ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

HEALTH SEEKING BEHAVIOUR

IN ADAMI-TULLU WOREDA;

WITH EMPHASIS TO INDIVIDUALS WITH STD SYMPTOMS

A THESIS SUBMITTED TO

THE SCHOOL OF GRADUATE STUDIES OF

ADDIS ABABA UNIVERSITY

BY

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MAY, 1995

ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES

Health Seeking Behaviour Among Individuals with STD Symptoms

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ACKNOWLEDGEMENTS

I am very grateful to Dr. Mesfin Kassaye, my principal thesis advisor, for providing me with relevant advises and encouragement throughout the conduct of this study.

I am also grateful to Dr. Derege Kebede for his precious contributions to the analysis part of the study, and Dr. Yemane Birhane for reviewing the content.

The department of community health is acknowledged for providing the necessary technical and logistic support, and making this study possible.

My thanks go also to the International Development and Research Centre Canada (IDRC-C) for funding this research.

My gratitude also goes to the East Shewa Zone and Adami-Tullu Woreda Health Departments for facilitating activities during data collection, data entry into the computer and during the remaining stages of the conduct of the study.

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Summary

In Ethiopia and other developing countries the prevalence of STDs and their complications, as well as, resistance to antimicrobials is believed to be widespread. A community-based, cross-sectional study was conducted in Adami-Tullu Woreda during Sept.- Oct., 1994, to estimate the prevalence of STDs, and identify determinants of health seeking behaviour of individuals with STD symptoms. A total of 2240 individuals aged 12-49 years were enrolled in to the study using a cluster sampling method. The two-week prevalence of STD symptoms was 2.5% among individuals aged 12-49 years. Rate of seeking health care among individuals with STD symptoms was 26.8%. Perceived severity of illness, and also lack of money were significant determinants of health care seeking among individuals with STD symptoms, OR=0.23, 95% CI(0.05,0.95), and OR=3.29, 95% CI (1.63,6.66), respectively. It is concluded that the majority of individuals with STD symptoms do not seek health care due to high cost of STD treatment services and also because the diseases are not considred severe enough. Expansion of health education and other preventive services targeted at STDs, and free STD curative services to the rural communities, are recommended.

1.0 **Introduction**

Sexually Transmitted Diseases are a group of over 50 infectious diseases which are all transmitted mainly by sexual contact. The causative agents include bacteria, such as N. gonorrhoea, C. trachomatis, T. pallidum, H. ducreyi; viruses, such as herpes simplex, hepatitis B, human papilloma and human immuno deficiency virus; protozoa, such as T. vaginalis; and fungal agents, such as C. albicans (1).

For several decades STDs have ranked among the top five diseases for which adults in developing countries seek health care services. However, it is only since the early seventies that they have been recognized as important public health problems and been ranked in importance among diseases such as malaria, diarrhoeal diseases, malnutrition and tuberculosis. But still it was not until the emergence of HIV/AIDS epidemic that the importance of the classic STDs was widely appreciated (2)

STDs are a major public health problem in both developed and developing countries, but the prevalence rates are apparently far higher in developing countries where STD treatment is less accessible (3-5).

On average an estimated 685,000 people are infected every day with STDs globally. Every year there are about 250 million new cases, nearly as many as of malaria (6).

STDs appear to often be treated outside the orthodox health care system in many parts of Africa, meaning, many patients do not enter into the official health care system and statistics (7). In many countries clinic surveys are the best available indicators of STD levels. The true extent of STDs in the general population remains unknown for several reasons:

- Both men and women may suffer from asymptomatic STDs, but women more so than men. For example, 70% of women and 30% of men infected with Chlamydia may be asymptomatic as well as 30% of women and 5% of men infected with gonorrhea (8,9).
- Many people with STDs do not seek care, and in developing countries people are not routinely screened for STDs when they seek other health care.
- Because of the stigma attached to STDs, many people seek care from providers who do not report cases.

Antibiotic resistance of N. gonorrhoea to the penicillin and to tetracycline, and of H. ducreyi to penicillin, sulfonamides, trimethoprim and tetracycline, is more widespread in the third world than in Europe and the US.

Contributing to this are the inappropriate use of antibiotics and automedication. In certain parts of Africa for instance more than 50% of the strains of N. gonorrhoea are penicillinase producing, compared to 7% in the US (2). As a result penicillin and tetracycline are no longer appropriate first line treatments for gonorrhoea in many developing countries. Alternative treatments are more expensive, and thus less available in public health services and less affordable for the average patient (1).

