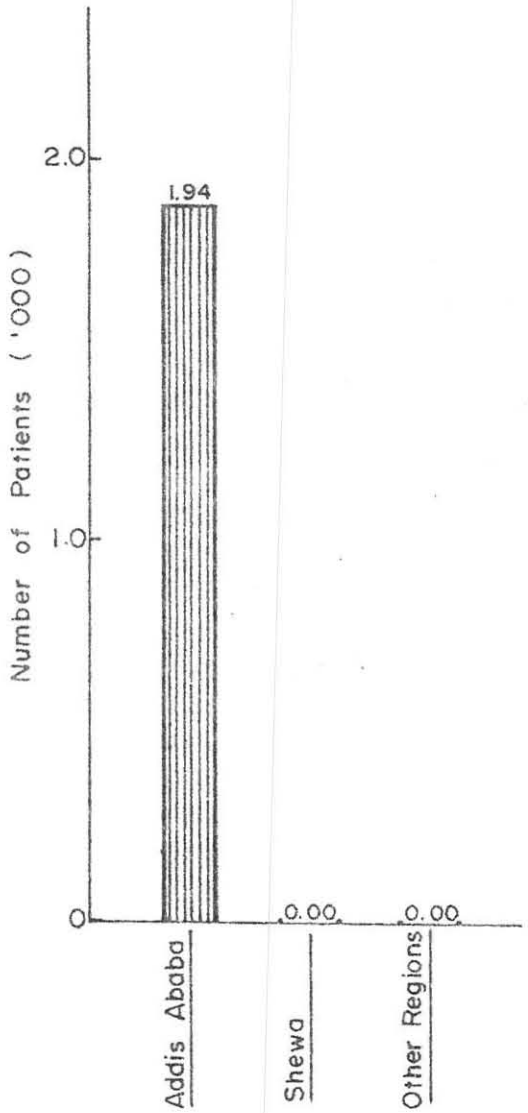


Figure 20. Per Capita Utilisation Rates by Kebele for Antenatals of Kolfe Health Centre - 1978 E.C.



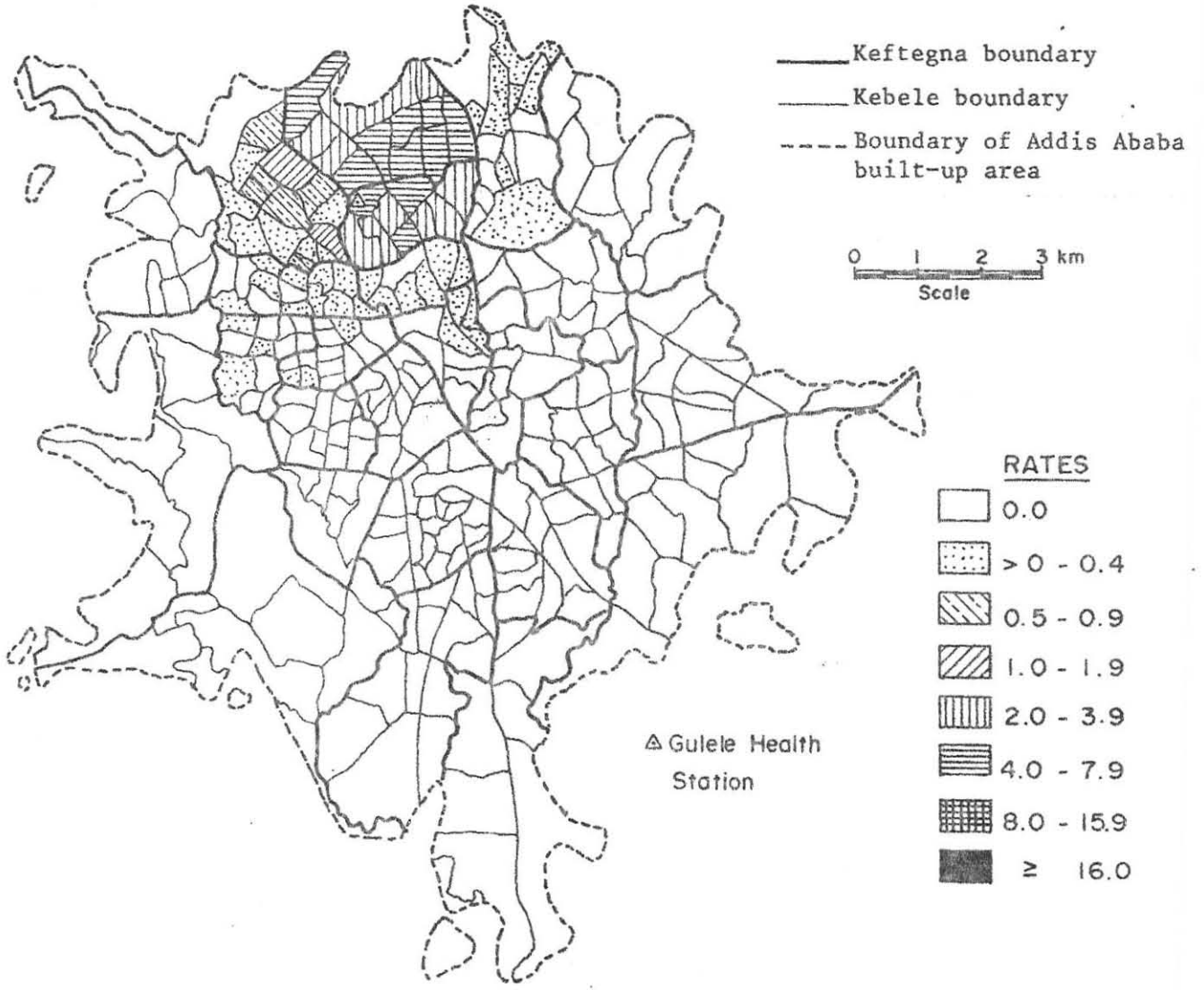
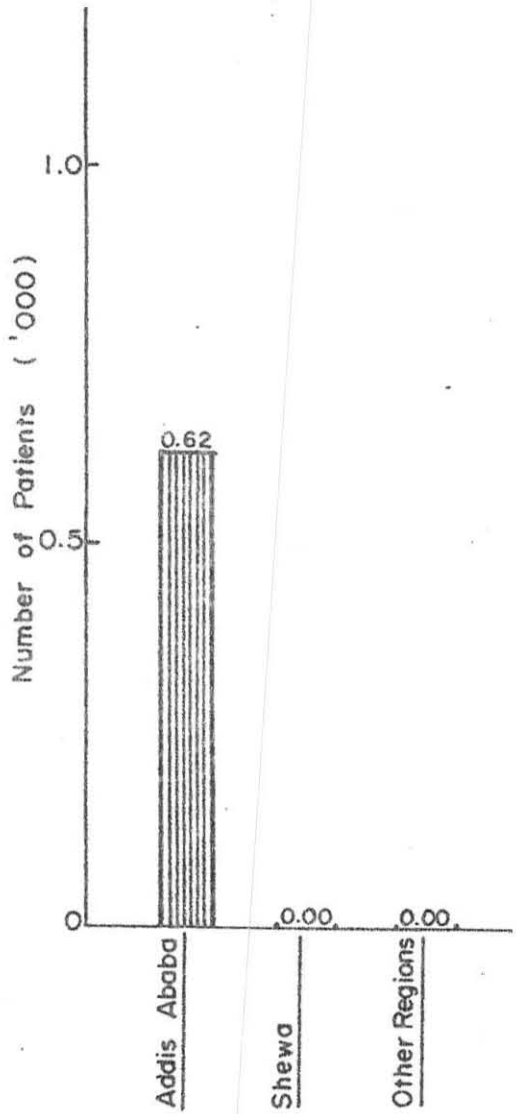


Figure 21. Per Capita Utilisation Rates by Kebele for Antenatals of Gulele Health Station - 1978 E.C.