The causes of relatively high STD rates in Africa are to be found more in poverty and its consequences such as chronic shortage of funds and personnel for STD prevention and treatment that constrain virtually all health programs in Africa, reluctance on the part of STD sufferers to consult medically trained personnel, inappropriate self-medication, relatively low condom user rates, and probably ineffective treatment from traditional healers, among other factors (10-13).

The problem of STDs in Ethiopia is generally believed to be similar to that of other developing countries. STDs ranked sixth among the 15 most frequently reported disease groups by MOH health facilities, making up 4.7% of all cases of communicable diseases in 1986-87 (14).

But, to date, there are no studies in this country dealing with the health seeking behaviour of individuals with STDs at a community level and the prevalence of the diseases in the population is unknown.

This study is, therefore, intended to come up with an estimate of the STD prevalence and also identify the barriers interfering against the contact of individuals with STD symptoms with the appropriate health care providers at the right time.

2.0 Objectives

General Objective:

To estimate the prevalence of STDs and identify determinants of health care-seeking behaviour among individuals with STD and/or other symptoms in Adami-Tullu Woreda.

Specific Objectives:

To estimate the prevalence of STDs in the study population.

To identify factors determining the health seeking behaviour of individuals with STD symptoms and those with other symptoms.

3.0 Literature Review

Health Seeking:

A variety of factors influence the practice of health behaviours, including social factors, emotional factors, cognitive factors, perceived symptoms, and factors relating to access to medical care (16).

The most highly influential and highly researched theory of why people practice health behaviour is the health belief model (17-18). This model states that whether or not a person practices a particular health behaviour can be understood by knowing two factors: the degree to which the person perceives a personal health threat and the perception that a particular health practice will be effective in reducing that threat.

Some components of the model predict sick role behaviour (such as taking care of oneself or seeking medical attention). In particular, perceived benefits of a practice and perceived severity of the problem were both associated with sick role behaviour (19).

For most people health care is initiated when they or their relatives recognize that they are sick, but the factors that result in a patient contact with the health

services are very complex. Variations in response to sickness and in utilization exist from person to person and for any one person at different times (20). This variation is also believed to exist from disease to disease in the same person.

Studies of health services utilization often seek to study the proportion of people who use the services and their frequency, the trends in service use and the possible mechanisms that may determine this use. Utilization studies therefore have a wide appeal to the policy makers, managers and providers of health care, particularly when they pinpoint mechanisms susceptible to change and better management. In addition the ultimate justification of health services utilization studies lies in the relationship of service use to improving the health status of the population (21,22).

Several studies of health services utilization have been carried out in Ethiopia. At the national level, considerable differences in population based utilization rates were reported for 1975/76 and 1985/86 between rural and urban areas and among the 15 administrative regions present during the time (23). Factors identified in these variations were health services distribution, famine, government-sponsored resettlement and the civil war in

the northern part of the country (24). Ahmed Zein et al. (25) reported that 66% of paediatric in-patients of Gonder Regional Hospital were residents of Gonder town, with most of the remaining patients from nearby rural awrajas (districts). In sidamo Regional Hospital, 60% of the in-patients admitted in 1985/86 lived within 3 km walking distance, and twice the expected number of poor patients lived in the same town and the same woreda (subdistrict) compared to the more distant rural areas (26). Accessibility is generally significantly greater for urban than rural patients in developing countries (27), but in a small town in northern Ethiopia only 28% of all households reporting illness used the local health centre (28) and 40% of all patients had not received any type of medical treatment, mainly due to high cost (29). Comparison of 1000 users and 1000 non-users of four health stations in Shewa Administrative Region showed that the five most important factors in utilization were quality of service, knowledge about the importance of services, cost of services, education of patients and the availability of free-treatment certificates for poor patients (30). In several rural communities in Western Shewa Region only 26% of the ill persons used modern health services, 52% used traditional medicine and 23% had not received any treatment for their illness (31). According to the 1982/83 National Rural Health Survey,

which was carried out among 13,000 randomly selected households, only 135 of all ill persons used modern health services and 72% allegedly received no treatment at all. Most non-users (33%) found the health services too expensive; 14% considered their illness to be self-limiting; 12% used traditional medicine; and 10% considered the distance of health services from their homes to be excessive (31). In Ethiopia and other developing countries, total cost of treatment comprises not only treatment cost but also cost of transport, lodging and food away from home, and time lost from production and family support, all increasing with distance travelled and duration of absence (32).

In general, geographic, socioeconomic and cultural barriers between patients and modern health services, as well as the scarcity of these services and the ready availability of traditional medicine have been associated with their under-utilization in both rural (30,33) and urban Ethiopian communities (31,34). Health services utilization is related to such factors as perceived sickness or need, family type and size, income and cost of care, as well as the level of services provision and their distribution (19).

It is generally recognized that perceived need is the

major prerequisite leading to demand for and use of health services (35,36). In addition, the knowledge people have about the available health services and their perception of the quality of these services as well as their satisfaction, may affect both initial contact with these services and compliance with any prescribed treatment (37,38).

Health care utilization can be viewed, therefore, from two different viewpoints: first, it can be seen as a dynamic process consisting of different stages through which the patient passes and the decisions that are made at different stages; second, utilization can be described as an outcome (measured by consultation rates) of the complex interaction of determining factors. This separation, however, is only artificial and really serves for descriptive purposes only (19).

Sexually Transmitted Diseases:

Sexually transmitted diseases are a major public health problem in both developed and developing countries, but the prevalence rates are apparently far higher in developing countries, where STD treatment is less accessible (3-5). Among women, syphilis prevalence rates may e 10 to 100 times higher in developing countries; gonorrhea rates may be 10 to 15 times higher;

and chlamydia rates may be 2 to 3 times higher (39). Incidence rates are also higher. For example, the annual rate of new gonorrhea infections in large African cities is 3,000 to 10,000 per 100,000 population, or as many as one in every 10 people (3-5).

By comparison, in the US the annual incidence of gonorrhea was 233 per 100,000 population in 1991, and in Sweden, about 30 per 100,000 in 1987 (3-5). Compared to industrialized countries, most sub Saharan African countries appear to have also higher rates of standard STDs such as gonorrhea and syphilis, higher proportions of antimicrobial-resistant organisms and higher levels of complications from STDs including pelvic inflammatory disease, infertility and adverse pregnancy outcomes. (7,40).

Prevalence figures for specific STDs are often lacking or unreliable, however screening of pregnant women in many parts of Africa has yielded syphilis prevalence rates of atleast 10%, and gonorrhea prevalence rate of 10% to nearly 20% in some areas (41-45), and they are only slightly lower in many others (46). In Zambia STDs are second only to malaria in recorded number of cases of 11 diseases, and it has been suggested that many cases of STDs in that country are not recorded because they are

treated by traditional healers and because the diseases are regarded as shameful in that their presence suggests 'loose morals' (47).

The consequences of STDs can be devastating: infants, infected at birth, with blinding eye infections or pneumonia; women suffering chronic abdominal pain, ectopic pregnancy or infertility; and men with infertility. Women may suffer social consequences as well: telling a husband about an infection may result into beatings and divorce, and husbands may abandon infertile wives. Syphilis can maim or kill infants, and it kills adults as well, sometimes years after the initial infection. Indirectly, STDs also kill through spontaneous abortion, and ectopic pregnancy (48).

STDs and their sequelae are costly to individuals and the health care system. Many people with STDs seek care from private providers, where they may pay one-quarter to one-third of their monthly earnings for drugs (49,50). Also, STDs reduce the productivity of men and women in the prime of their lives. For example, in urban areas of sub-Saharan Africa with a high prevalence of STDs, syphilis causes the loss of an estimated 9 productive days per capita per year for the entire urban population; HIV infection leads to the loss of 48 days (51).

STDs and HIV/AIDS:

Other STDs make it easier for HIV to pass from one person to another. Chancroid, chlamydia, gonorrhea, syphilis, and trichomoniasis may increase the risk of HIV transmission by two to nine times (52,53). The link between HIV infection and other STDs may partly explain why HIV in heterosexual populations is more prevalent in Africa than in Europe and the US, where STDs are more often treated and cured (52).

Carried in body fluids, HIV may leave one person's body and enter another's more easily through genital ulcers. HIV itself has been isolated from the genital ulcers of women with HIV infection (54). Thus the link is clearest between HIV infection and STDs that cause genital ulcers, although not all studies found an association. Six of ten studies in Kenya and Zaire, for example found that people with genital ulcers, caused mainly by chancroid, were more likely to be infected with HIV than people without ulcers. Their risk was two to five times greater. Nine of 11 studies of syphilis and HIV infection found an association. Syphilis increased the risk of HIV infection 3-9 fold for heterosexual men. Three of six studies of genital herpes and HIV infection found an association. Herpes doubled the risk of HIV infection for women and heterosexual men (53).