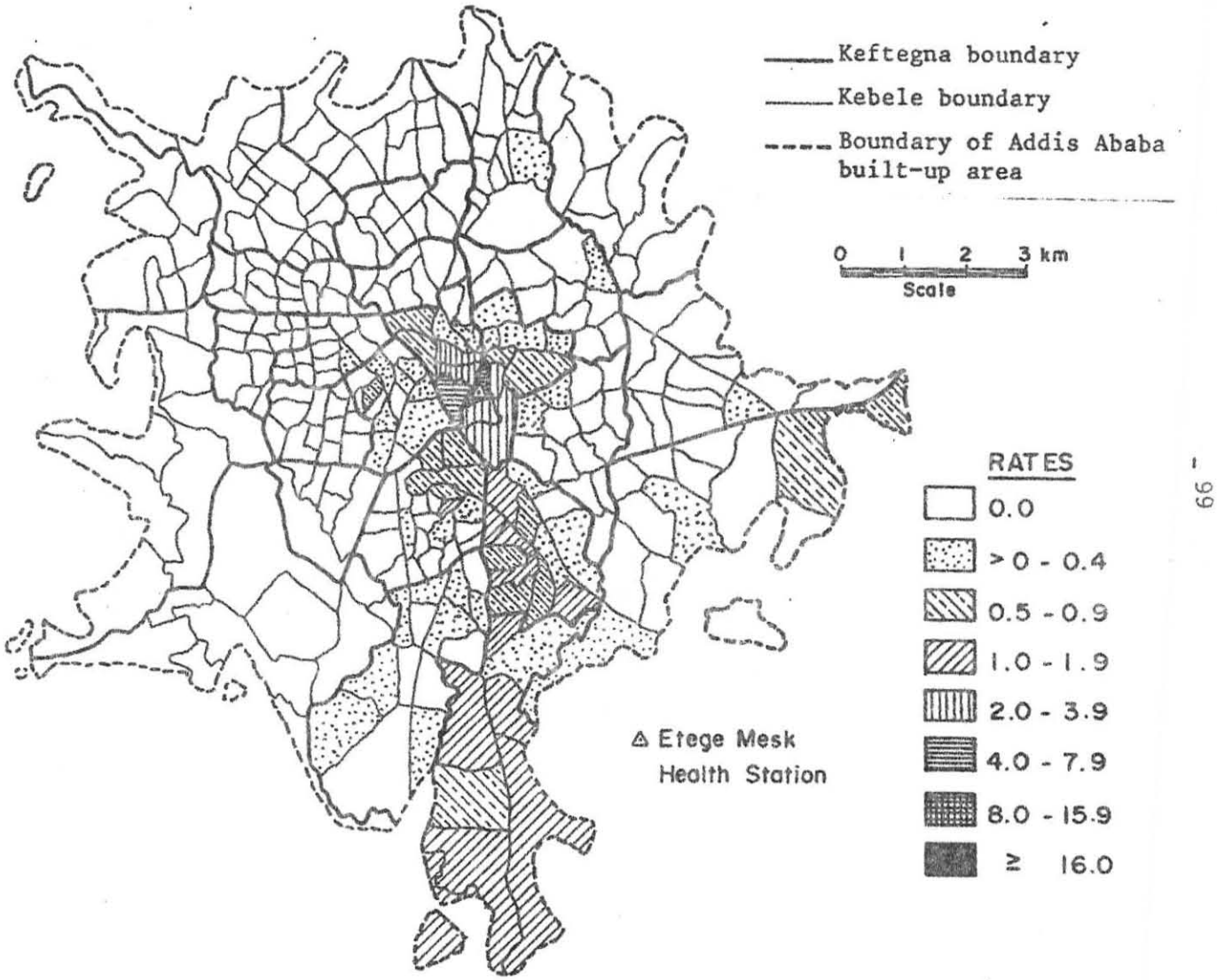


Figure 22. Per Capita Utilisation Rates by Kebele for Antenatals of Etege Mesk Health Station - 1978 E.C.

Figure 23. Per capita Utilisation Rates by Kebele for Antenatals of Lideta Health Station - 1978 E.C.

facilities within Addis Ababa. This situation is different from the catchment areas discussed above which were determined on the basis of number of kebele served. The reason for the difference is that the kebele served by Etege Mesk and Lideta Health Station were more dispersed than for Kebele 18, Talian Legasion and Kolfe health centres and Gulele Health Station resulting in flatter distance decay gradients for Etege Mesk and Lideta health stations than for the other 4 institutions.

Table 31 hsows the distribution of antenatals served from Addis Ababa, Shewa and the other administrative regions in the 3 health

Table 31: Number and proportion of antenatals from Addis Ababa, Shewa and other regions for the 3 health centres and 3 health stations.

Facility	Addis Ababa		Shewa		Other Regions		No Address		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Kebele 18	1574	93.1	22	1.3	0	0.0	94	5.6	1690	100.0
Talian Legasion	590	96.7	18	3.0	2	0.3	0	0.0	610	100.0
Kolfe	940	94.4	6	0.6	0	0.0	0	0.0	946	100.0
Gulele	1936	97.4	0	0.0	0	0.0	51	2.6	1987	100.0
Etege Mesk	616	98.9	7	1.1	0	0.0	0	0.0	623	100.0
Lideta	2071	98.5	20	1.0	0	0.0	11	0.5	2102	100.0
TOTAL	7727	97.1	73	0.9	2	0.0	156	2.0	7958	100.0

Source: Atnenatal [illegible] 1978 E.C.

centres and 3 health stations. Out of the total 7958 antenatals served in the 6 health institutions, 7727 (97.1%) came from Addis Ababa and 73 (0.9%) from Shewa. Only 2 patients came from other administrative

regions. Between 93.1% and 99.4% of the patients in the 6 health institutions came from Addis Ababa. Talian Legasion Health Centre had the largest area of influence of all the 6 health facilities with 96.7%, 3% and 0.3% of its patients coming from Addis Ababa, Shewa and the other administrative regions, respectively. Exculding those without address, all the patients in Gulele Health Station came from Addis Ababa. Since no patient came from either Shewa or the other administrative regions, the zone of influence for Gulele Health Station becomes the smallest of all the 6 health facilities studied. Lideta Health Station had the largest area of influence of the 3 health stations with 98.5% of its patients from Addis Ababa and 1% from Shewa. Thenumber of patients from Shewa was higher than from all other administrative regions combined for each facility except for Gulele Health Station. Indeed no patient from the other administrative regions visited the facilities with the exception of 2 patients to Talian Legasion Health Centre.

Gynaecology Patients: Fig. 17 shows that Gandhi Hospital served gynaecology outpatients from all the kebele of the city in 1978 E.C. This fact is confirmed by the flatter distance decay gradient in Fig. 26 which reflects the gradual declines in the per capita utilisation rates with increasing distance from the facility.

Table 32 shows the distribution of gynaecology outpatients and inpatients served in Gandhi Hospital from Addis Ababa, Shewa and other administrative regions in 1978 E.C. Out of the total 13,599 outpatients, 11,167 (82.1%) came from Addis Ababa, 1480 (8.4%) from Shewa and 952 (7%) from other administrative regions. During

Table 32: The distribution of gynaecology outpatients and inpatients in Gandhi Hospital from Addis Ababa, Shewa and other regions, 1978 E.C.

Patient	Addis Ababa		Shewa		Other Regions		Total		X^2	Sig.
	No.	%	No.	%	No.	%	No.	%		
Out-patients	11,167	82.1	1,480	10.9	952	7.0	13,599	100		
In-patients	2,764	85.7	271	8.4	191	5.9	3,226	100.0	0.2293	0.900
TOTAL	13,931	82.8	1,751	10.4	1,143	6.8	16,825	100.0		

Source: Patient registration books, 1978 E.C.

the same year, 3226 patients were admitted to the hospital of which 85.7% came from Addis Ababa, 8.4% from Shewa and 5.9% from other administrative regions. The proportions show that the outpatient catchment area is larger than that of inpatients. However, the chi-square test reveals that the differences in the proportions of inpatients and outpatients from Addis Ababa, Shewa, and the other administrative regions are not statistically significant (Table 32).

6.2 Factors Related to the Utilisation of the Health Facilities

6.2.1 Physical Distance

Antenatals: Distance was found to be a major factor affecting the antenatal utilisation of the 3 health centres and 3 health stations studied. As a result of the confinement of the areas of influence of the health institutions within Addis Ababa to their immediate respective surroundings, the number of antenatals who used the facilities fell precipitously over short distances.

The declining per capita utilisation rates with increasing distance, shown in Table 33, reveal that distance is a major constraint in the utilisation of the services offered by the 3 health centres and 3 health stations studied. Compared to the distance rings that follow, the utilisation rates in the 0-1 km distance ring were high

Table 33: Per Capita utilisation rates for distance rings of 1 km intervals for the 3 health centres and 3 health stations.

Distance	Number of patients per 100 population					
	Kebele 18	Talian Legasion	Kolfe	Lideta	Etege Mesk	Gulele
0-1	2.62	3.92	4.94	6.13	1.83	2.86
1-2	0.36	1.86	1.13	1.68	0.14	0.78
2-3	0.12	0.23	0.18	0.73	0.08	0.03
3-4	0.06	0.01	0.05	0.15	0.07	0.01
4-5	0.02	0	0.01	0.04	0.07	0
5-6	0.02	0	0	0.01	0.05	0

Source: Antenatal registration books, 1978 E.C.

for all the 6 health facilities. After sharp declines in the 1-2 km strip, the rates continue to drop but become less than 0.1 visits per 100 population at 3-4 km distance for 5 of the 6 facilities. For Talian Legasion Health Centre and Gulele Health Station the rates are almost zero beyond 4 km. After the 5-6 km distance ring, the rates become insignificant for all the 6 health institutions.

The regression analysis and distance decay gradients for the 3 health centres and 3 health stations (Fig. 24) further reveal the effect of physical distance between residences of antenatals and the health facilities. The correlation coefficients (r),

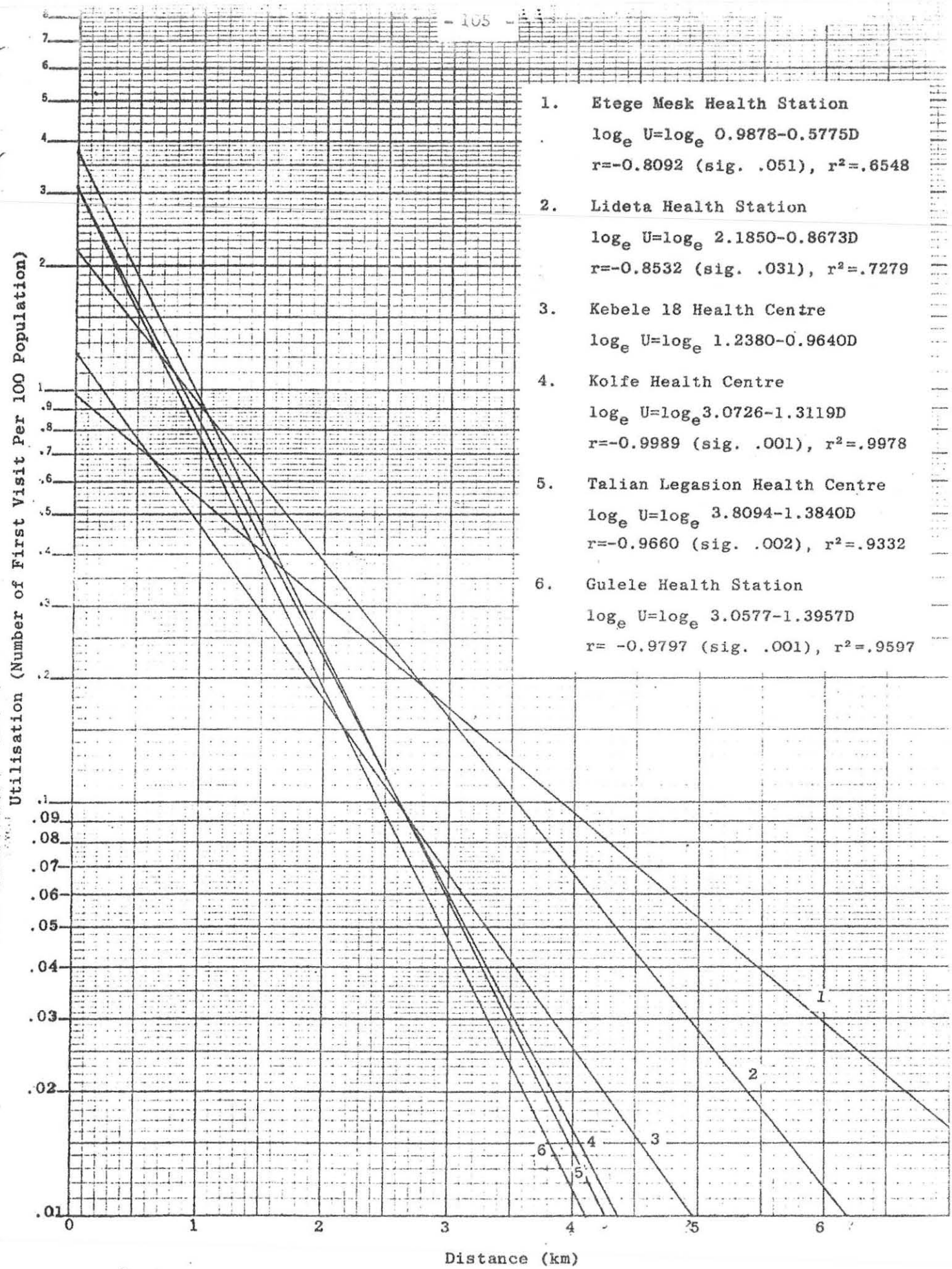


Figure 24 Distance and Utilisation Relationships for Antenatals in 3 Health Centres and 3 Health Stations - 1978 E.C.

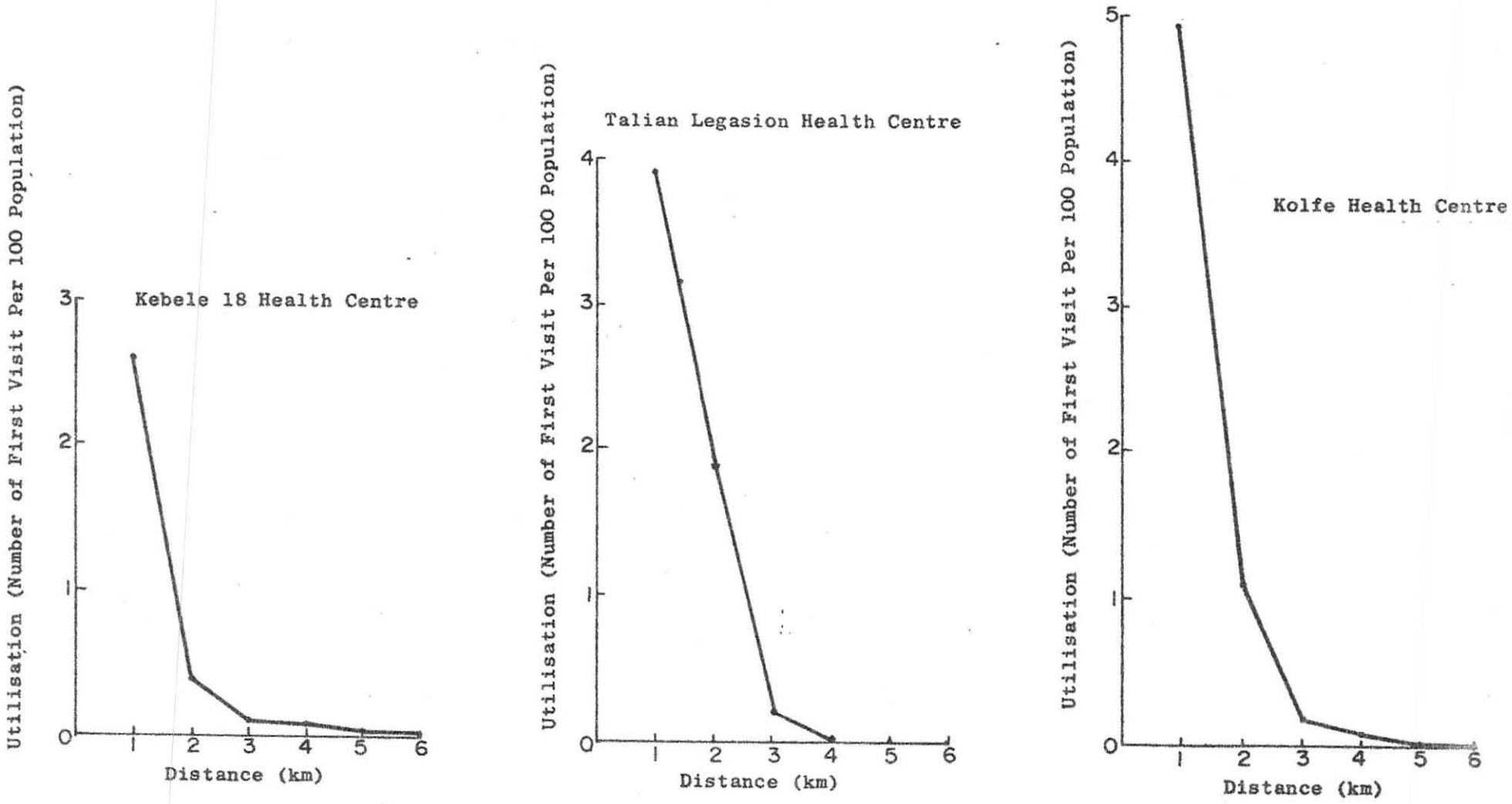


Fig. 25 . Distance and Per Capita Utilisation Relationships for Antenatals - 1978 E.C.