Six studies found that chlamydia, gonorrhea, and trichomoniasis, which do not cause ulcers, increase the risk of HIV transmission to women by three to five times (53). Several studies, however, have found no link between these STDs and HIV infection, but methodological problems may have obscured the connection. The STDs may enhance HIV transmission because they increase the number of white blood cells, which are both targets and sources of HIV, in the genital tract and because genital inflammation may cause microscopic cuts that can allow HIV to enter to the body. Disease causing vaginal and urethral inflammation are far more common than genital ulcer diseases and so may be responsible for a larger share of HIV transmission (48).

Infection with HIV also affects the other STDs. In people with HIV infection other STDs may be more resistant to treatment. For example, several studies have reported that one-dose treatment for chancroid failed at least six times more often in HIV-infected patients than in patients without HIV infection (54,55). Also, syphilis lesions may last longer in people infected with HIV, and these people may get gonorrhea more often (53). Thus HIV enhances its own transmission: With longer-lasting STD symptoms, people with HIV infection are more likely to transmit HIV and increase the pace of the AIDS epidemic (48).

The role of STDs, especially those that are untreated or improperly treated, in the transmission of human immuno deficiency virus (HIV) in Africa has also become fairly well established. Whereas in the United States or Europe most AIDS cases result from homosexual activity or parenteral (skin piercing) transmission, most AIDS cases in Africa have been found to be heterosexually transmitted (56-58).

The most common mode of HIV transmission in Ethiopia is also heterosexual transmission due mainly to multiple sexual partners and a high level of promiscuity among both female and male population, a large and increasing number of prostitutes, and the high prevalence of other coexisting STDs which are expected to increase the chance of HIV transmission by a factor of 3 to 10 (59).

While it may be premature to conclude that the incidence of particular STDs must be reduced by some predictable amount if the spread of AIDS is to be curtailed in Africa, it makes public health sense to proceed as if STDs play a key role in the spread of AIDS and to renew efforts to reduce the incidence of STDs in Africa - especially since the reduction of STD incidence is a worthy public health goal in itself (7).

The two cornerstones of STD control programs are the reduction of risky sexual behaviour, including the use of condoms or other mechanical or chemical barriers, and the

early diagnosis and treatment of STDs (1). The aim of prompt diagnosis and treatment of STDs is not only the prevention of complications but also the prevention of secondary cases of STDs in sex partners of infected individuals. So far little information exists on the coverage of STD patients in the community by allopathic health services, but it is thought that only a small percentage of STD patients reach modern and appropriate health facilities in many countries. Reasons for this probable low coverage, and the resulting high prevalence of STDs in the community, include the lack of symptoms in patients, especially in women; cultural beliefs surrounding the etiology of STDs, whereby patients prefer to attend traditional healers,(7) and the shortage of accessible and acceptable curative services with the necessary skills and drugs to deal effectively with STDs.

4. Methods

Study Area:

The study was conducted in Adami-Tullu Woreda (sub-district), which is one of the fourteen woredas in East Shewa Zone of Oromiyaa Region. Zeway town, capital of the woreda, is located 160 kms. South of Addis Ababa along the main road to the Southern regions of the country that extends to the neighbouring Kenya.

By extrapolation of the 1984 National Census report of Adami-Tullu Woreda, the 1994 population was estimated to be 86,500. The Urban: Rural and Male : Female ratios are 1:2 and 1.06:1.00, respectively.

The district has one health centre, one health station, one malaria control centre, twelve pharmacies and four other governmental organization clinics, all concentrated in the two towns Zeway and Bulbulla. More than 15 small private clinics were also known to be operating in the same woreda, however, all of these clinics were banned by the regional administration and health bureau two months prior to the beginning of this study, and remained officially closed throughout the study period.

During the study period, there were 2 physicians, 15 nurses, 14 health assistants, 1 pharmacist, 1 pharmacy technician, 1 midwife, 2 laboratory technicians, and 1 sanitarian in the woreda.

There were also a total of 50 TBAs and 32 CHAs trained in the woreda in the years preceding the study period. Only 6 of the recently trained CHAs are known to be functioning in three health posts opened through assistance obtained from the Food and Agricultural Organization (FAO). There are no reports from the remaining CHAs and TBAs. There are no data on the number of other alternative health care providers like traditional healers (herbalists), bone-setters, 'kalicha' and 'Tsebel'.