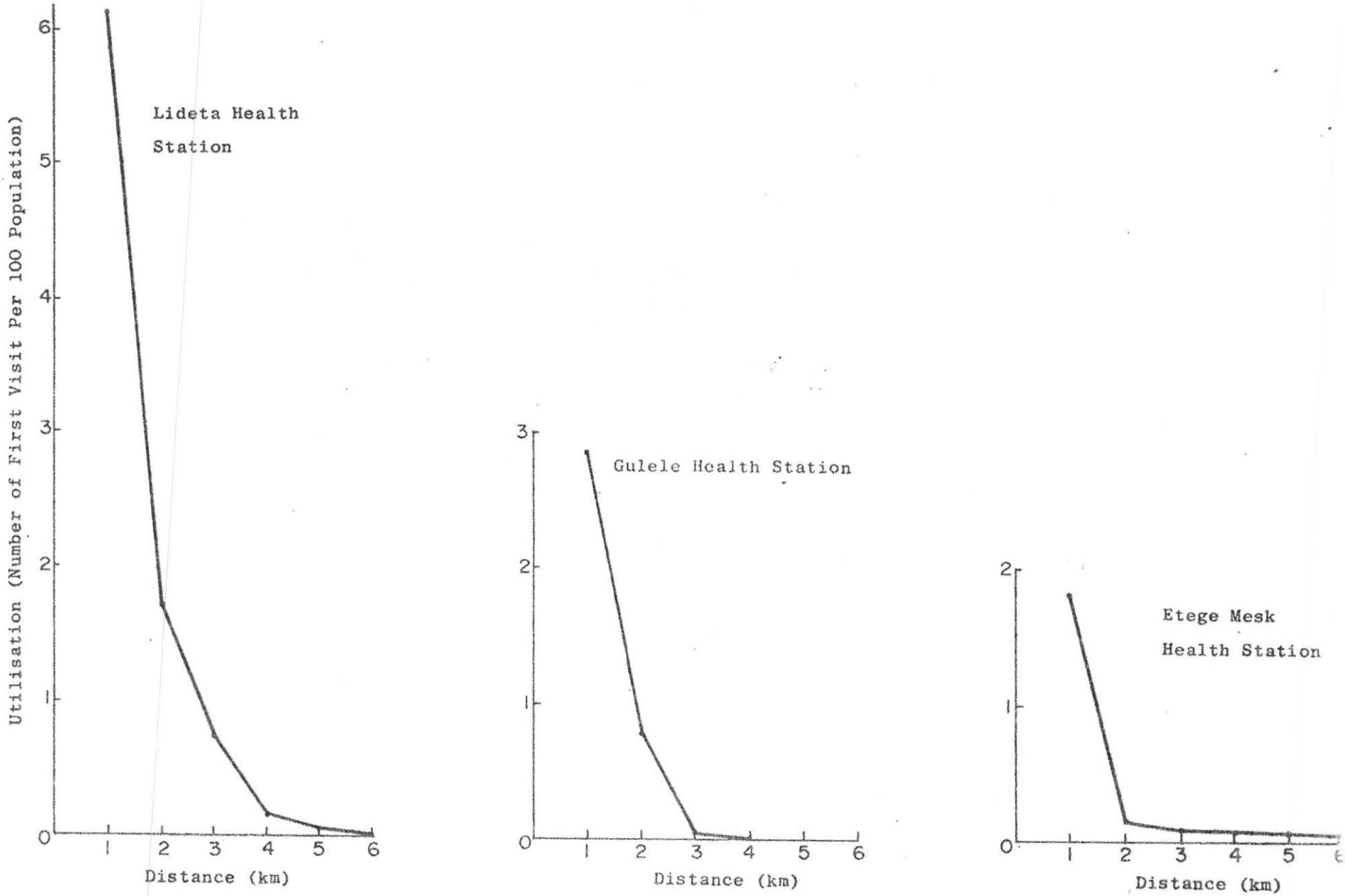

Utilisation (Number of First Visit Per 100 Population)
Lideta Health Station
Distance (km)
Gulele Health Station
Distance (km)
Etege Mesk Health Station
Distance (km)

Fig. 25. (Cont'd.)

ranging between -0.8092 and -0.9989, reveal the strong relationship existing between distance and the utilisation of the 3 health centres and 3 health stations. The coefficients of determination (r^2) also show that 66% to almost 100% of the variations in the utilisation of the 3 health centres and 3 health stations are explained by distance. The graphs in Fig. 25 also show that distance had a major role to play in the utilisation of the 6 health facilities. For all the facilities studied, utilisation fell precipitously after a distance of only 1 km.

Gynaecology Patients: The 1978 E.C. statistics for gynaecology patients in Gandhi Hospital show that physical distance was a major factor affecting the utilisation of the services offered by the institution. As shown in Table 34, per capita utilisation rates declined gradually over a distance of 9 km from the hospital. The

Table 34: Per capita utilisation and distance relationship for gynaecology patients in Gandhi Hospital, 1978 E.C.

	DISTANCE (KM)								
	1	2	3	4	5	6	7	8	9
Utilisation Rates	5.17	3.72	3.50	2.69	2.68	2.28	2.21	1.94	1.79

Source: Patient registration books, 1978 E.C.

correlation coefficient (r), -0.9706, shows that there is a significant inverse relationship between distance and utilisation and the coefficient of determination (r^2) reveals that 94% of the variation in the utilisation of the hospital can be explained by distance. The distance decay gradient, although flatter because of lower

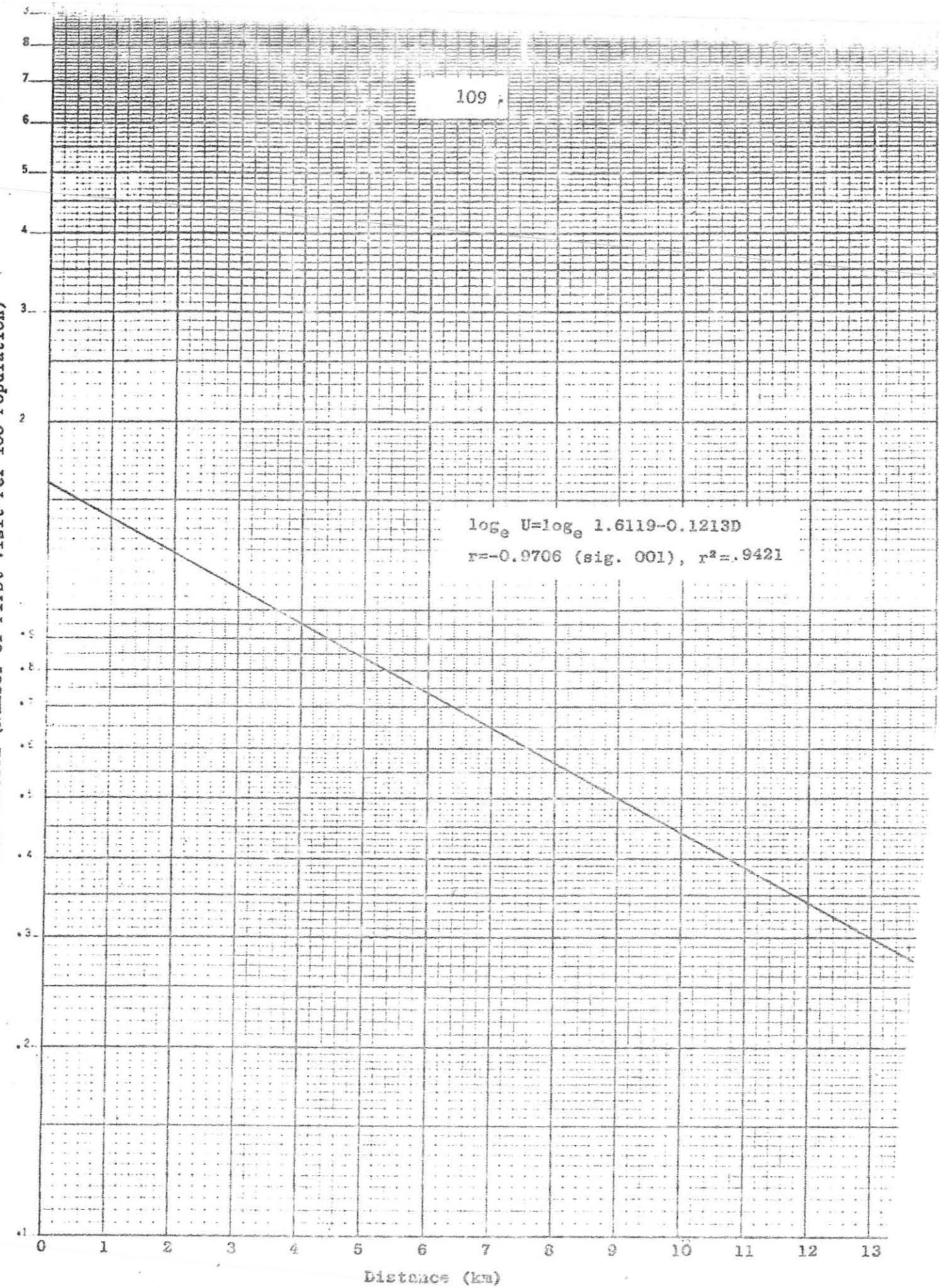


Figure 26: Distance and Utilisation Relationships for Gynaecology Patients in Gandhi Hospital - 1978 E.C.

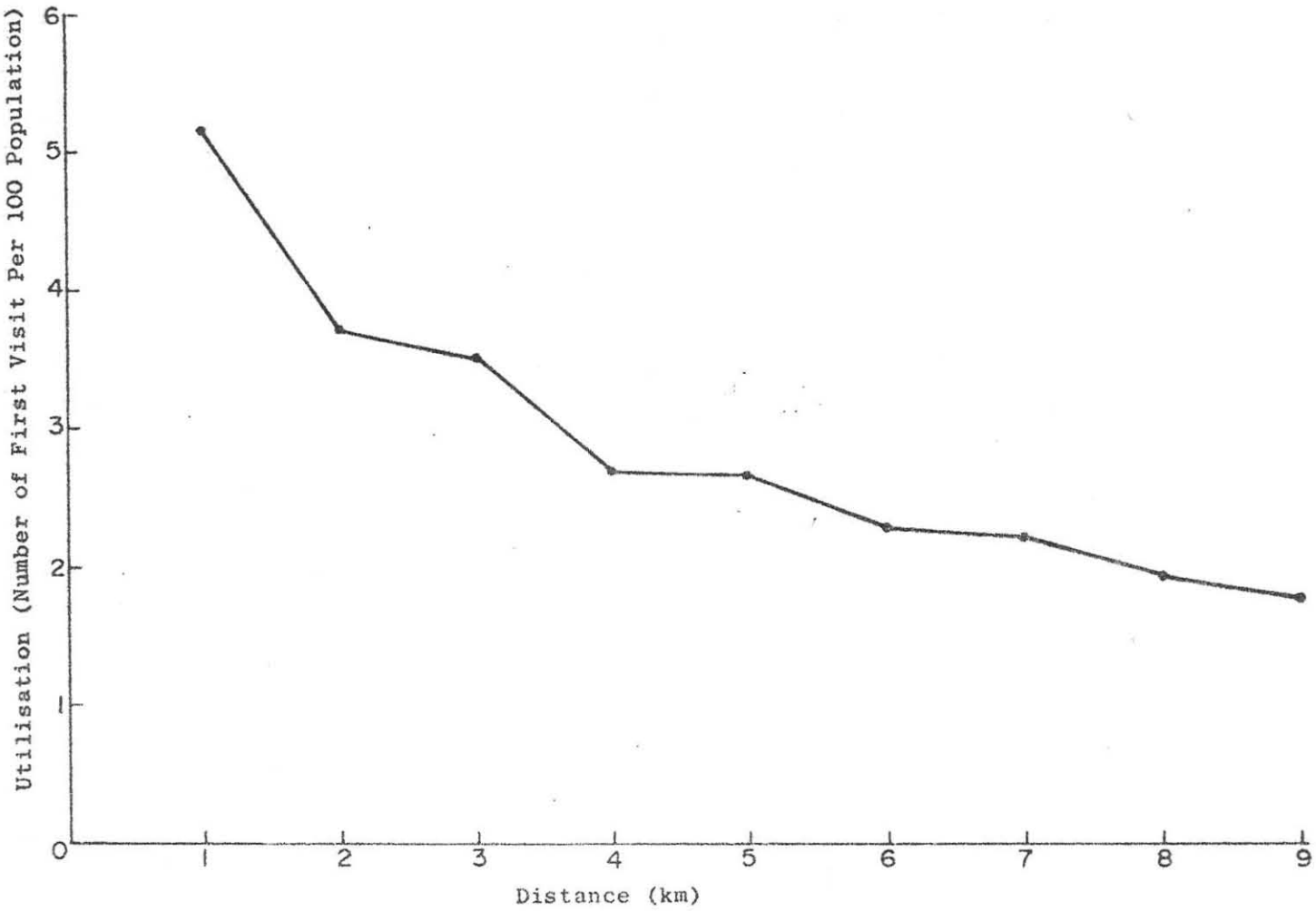


Fig. 27. Distance and Per Capita Utilisation Relationship for Gynaecology Patients in Gandhi Hospital - 1978 E.C.

intervening opportunities, further confirms the effect of physical distance on the utilisation of the services offered by the hospital (Fig. 26). Fig. 27, which shows the actual relationship between per capita utilisation rates for gynaecology patients and distance, further reveals the effect of distance on the utilisation of the hospital.

6.2.2 Referral Status

Antenatals: Structured interviews involving 1400 antenatals in Gandhi Hospital, 2 health centres (Talian Legasion and Kolfe) and 4 health stations (Addis Ketema, Lideta, Etege Mesk and Gulele) reveal that there was no regular referral of antenatals in 5 of the 7 health institutions studied. The 2 health centres (Talian Legasion and Kolfe) and 3 health stations (Addis Ketema, Lideta and Etege Mesk) had no referred parients. Out of the total 1400 antenatals interviewed in the 7 health institutions, only 12 (0.9%) had been referred. Eleven of the 12 referred were in Gandhi Hospital and the remaining 1 was in Gulele Health Station. All the patients in the remaining 5 health facilities (2 health centres and 3 health stations) were self-referred. The fact that more than 99% of the 1400 antenatals interviewed said that they came on their own strongly indicates the absence of an adequate referral system among these and other health centres and health stations in Addis Ababa (MOH, 1986b; Kloos et al., 1987a162).

Gynaecology Patients: Out of the 200 gynaecology patients interviewed in Gandhi Hospital, 25 patients (12.5%) were referred and 175 (87.5%) were self-referred;17 patients (14.1%) of the 121 from Addis Ababa were referred and 6(8.1%) of the 74 patients from other administrative regions including Shewa were referred. The chi-square value of 1.541 reveals that the differences between the expected and observed proportions of referred and non-referred patients from Addis Ababa and other administrative regions were not significant.

6.2.3 Length of Pregnancy: Antenatals were asked about the length of pregnancy for which they came to obtain assistance on the date of our interviews. Table 35 shows the length of pregnancy to the nearest month) for 1400 antenatal interviewees in the 7 health institutions studied. The proportion of antenatals pregnant up to 2 months accounted for only 2.6% of the total 1400 interviewed. As the length of pregnancy increased both the number and proportions of patients who sought care from the health facilities also increased reaching a peack attendance for women pregnant for 7-8 months. Pregnant 7 or 8 months and 9 months or more represented 38.4% and 20.6% of the total antenatals interviewed, respectively. The same trend generally prevailed for the individual health facilities. The situation reveals that the longer the duration of pregnancy the more concerned mothers become about their pregnancy and the higher the incidence of complications and inconveniences.

Table 35: Length of pregnancy for 1400 antenatal interviewees by facility.

Facility	LENGTH OF PREGNANCY												TOTAL	
	1 and 2* months		3 and 4 months		5 and 6 months		7 and 8 months		9 months plus		No Response or don't know			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Gandhi Hospital	14	7.0	38	19.0	45	22.5	62	31.0	35	17.5	6	3.0	200	100.0
Talian Legasion H.Centre	5	2.5	9	4.5	44	22.0	102	51.0	40	20.0	0	0.0	200	100.0
Kolfe Health Centre	2	1.0	12	6.0	51	25.5	83	41.5	52	26.0	0	0.0	200	100.0
Addis Ketema H.Station	5	2.5	34	17.0	66	33.0	69	34.15	18	9.0	8	4.0	200	100.0
Lideta Health Station	3	1.5	28	14.0	40	20.0	67	33.5	62	31.0	0	0.0	200	100.0
Etege Mesk H.Station	2	1.0	24	1.20	58	29.0	80	40.0	34	17.0	2	1.0	200	100.0
Gulele Health Station	6	3.0	19	9.5	47	23.5	74	37.0	48	24.0	6	3.0	200	100.0
TOTAL	37	2.6	164	11.7	351	25.1	537	38.4	289	20.6	22	1.6	1400	100.0

Source: Structured interviews by the writer.

* Includes those with less than 15 days of pregnancy.

6.2.4 Number of Visits During Pregnancy: All antenatals in the 7 health institutions were asked about the number of visits they made to health institutions during their pregnancies including the visit on the day they were being interviewed. The reports, shown

in Table 36, were for both the health facilities in which they were being interviewed and others. Only 42.6% of all antenatals said that the day they were being interviewed was their first time to visit a health institution; 22.6% said that they came the second time.

Table 36: Number of visits during pregnancy as reported by 1400 antenatals - by facility.

Facility	NUMBER OF VISITS												TOTAL	
	Once		Twice		3 times		4 times		5 plus		No Response or don't know			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Gandhi Hospital	94	47.0	51	25.5	22	11.0	21	10.5	12	6.0	0	0.0	200	100.0
Talian Legasion H.Centre	38	19.0	71	35.5	52	26.0	23	11.5	16	8.0	0	0.0	200	100.0
Kolfe Health Centre	68	34.0	35	17.5	29	14.5	24	12.0	21	10.5	23	11.5	200	100.0
Addis Ketema H.Station	118	59.0	57	28.5	14	7.0	7	3.5	3	1.5	1	0.5	200	100.0
Lideta Health Station	146	73.0	22	11.0	6	3.0	3	1.5	5	2.5	18	9.0	200	100.0
Gulele Health Station	76	38.0	44	22.0	23	11.5	26	13.0	39	19.5	0	0.0	200	100.0
TOTAL	597	42.6	316	22.6	188	13.4	121	8.6	135	9.7	43	3.5	1400	100.0

Source: Structured interviews by the writer.

Those who said 5 or more times accounted for on16 9.7% of all antenatals interviewed. An inspection of Table 36 also show that

the proportions of antenatals who visited their respective health facilities for the first time ranged between 19.0% (Talian Legasion Health Centre) and 73.0% (Lideta Health Station). The proportions of those who responded that the date of the interview was their first visit, were the highest of all the frequencies indicated for all the health facilities with the exception of Talian Legasion Health Centre. The proportions of those who said that they visited 5 or more times, ranged between 1.5% and 19.5%. Thus, while the fewest women pregnant up to 3 months had visited a health institution 4 times or more, most women in their eight and nineth month of pregnancy had been to a facility 4 or more times. A chi-squre test (Table 37) was made to see the differences in the proportions between the observed and expected frequencies for length of pregnancy and

Table 37: Length of pregnancy and number of visits during pregnancy for the 7 health institutions.

Number of Visits	Length of Pregnancy				X^2	Sign.
	3 months or less	4 and 5 months	6 and 7 months	8 and 9 months		
Once	84	144	188	167		
Twice	14	53	131	111	188.29	0.001
3 times	7	27	65	86		
4 times	5	11	57	179		

Source: Structured interviews by the writer.

number of visits during pregnancy for the 7 health institutions combined. The 4 by 4 contingency table with 9 degrees of freedom gives a value of 188.293 (significant at 0.001). The result shows that the differences in the proportions between the expected and observed frequencies for length of pregnancy and number of visits during pregnancy were not due to chance.