Adami-Tullu lies in the rift valley and it is a malaria endemic area with two peak seasons of epidemics during Sept.-Dec. and May-July. Malaria has always been the first top diagnosis of health institutions in the woreda. STDs have also been in the list of top ten diagnoses of the woreda, as far as records could tell (60). STD treatment services used to be provided free of charege for a few years through the assistance from the STD division of the Ministry of Health. But since the last two years patients are being charged for these services.

Study Design:

This is a community based, cross-sectional study. The source population in this study was the population of Adami-Tullu Woreda. Individuals aged 12-49 years were the study population and households were the sampling unit. Individuals were entered into the study if they were aged 12-49 years unless mentally.

Sampling:

The sampling procedure employed in this study was a multi-stage sampling; *cluster sampling* followed by a *systematic sampling*. 11 urban and 19 rural clusters were selected out of four urban dwellers' associations (Kebeles) and 63 peasant associations. The sample included every third household with a random start until a total of 75-77 individuals were obtained for interview from each cluster.

An average of 3 individuals (Father, Mother and Son or Doughter) aged 12-49 years were expected per household so that 770 households should be selected out of 30 clusters, by systematic sampling method. Accordingly, an average of 25 households were visited per cluster until 75-77 individuals in the age group 12-49 years were obtained from each cluster (Appendix II).

The sample size was calculated on the basis of a pilot study carried out in a part of the same woreda that came up with the following rates;

Prevalence of STD symptoms in the population of Abossa town and the neighbouring peasant associations was 2.5%. Frequency of visit to modern health care providers was 55% and 25% among individuals with symptoms of malaria and STDs, respectively. (Pilot study carried out on a sample of 100 individuals as part of the same study, Sept. 1994)

n = sample size required

$P_1 = 25\%$; $P_2 = 55\%$;

Power = 90%; $\alpha = 0.05$

$$n = \frac{(ZB+Z\alpha)^2 \; [\; P_1(100-P_1) + P_2(100-P_2) \;]}{(P_1 - P_2)^2}$$

$$n = \frac{(1.28+1.96)^2 \; [25(100-25) + 55(100-55)]}{(55 - 25)^2} = 50$$

2.5% prevalence of STDs and 15% drop-out rate implied that required sample size to obtain 50 individuals with STD symptoms would be 2,300.

Variables:

Factors related to health care seeking were studied using a structured questionnaire prepared first in English and translated to Amharic and Oromiffa, and finally translated back to English to insure its consistency. It consisted mainly of closed ended questions and was used to obtain information on individuals' socio-economic status, illnesses as known or perceived by the individual within the preceding two weeks, severity of illness, the possibility of cure without health care, possibility of worsening of symptoms, the type of health care provider perceived best by the individual, and whether the subject visited a health care provider. There were also more questions on what types of health care providers are available to the individual in the 'nearby'. Income and distance to a health care provider were estimated from the residence and occupation of the individual respectively, (27,28) due to the well known unreliability of income information obtained from interviews in Ethiopia (31).

Operational Definitions:

The diagnosis of STDs was based on the syndromic classification of the diseases as adopted by the WHO (61); as urethral discharge in males and genital ulcer in both sexes. Malaria was defined as fever and chills and

pneumonia was defined as acute cough (less than 3 months), sputum production, fever, and chest pain (32).

A comparable sample size of urban and rural respondents, individuals aged 12-49 was surveyed, and the required size was obtained (Appendix II). Repeat visits were made to households where eligible study subjects could not be interviewed during the first visit.

Data Collection:

Eight interviewers that are all grade 12 graduates and capable of speaking both Amharic and Oromiffa were trained for five days about basic skills of interviewing, selection of households and indications of repeat visits and related topics.

The structured questionnaire prepared both in Amharic and Oromiffa, was discussed thoroughly with the interviewers, pretested through a pilot study over a part of the same woreda, modified, and finally applied through a house-to-house visit. Frequent, and often unscheduled field visits were made. Check-up of completed questionnaires was made daily by the principal investigator.

Study subjects were informed about the purpose of the study as it relates to their health-seeking behaviour.

Inquiries about STD symptoms were mixed up with other symptoms of other illnesses. Involvement into the study was on the basis of an informed consent in accordance with the selective disclosure of information.

Privacy was maintained during interview and confidentiality of information was assured by excluding names from identification of study subjects.

The study population was enabled to benefit directly through referral of sick individuals to the health centre or health station in the same woreda. Arrangements were also made with the health institutions to facilitate the management of these patients.

Ethical clearance for the study was obtained from the Research and Publication Committee of the Department of community Health and the Faculty of Medicine.