6.2.5 Target Areas for the Health Centres and Health Stations

Kebele 18 and Kolfe health centres did not have specific target areas for antenatal attendants. The target area for Talian Legasion Health Centre was Keftegna 12. Etege Mesk Health Station was expected to offer services to Keftegna 2,14, 18 and 19 and Lideta Health Station to Keftegna 3,4,22,23 and 24. None of them, however, confined their services to the target areas assigned. As many as 22.1% of the antenatals in Etege Mesk Health Station in 1978 E.C., for example, came from places outside the target area of the faiclity and only 77.9% were served from within the target area. In Lideta Health Station, 91.1% of the antenatal attendants came from the target area of the facility and the remaining 8.9% were from places outside the target area.

6.2.6 Length of Illness: Gynaecology patients in Gandhi Hospital were asked about the length of illness for which treatment was sought. Only 16(8.0%) of the 200 patients interviewed said that their illness was less than 7 days;83 patients (41.5%) said that the duration of their illness ranged between 1 month and less than 1 year. As many as 32.5% of the patients reported that their illness lasted 1 year or more. The chi-square test for the differences in the proportions of patients from Addis Ababa and other administrative regions among the different categories of illness (less than 7 days, 7 days to less than 1 month, 1 month to less than 1 year, and 1 year or more) gives a value of 21.9%, significant at 0.001, showing that the proportion of patients from Addis Ababa with shorter duration (up to

1 month) of illness was higher than that of the other administrative regions. Conversely, the proportion of patients with longer duation (1 year or more) of illness from the rural areas was higher than that of Addis Ababa.

6.2.7 Previous Treatment: gynaecology patients were also asked if they had obtained prior treatment for the illness they sought care on the day of our interviews. Out of the 200 patients interviewed, 89 (44.5%) said that they had been treated and the remaining 111(55.5%) said they were not treated. In the previous section (6.2.6), 32.5% of the 200 patients interviewed reported that the duration of their illness was 1 year or more. Thus, 44.5% of the patients reporting that they had been treated earlier was to be expected.

CHAPTER 7

HEALTH CARE UTILISATION PATTERNS FOR POLYCLINIC PATIENTS, SICK CHILDREN AND ANTENATALS

This Chapter provides a comparative analysis of the data examined in the previous 3 chapters. This includes (a) Polyclinic outpatients and inpatients in 3 hospitals (Tekur Anbessa, Paulos and Ras Desta) (b) in-and out-patient sick children in 2 hospitals (Ethio-Swedish and Yekatit-12) and 5 health stations (Addis Ketema, Gulele, Etege Mesk, Lideta and Beletschachew) and (c) antenatals in 1 hospital (Gandhi), 3 health centres (Talian Legasion, Kebele 18 and Kolfe) and 4 health stations (Addis Ketema, Lideta, Etege Mesk and Gulele). The purpose of this comparison is to show the variations in the patterns of health care utilisation for the 3 types of patients.

7.1 Per Capita Utilisation Rates

The per capita utilisation rates for the 3 types of patients (polyclinic, sick children and antenatals) were discussed in greater detail in chapters 4,5 and 6. A comparison of figures 2-7 (polyclinic outpatients) and 10-14 (sick children) shows that the number of kebele served with higher rates (4 or more per 100 population) was higher for the sick children hospitals and health stations than for the polyclinic hospitals and health centres. The phenomenon may be related to the fact that children tend to be sick more frequently than adults. More kebele with higher rates were also served by sick children health institutions than by those for antenatals (Figs. 10-14 and 18-23). Tables 11, 25 and 33 show the effect of distance on the per capita utilisation rates of the health institutions studied for the 3 types of patients. Although

greatly influenced by the distribution of population and number of patients treated, the rates were high in the 0-1 km distance for all the health institutions studied. The effect of distance on the rates was stronger, however, for the health centres and health stations than for the polyclinic and paediatric hospitals. The falls in the rates with increasing distance were gradual for the hospitals and sharp for the health centres and health stations. The situation reveals that patients were more prepared to travel further to specialists and specialized health institutions than to lower level health facilities.

7.2 Catchment Areas

7.2.1. Within Addis Ababa: Catchment areas within Addis Ababa for the 3 types of patients (polyclinic, sick children and antenatals) show that the polyclinic outpatient hospitals (Tekur Anbessa, Paulos and Ras Desta) and the 2 paediatric hospitals (Ethio-Swedish and Yekatit-12) served patients from all the kebele of the city (Figs. 2,3,4,10 and 11; Table 38). The 2 sick children hospitals had larger areas of influence than the 3 polyclinic health centres (Kebele 18 served 241 kebele, Talian Legasion - 135 kebele and Kolfe - 85 kebele), Table 38. The 3 polyclinic health centres, however, had larger zones of influence than their own antenatal service areas (kebele 18 - 100 kebele, Talian Legasion - 33 kebele and kolfe - 50 kebele) and the antenatal service areas of the 3 health stations (Gulele - 66 kebele, Etege Mesk - 69 kebele and Lideta 62 kebele). The 3 polyclinic health centres also had larger areas of influence than the 3 health stations for sick

Table 38: Number of Kebele Served in Addis Ababa by 5 Hospitals, 3 Health Centres and 3 Health Stations - 1978 E.C.

FACILITY	Number of Kebele Served		
	Polyclinic Outpatients	Sick Children	Antenatals
Tekur Anbessa Hospital	All Kebele*	-	-
Paulos Hospital	All Kebele	-	-
Ras Desta Hospital	All kebele	-	-
Ethio-Swedish Hospital	-	All Kebele	-
Yekatit-12 Hospital	-	All Kebele	-
Kebele 18 Health Centre	241	-	100
Talian Legasion Health Centre	135	-	33
Kolfe Health Centre	85	-	50
Gulele Health Station	-	69	66
Etege Mesk Health Station	-	63	69
Lideta Health Station	-	84	62

Source: [illegible]

* Refers to the 264 kebele in Addis Ababa.

children (Gulele-69 kebele, Etege Mesk 63 kebele and Lideta 84 kebele). The 3 health stations had larger sick children areas of influence than those of Talian Legasion (33 kebele) and Kolfe (50 kebele) health centres for antenatals. Sick children catchment areas for Gulele and Lideta Health Stations were larger than those for antenatals of the same facilities. The antenatal zone of influence for Etege Mesk Health Station (69 kebele) was larger than that of its own for sick children (63 kebele).

Distance Decay: The distance decay gradients in figs. 8, 15 and 24 show that Ethio-Swedish Hospital has the flattest of all the health institutions studied for the 3 types of patients, followed by Tekur Anbessa Hospital. Yekatit-12 Paediatric Hospital has the steepest gradient of the hospitals studied for both sick children and polyclinic outpatients. The antenatal gradients for the 3 health centres were steeper than those for polyclinic outpatients of the same health centres. Lideta Health Stations's gradient for sick children is flatter than those for polyclinic outpatients in the 3 health centres. The gradient for Etege Mesk (antenatals) is the flattest of all the 3 types of patients in both the health centres and health stations.

If catchment areas within Addis Ababa were to be determined on the nature of the distance decay gradients, Ethio-Swedish Hospital, followed by Tekur Anbessa Hospital would have the largest area of influence of all the facilities studied. The antenatal zone of influence for Etege Mesk Health Station would be the largest of all the 3 types of patients in both the health centres and health stations.

7.2.2. Catchment Area by Administrative Region:

Outpatients: Table 39 shows the distribution of patients by administrative region and type of patient. The largest proportion of all polyclinic patients, sick children and antenatals lived in Addis Ababa (88.0%), followed by those in Shewa (7.6%) and other administrative regions (4.4%). There were, however, considerable

Table 39: Number and Proportion of Polyclinic Patients, Sick Children and Antenatals from Addis Ababa, Shewa and Other Regions by Type of Patient and Facility - 1978 E.C.

Type of Patient	Type of Facility	Addis Ababa		Shewa		Other Regions		TOTAL	
		No.	%	No.	%	No.	%	No.	%
Polyclinic Outpatients	3 hospital - Tekur Anbessa - Paulos - Ras Desta	92826	83.1	11454	10.2	7440	6.7	111720	100.0
	3 health centres - Kebele 18 - Talian Legasion - Kolfe	22241	95.5	731	3.1	317	1.4	23289	100.0
	TOTAL	115067	85.2	12185	9.0	7757	5.8	135009	100.0
Sick Children	2 hospitals - Ethio-Swedish - Yekatit-12	38269	92.4	2317	5.6	844	2.0	41430	100.0
	3 health stations - Gulele - Etege Mesk - Lideta	9532	98.8	120	1.2	1	0.0	9653	100.0
	TOTAL	47801	93.6	2437	4.8	845	1.6	51083	100.0
Antenatals	3 health centres - Kebele 18 - Talian Legasion - Kolfe	3104	98.5	46	1.4	2	0.1	3152	100.0
	3 health Stations - Gulele - Etege Mesk - Lideta	4623	99.4	27	0.6	0	0.0	4650	100.0
	TOTAL	7727	99.1	73	0.9	2	0.0	7802	100.0
GRAND TOTAL		170595	88.0	14695	7.6	8604	4.4	193894	100.0

Source: Patient registration books for 1978 E.C.

variations between the 3 types of patients. Antenatals had the highest proportions from Addis Ababa (99.1%) and only 0.9% from Shewa with hardly any attendants from the other administrative regions. The combined proportions for the 3 polyclinic hospitals (Tekur Anbessa, Paulos and Ras Desta) and the 2 paediatric hospitals (Ethio-Swedish and Yekatit-12) show that the 3 polyclinic hospitals had larger proportions from Shewa (10.2%) and other administrative regions (6.7%) than the 2 paediatric hospitals combined (5.6% from Shewa and 2.0% from other regions). Although the 3 polyclinic health centres (Kebele 18, Talian Legasion and Kolfe) combined had lower proportions from Shewa (3.1%) and the other administrative regions (1.4%) than the 3 polyclinic hospitals and 2 paediatric hospitals, they had larger proportions than those for sick children and antenatals in both the 3 health stations and the same 3 health centres.

Inpatients: A comparison of the distribution of all inpatients of the 3 polyclinic hospitals (Tekur Anbessa, Paulos and Ras Desta) with that of the inpatients for Ethio-Swedish Paediatric Hospital (Table 40), shows that Ethio-Swedish Hospital had a lower proportion from Addis Ababa (79.6%) and higher proportion from Shewa (14.5%) and other administrative regions (5.9%). If we compare the distribution of inpatients in Ethio-Swedish Hsopital with those of the 3 polyclinic hospitals separately, Ethio-Swedish Hospital had larger proportions from Shewa (14.5%) and the other administrative regions (5.9%) than 2 of the 3 hospitals, namely, Paulos and Ras Desta. Tekur Anbessa Hospital, with 80.9% of its patients from Addis Ababa, 11.4% from Shewa and 7.7% from other administrative regions had a larger catchment area than Ethio-Swedish Hospital.

Table 40: Distribution of Inpatients in the 3 Polyclinic and 1 Paediatric Hospitals - by Region, 1978 E.C.

Type of Patient	FACILITY	Addis Ababa		Shewa		Other Regions		TOTAL	
		No.	%	No.	%	No.	%	No.	%
Polyclinic	Tekur Anbessa Hospital	3330	80.9	471	11.4	317	7.7	4118	100.0
	Paulos Hospital	4127	89.5	278	6.0	205	4.5	4610	100.0
	Ras Desta Hospital	781	86.8	86	9.5	33	3.7	900	100.0
	TOTAL	8238	85.5	835	8.7	555	5.8	9628	100.0
Paediatric	Ethio-Swedish Hospital	1553	79.6	283	14.5	114	5.9	1950	100.0

Source: Patient registration books - 1978 E.C.

7.3. Referral of Patients: A total of 4600 interviewees for the 3 types of patients were asked about their referral status (whether they were referred by health institutions or came on their own) including 1800 polyclinic outpatients in 3 hospitals and 3 health centres, 1400 sick children in 1 hospital and 5 health stations and 1400 antenatals in 1 hospital, 3 health centres and 3 health stations. Table 41 shows the number and proportion of referred and self-referred patients for the 3 types of patients. Out of the total patients interviewed, only 241 (5.2%) were referred and the remaining 4359 (94.8%) were self referred patients. The 3 hospitals and 3 health centres providing polyclinic outpatient services had the highest proportions of patients referred (10.1%). Only 3.4% of the sick children and

0.9% of the antenatals were referred. Table 12,26 and section 6.2.2 in Chapter 6 reveal that the proportion of patients referred to Tekur Anbessa Hospital (25.5%)¦ followed by Paulos Hospital (11.5%), was the highest of all the health institutions studied for the 3 types

Table 41: Referral Status for 4600 Patients by Type of Patient

Type of Patient	Referral Status				TOTAL	
	Referred		Non-Referred			
	No.	%	No.	%	No.	%
Polyclinic Outpatients	182	10.1	1618	89.9	1800	100.0
Sick Children	47	3.4	1353	96.6	1400	100.0
Antenatals	12	0.9	1388	99.1	1400	100.0
TOTAL	241	5.2	4359	94.8	4600	100.0

Source: Structured interviews by the writer.

of patients. The proportion of patients referred to Ras Desta Hospital (7.25%) was higher than the highest proportion for antenatals (5.5%, Gandhi Hospital). Only 10.8% of the patients interviewed in Ethio-Swedish Hospital were referred;0.8% of the patients in the 3 polyclinic health centres (Kebele 18, Talian Legasion and Kolfe), 0.4% of the sick children in the 3 health stations (Gulele, Etege Mesk and Lideta) and 0.1% of the antenatals in the 2 health centres (Talian Legasion and Kolfe) and 4 health stations (Addis Ketema, Gulele, Etege Mesk and Lideta) were referred. Table 42 shows the distribution of referred patients by place of residence (Addis Ababa and other administrative regions). The proportions referred from the rural areas were higher for polyclinic patients (57.4%) and antenatals (63.6%) than those from Addis Ababa. The proportion of sick children referred from Addis

Table 42: Distribution of Referred Patients by Place of Residence for the 3 types of Patients.

Type of Patient	Referred Patients					
	Addis Ababa		Other Regions		TOTAL	
	No.	%	No.	%	No.	%
Polyclinic	69	42.6	93	57.4	162	100.0
Sick Children	29	65.9	15	34.1	44	100.0
Antenatals	4	36.4	7	63.6	11	100.0
TOTAL	102	47.0	115	53.0	217	100.0

Source: Structured interviews by the writer.

Ababa (65.9%) was higher than that from other regions. Reference to the totals shows that 53.%of the patients referred came from other administrative regions and the remaining 47.0% came from Addis Ababa. On the whole, referral of patients was poor or undeveloped for all the 3 types of patients. It was relatively better for polyclinic outpatients than for sick children and antenatals.

This study indicates that referral of patients in the 3 polyclinic hospitals ranged between 7.3 (Ras Desta) and 25.5%(Tekur Anbessa Hospital), Table 12. The proportions of patients referred in the 3 polyclinic health centres (Kebele 18, Talian Legasion and Kolfe), 1 paediatric hospital (Ethio-Swedish) and 3 health stations (Gulele,Etege Mesk and Lideta) for sick children ranged between 0 and 10.8%(Tables 12 and 26). A health care utilisation study in Addis Ababa revealed that 13-22% of the patients in the hospitals and 0-9% of those in the health centre and health stations studied

were referred (Kloos et al., 1987a:163). Another study also indicated that referral of patients for 7 hospitals in Addis Ababa ranged between 2.0% and 36.7% of the patients interviewed in each hospital (Hailu Meche and Mehari Woldeab, 1984:69). This writer believes, therefore, that the results obtained in this study are fairly consistent with the findings of previous studies.

7.4 Type of Illness

Since almost all the antenatals interviewed came to the health institution for pregnancy check-ups, they have been excluded from this section. Polyclinic outpatients in 3 hospitals (Tekur Anbessa, Paulos and Ras Desta) and 3 health centres (Kebele 18, Talian Legasion and Kolfe) and sick children in 1 hospital (Ethio-Swedish) and 5 health stations (Addis Ketema, Gulele, Etege Mesk, Lideta and Beletshachew) were asked about the type of illness for which treatment was sought. The major categories of illness (non-infectious diseases including heart attack, diabetes and blood pressure, diarrhoea and other abdominal conditions; conditions on head and neck including eye, ear, teeth, headaches and external injuries on head, face and neck; and coughs are shown by type of patients (Table 43). Out of the total 3200 patients interviewed 10.5% said that they were suffering from non-infections diseases. Diarrhoea and other abdominal conditions represented the highest proportion (23.0%). Conditions on head and neck and all coughs accounted for 18.3%and 18.6%, respectively. As expected, the proportion of children with non-infections diseases was much lower (2.6%) than that of polyclinic outpatients (16.8%). Those who had diarrhoea

Table 43: Number and Proportion of Patients for the 4 Major Types of Illnesses Reported by 2255 Polyclinic Outpatients and Sick Children.

Type of Patient	Type of Illness*								TOTAL	
	Non-Infections		Diarrhoea and....		Head and Neck		All Coughs			
	No.	%	No.	%	No.	%	No.	%	No.	%
Polyclinic outpatients	302	16.8	375	20.8	449	24.9	147	8.2	1273	70.7
Sick Children	36	2.6	361	25.8	137	9.8	448	32.0	982	70.1
TOTAL	338	10.6	736	23.0	586	18.3	595	18.6	2255	70.5

Source: Structured interviews by the writer.

* The number and proportions of patients are out of the total patients interviewed for each type of patient.

and other abdominal problems accounted for 20.8% and 25.8% of all polyclinic outpatients and sick children, respectively. The proporportion for coughs was lower for polyclinic outpatients than for sick children and the reverse holds true for conditions on head and neck.

Some general conclusions may be drawn from the prevailing illness patterns for polyclinic outpatients and sick children. The higher prevalence of non-infections diseases in adult polyclinic patients than children is due to age. Children are more exposed to diarrhoea than adults since they have more contact with infectious agents and probably have built up less immunity. Coughs were more prevalent among children than among adults indicating that most coughs were due to acute respiratory infections.