Analysis:

Data were entered and stored into a computer. EPI-INFO Version 5 and the Statistical Aanlysis System version 6.03, were applied for data analysis. Odds ratios were calculated and data were presented using tables.

5.0 **Result**

Response Rate:

Sixty (2.6%) of the otherwise eligible individuals were not available at home for interview due to various reasons, eventhough a repeat visit was made to each of them. The remaining 2240 were successfully interviewed resulting in a response rate of 97.4%.

Socio-demographic Characteristics:

The study group consisted of 1298 (57.9%) females and 942 (42.1%) males. The mean age of respondents was 25 years. The majority were rural residents, married, and Muslims, accounting for (63.4%), (60.5%) and (53.1%), respectively (Table 1). 1099 (77%) of the rural respondents were illiterate and 635 (77.5%) of urban respondents were literate.

Illness Behaviour:

Out of 2240 individuals covered in the study 72.9% reported as having atleast one disease symptom during the two-week-recall period before interview. Out of these, 56.7% were females, 62.3% were rural residents, 59.5% were Muslims, 72.0% were Oromo, 35.3% were housewives, 31.3% were peasants, 55.3% were married, and 56.3% were illiterate. 96.4% of these individuals reported one

disease type and 3.6% reported two diseases. The mean duration of illness before seeking any health care was 10 days. Overall, more older individuals, peasants, and house-wives reported disease symptoms, (Table 2).

1400 (85.7%) of individuals who reported at least one symptom believed that they have some kind of disease, whereas, the remaining 233 (14.3%) believed they have no disease. The overall reported disease prevalence rate was 62.5%.

Four disease groups; malaria, sexually transmitted diseases, respiratory tract disease, and gastro-intestinal diseases, accounted for 22.9%, 5.6%, 5.0%, and 4.8% of the reported disease types, respectively. Overall, these diseases constitute 38.4% of individuals reporting sickness. Regarding the report of STDs combined with other diseases, the overall reported prevalence rate of STDs in this study was 4.3% (96).

Health Seeking Behaviour:

The malaria control centre, the health centre, and the health station were the major health care providers visited in the woreda , accounting for 41.3%, 20.7%, and 13.6% of the visits made to health care providers within the two week recall period (Table 3).

Table 1. Socio demographic characteristics of study subjects, Adami Tullu Woreda, 1994.

Variable	(N=2240) #	%
Residence		
rural	1421	63.4
urban	819	36.6
Sex		
male	942	42.1
female	1298	57.9
Age		
12 - 14	441	19.7
15 - 24	779	34.8
25 - 34	460	20.5
35 - 44	384	17.1
45 - 49	176	7.9
Religion		
Orthodox Christian	776	34.6
Muslim	1356	60.5
Other	108	4.8
Ethnicity		
Oromo	1635	73.0
Amara	328	14.6
Other	277	12.4
Marital Status		
single	942	42.1
married	1190	53.1
other	108	4.8
Educational status		
illiterate	1283	57.3
literate	957	42.7
Occupation		
peasant	675	30.1
government employee	84	3.8
merchant	43	1.9
house wife	768	34.3
student	316	14.1
other job	4	0.2
no job	350	15.6

Table 2. Socio-demographic characteristics of individuals reporting disease symptoms, Adami-Tullu, 1994.

Variable	symptom Popln.	#	(%)	OR (95% CI) Crude	adjusted
Residence					
rural	1421	1018	(71.6)	1.00*	1.00*
urban	819	616	(75.2)	1.20(0.98,1.47)	1.33(0.90,1.97)
Sex					
female	1298	926	(71.3)	1.00*	1.00*
male	942	708	(75.2)	1.22(1.00,1.48)	1.14(0.87,1.50)
Age**					
12-14	441	293	(66.4)	3.05(1.91,4.87)	2.43(1.46,4.05)
15-24	779	555	(71.2)	2.44(1.55,3.83)	2.36(1.47,3.39)
25-34	460	341	(74.1)	2.11(1.31,3.38)	2.21(1.37,3.58)
35-44	384	294	(76.6)	1.85(1.14,3.00)	1.97(1.21,3.22)
45-49	176	151	(85.8)	1.00*	1.00*
Religion					
Muslim	1356	972	(71.7)	1.18(0.97,1.43)	1.11(0.81,1.53)
Other	884	662	(74.9)	1.00*	1.00*
Ethnicity					
Oromo	1634	1177	(72.0)	0.83 (0.67,1.03)	0.95(0.70,1.28)
Other	605	457	(75.5)	1.00*	1.00*
Marital Status					
married	1190	904	(76.0)	1.00*	1.00*
other	1298	984	(75.8)	0.72 (0.60,0.87)	0.97(0.71,1.31)
Educational status					
illiterate	1283	920	(71.7)	1.00*	1.00*
literate	957	714	(74.6)	1.16 (0.95,1.41)	1.19(0.92,1.54)
Occupation					
peasant	675	512	(75.9)	1.45 (1.15,1.84)	1.76(1.29,2.40)
house-wife	768	576	(75.0)	1.38 (1.10,1.73)	1.69(1.16,2.46)
others	797	546	(68.5)	1.00*	1.00*