CONCLUSION

This study revealed that the health care utilisation patterns of the facilities studied were influenced by a number of factors. Distance was the most important factor in catchment areas and per capita utilisation. The level of service offered and apparently alleged reputation of facilities encouraged patients to travel further to the hospitals than to the health centres and health stations from both Addis Ababa and other administrative regions. Because of lower intervening opportunities at hospital level, Ethio-Swedish Paediatric Hospital served higher proportions of patients from Shewa and other regions than all the hospitals studied with the exception of Tekur Anbessa Hospital, the national referral centre. The number of kebele served in Addis Ababa and the distribution of patients from Addis Ababa, Shewa and other administrative regions indicate that the polyclinic health centres had larger catchment areas than the health stations for sick children and antenatals. This may be related to factors such as level of service and the perceived quality of treatment or reputation.

The distance decay gradients revealed, irrespective of the level of service offered, that physical distance between the health institutions and residences of patients was a major barrier. The slopes were, as expected, steeper for the health centres and health stations than for the hospitals which provide a quantitative measure of catchment area and coverage. The progressively decreasing proportions of patients from Addis Ababa, Shewa and other administrative regions could not be quantified but nevertheless also indicate the effect of distance on health care utilisation.

The correlation coefficients for distance and utilisation reflect the statistically significant relationship between the 2 variables and the coefficients of determination reveal that a significant proportion of the vatiation in the utilisation of the health facilities can be explained by distance. This study also demonstrates the applicability of the negative exponential model, which was used by Stock in rural Nigeria (1983), to health care utilisation studies in urban areas.

The gradual decline in the per capita utilisation rates for the hospitals and the sharp falls beyond 1 or 2 km distance for the health stations reflect that patients are willing to travel further to specialists and specialized health institutions than to lower level health facilities. Per capita utilisation rates consider population distribution and thus provide a better and more meaningful coverage of health care delivery and catchment area than mere distribution of patients which does not take population distribution into account (Kloos et al., 1987a:158).

The fact that a small proportion of all the patients interviewed for the 3 types of patients (polyclinic, sick children and antenatals) was referred reflects that referral of patients was inadequate in the hospitals and almost non-existent in the health centres and health stations. The proportion of polyclinic patients referred from the rural areas was higher than that from Addis Ababa. Referral proportions to the polyclinic hospitals and health centres in this study are consistent with previous studies (Kloos et al. 1987a; Hailu Meche and Mehari Woldeab, 1984). The lower referral rate for interviewed rural than urban sick children obtained in this study required further investigation.

A report on referral of patients in Addis Ababa (MOH, 1986b:51-55) concludes that strengthening the referral systems can alleviate the health care delivery and utilisation constraints prevailing in the city. According to this report, prepared by a committee to study the referral system in Addis Ababa, shortages of manpower, equipment and other facilities should not be pretexts for not materializing the referral system in Addis Ababa. The committee recommends, therefore, the following major points for the realisation of an efficient referral of patients: 1) health services should be organized at kebele, ketena (zonal), regional and national levels and referral of patients should be both upward and downward, 2) patients should get treatment first in their own respective residential areas and referred to the next higher level for better treatment 3) transport services should be improved 4) seminars should be given to health personnel and the public should be made conscious of the advantages of the referral system and 5) a permanent committee responsible for strengthening the referral system should be established.

In the writer's view, in addition to the recommendations given above, strengthening and up grading lower level health institutions and strict implementation of target areas can also improve the referral system in Addis Ababa.

The higher proportion for the combined polyclinic and sick children inpatients than outpatients from Shewa and other regions reflects that more seriously ill patients were prepared to travel further for treatments that may require hospital admission.

With regard to type of illness, higher proportion of sick children than polyclinic patients reported to have diarrhoea. This may be

attributed to the fact that children have more contact with infectious agents and may probably have developed lesser immunity. Further study are needed on the impact of the geographic distribution of illness on duration of illness and health seeking behaviour on utilisation.

Duration of illness was significantly related to distance for both sick children and polyclinic patients. The fact that the proportion of patients with shorter duration of illness was higher for patients from Addis Ababa indicates that patients from the rural areas had less access to the health institutions in Addis Ababa.

The proportion of free polyclinic patients from the rural areas was significantly higher than for Addis Ababa in Tekur Anbessa Hospital only. The reason is probably that free patients from other regions are sent mainly to Tekur Anbessa Hospital although this needs further study.

The fact that larger proportions of patients in the hospitals than in the health centres and health stations used motorized transport indicates that patients were more willing to pay for transport to travel further to higher than lower level health institutions.

The low proportion of patients using traditional medicine and the higher proportion using modern medicine may indicate that the latter is relatively more accessible in Addis Ababa. The high proportion of patients who did not obtain any prior treatment may be related to socio-cultural and economic distance although this needs further study. The lower proportion for previous use of traditional medicine in this study than in the household study by Kloos et al. (1987b:1011) may be due to lack of privacy in our interviews and the

nature of the present study in modern medical facilities, where patients tend to hesitate to talk about traditional medicine.

Assigning target areas for the health centres and health stations as part of improving the referral system may promote health care delivery and utilisation in Addis Ababa. Not all the health centres and health stations, however, had clearly defined target or geographical service areas. All health stations which had target areas policy failed to implement them because of the delayed implementation of the referral programme by the Ministry of Health.

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Questionnaire for Polyclinic Outpatients and Sick Children

1. Name of facility _____

2. Age of patient _____ *3. Sex of patient _____

*4. For what illness did you come here today?

_____

*5. How long have you had this illness? _____

6. What do you think is the cause of your illness?

_____

*7. Did you do anything for this illness prior to coming here today? Yes _____ No_____

*8. If 'yes' what specifically did you do?

a) Traditional medicine at home excluding professional traditional healer (specify type of medicine)

b) Tebel (give name and location)

Name _____ Location _____

c) Traditional healer (specity type of healer and location)

Type of healer _____

Location of healer _____

d) Drug from pharmacy

Name _____ Location _____

e) Clinic: Name _____ Location_____

f) Hospital: Name _____ Location _____

g) Others: Name _____ Location _____

9. If 'NO' why did you not use any health service before coming here today (there may be more than one reason)

a) _____

b) _____

c) _____

---

* Because of time constraint, the questions with asterisks only were analysed in the paper.

*10. Where do you live?

If Addis Ababa, Keftegna _____ Kebele _____

If rural, region _____ Awraja _____ Town _____

11. If patient is outside Addis Ababa: What were your two major reasons for coming to Addis Ababa? (rank in terms of importance).

a) _____ b) _____

*12 What type of transport did you use to come here from your residence? (there may be more than one type)

a) on foot _____ b) animal (specify) _____

c) stretcher _____ d) cart _____

e) bus _____ f) taxi _____ g) service _____

h) ambulance _____ i) own car _____

13. How long did it take you to travel to this facility? (from your place of normal resdience) _____

14. How much did you pay for transportation to this health facility?

_____

*15. Are you coming to this facility on your own or were you referred by another health institutions?

a) Own decision _____ b) Referred _____

16. If you came on your own, why did you choose to come to this health facility?

a) near my home

b) one or some of my relatives or friends working here _____

c) I know this facility before _____

d) I receive free treatment here _____

e) Treatment costs little here _____

f) Good service _____

g) Others (specify) _____

*17. If you were referred, name the health institution.

Name _____ Location _____

*18. What is your payment status?

a) full paying _____ b) half _____

c) credit _____ d) free patient _____

*19. If a free patient from what kebele or peasant association did you get your certifying letter?

a) Name _____ b) Location _____

20. How many times did you use the modern health services for any illness during the last 30 days? (including today).

a) Pharmacy _____ b) hospital _____

c) Health centre _____ d) health station _____

21. What is the occupation of the head of the household (in Amharic) _____

Questionnair for antenatals or postnatals in Health stations, health centres and Gandhi Hospital

1. Name of health facility _____
2. Age of mother _____
*3. Why did you come here today?
   a) antenatal check-up (list the number of antenatal check-ups obtained for this preganance)
   b) Postnatal check-up (list the number of postnatal check-ups obtained for the last birth)
   c) Complication (other delivery)
   d) Other (specify)
*4. Did you come on your own or were you referred?
   a) On my own _____ b) Referred _____
5. If on your own, why did you choose this health facility?
   a) I hve been here before _____
   b) It is near my home _____
   c) I get free service here _____
   d) I have relatives or friends working here _____
   e) good service _____
   f) other reasons (specify) _____
*6. If referred, from which health institution were you referred?
   Name _____ Location _____
*7. In what month of pregnancy are you now? _____
*8. How many times have you visited this or any other modern health facility during this pregnancy?
   a) This health facility _____
   b) Other. Name _____ Location _____
9. Did any pregnancy result with the dealth of the fetus?
   Yes _____ No _____
10. If yes how many still births occured _____
   and where did they take place ? _____
   a) at home _____ b) clinic _____ c) hospital _____

*11. Where do you live?

a) Addis Ababa: Keftegna _____ Kebele _____

b) Rural Area: Kifle Hager _____ Town _____

12. What type of transport did you use to travel here today? (list all types used).

13. How much time did it take you to reach here? _____

14. How much did you pay for transport _____

15. What is the occupation of the head of the household (in Amharic)

_____

DECLARATION

I, the undersigned declare that this thesis is my work and all the sources of material used for the thesis have been duly acknowledged.

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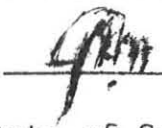
Signature: 

Place and Date of Submission : Addis Ababa

July, 1988