* referent group

** Chi-square for trend = 21.948, ($P < 0.0001$)

Among individuals who reported at least one symptom, 412 (25.2%) visited one health care provider, 19 (1.2%) visited two, and 4 (0.2%) visited three health care providers within the two weeks before interview, whereas, 1199 (73.4%) have not sought any health care, giving rise to a 26.7% rate of visit among the study population. Reasons for not seeking health care were; disease perceived not sever or expecting spontaneous improvement 38.2%, lack of money 28.3% and other reasons 33.4%.

Out of those with disease symptom, apparently, urban residents and males sought health care more often. But after controlling for the other variables with a multivarate ananlysis, none of the socio demographic variables remained to be significantly associated with seeking health care (Table 4). Individuals who perceived their symptoms very severe sought health care more, compared to those who considered their symptoms less severe. Those who considered the modern health care most effective to their disease sought health care more. Individuals who believed that cure was not possible without health care, and those who considered the possibility of worsening of untreated symptoms, sought health care more than others (Table 5).

Table 3. Health care providers visited by individuals aged 12-49, within two weeks period, in Adami-Tullu Woreda, South Ethiopia. Sept.-Oct. 1994

Type (N=436)	# of Individuals	%
1. Malaria Control Centre	191	41.3
2. Health Centre	96	20.7
3. Drug Vendor (Pharmacy)	63	13.6
4. Health Station	30	6.5
5. Traditional Healer (Herbalist)	27	5.8
6. Private Clinic	21	4.5
7. Other GO Clinics	10	2.2
8. Missionary Clinic	6	1.3
9. Tsebel	1	0.2
10. Bone Setter	1	0.2
11. Community Health Agent	1	0.2
12 . Others	16	3.5
Total	463	100.0

Table 4. Socio-demographic determinants of health care seeking among individuals with disease symptoms in Adami Tullu Woreda, South Ethiopia. 1994

Variables	Popln.	Sought HC # (%)	Crude OR (95% CI)	Adjusted OR (95% CI)
Residence				
rural	1018	241 (23.7)	1.00*	1.00*
urban	616	195 (31.7)	1.49 (1.19,1.88)	1.52(0.75,3.09)
Age				
12 - 14	293	87 (29.7)	0.71 (0.45,1.12)	1.16(0.51,2.64)
15 - 24	555	150 (27.0)	0.81 (0.53,1.24)	1.09(0.52,2.28)
25 - 34	341	94 (27.6)	0.79 (0.51,1.24)	0.85(0.41,1.78)
35 - 44	294	70 (23.8)	0.97 (0.61,1.53)	1.19(0.56,2.55)
45 - 49	151	35 (23.2)	1.00*	1.00*
Sex				
female	925	222 (24.0)	1.00*	1.00*
male	709	214 (30.2)	1.37 (1.09,1.72)	1.47(0.89,2.42)
Religion				
Muslim	972	229 (23.6)	1.00*	1.00*
other	662	207 (31.3)	1.47 (1.18,1.84)	0.89(0.51,1.57)
Ethnicity				
Oromo	1177	293 (24.9)	0.73 (0.57,0.92)	0.93(0.55,1.58)
other	457	143 (31.3)	1.00*	1.00*
Occupation				
House-wife	576	130 (22.6)	1.00*	1.00*
Peasant	511	134 (26.2)	1.29 (1.21,2.06)	1.06(0.61,1.85)
Others	546	172 (31.5)	1.58 (1.21,2.06)	0.92(0.47,1.80)
Marital status				
married	904	224 (24.8)	1.24 (0.99,1.55)	0.88(0.51,1.50)
other	984	243 (24.7)	1.00*	1.00*
Educational status				
illiterate	920	233 (25.3)	1.00*	1.00*
literate	714	203 (28.4)	1.17 (0.93,1.47)	0.81(0.51,1.29)

* referent group

Table 5. Perception related determinants of health care seeking among individuals with disease symptoms. Adami Tullu Woreda, South Ethiopia. 1994

Variables	Popln.	Sought HC # (%)	Crude OR (95% CI)	Adjusted OR (95% CI)
Perceived severity				
very severe	547	242(44.2)	2.72 (2.27,3.25)	2.44(1.88,3.17)
not severe	1087	194(17.8)	1.00*	1.00*
Cure without health care				
impossible	1211	380(31.4)	0.49(0.40,0.60)	0.10(0.07,0.15)
I don't know	191	32(16.8)	1.00*	1.00*
Possibility of worsening of symptoms				
yes	1252	387(30.9)	1.37(1.09,1.72)	2.69(1.49,4.86)
no	150	25(16.7)	1.00*	1.00*
Health care provider perceived best				
Modern	1212	388(32.0)	1.16(0.94,1.44)	0.12(0.07,0.21)
Traditional	188	24(12.8)	1.00*	1.00*

* referent group

Illness Behaviour and Health Care Seeking among Individuals With STD Symptoms:

STD symptoms were reported by rural residents 48(3.4%) more than by urban dwellers 8(1.0%). More males, 41 (4.4%) reported STD symptoms compared to females 15 (1.2%). Married individuals had more STD symptoms 43 (3.6%) compared to others 13 (1.2%). Peasants had more STD symptoms 35 (5.2%) compared to individuals with other occupation. But after adjustment with the logistic regression model, only males were found to have reported significantly more STD symptoms than females (Table 6).

Based on the syndromic classification adopted by WHO, the overall prevalence of STDs in this study was estimated to be 2.5% among individuals 12 - 49 years old, and 3.0% when considering those aged 15 - 49 separately (Figure 1, Table 7). Out of 56 individuals identified as having STD symptoms, 15 sought health care within the two weeks reference period of the study, comprising of 26.8%. Five individuals visited a health centre and four others visited the malaria control centre, whereas, drug vendors and private clinics were visited by two individuals each. The remaining two visited a health station and another government organization's clinic.

Table 6. Socio-demographic characteristics of individuals with STD symptoms, Adami-Tullu Woreda, South Ethiopia, 1994.

Variable	Popln.	STD # (%)	Crude OR(95%CI)	Adjusted OR (95% CI)
Residence				
urban	819	8 (1.0)	1.00*	1.oo*
rural	1421	48 (3.4)	3.45 (1.61,8.14)	2.27 (0.57,8.93)
Age				
12 - 14	441	2 (0.5)	0.12 (0.02,0.64)	0.28(0.04,1.69)
15 - 24	779	16 (2.1)	0.59 (0.22,1.54)	1.07(0.36,3.18)
25 - 34	460	17 (3.7)	1.08 (0.42,2.80)	1.69(0.62,4.62)
35 - 44	384	15 (3.9)	1.15 (0.43,3.02)	1.38(0.51,3.72)
45 - 49	176	6 (3.4)	1.00*	1.00*
Sex				
female	1298	15 (1.2)	1.00*	1.00*
male	942	41 (4.4)	3.89 (2.07,7.40)	7.55(1.53,37.04)
Religion				
Muslim	1356	45 (3.3)	2.72 (1.35,5.61)	1.26(0.49,3.21)
others	884	11 (1.2)	1.00*	1.00*
Ethnicity				
Oromo	1635	49 (3.0)	2.64 (1.14,6.41)	0.78(0.25,2.39)
other	605	7 (1.2)	1.00*	1.00*
Occupation				
Peasant	675	35 (5.2)	6.17 (2.61,15.32)	1.40(0.43,4.51)
House-wife	768	14 (1.8)	1.59 (0.06,4.36)	2.25(0.36,13.99)
Others	797	7 (0.9)	1.00*	1.00*
Marital status				
married	1190	43 (3.6)	2.99 (1.55,5.88)	1.57 (0.67,3.71)
other	1050	13 (1.2)	1.00*	1.00*
Educational status				
literate	957	21 (2.2)	1.00*	1.00*
illiterate	1283	35 (2.7)	1.25 (0.07,2.24)	1.35(0.70,2.62)

* referent group

The age, OR=1.61, 95% CI (0.40,6.53); occupational status, OR=1/61, 95% CI (0.29,4.54); and eductional status, OR=1.61, 95% CI (0.28,4.54), of individuals with STD symptoms were not associated with their health seeking. The other socio-demographic characteristics of these individuals could not be assessed for associations with seeking health care due to low number of the individuals. Only individuals with STD symptoms who considered their illnesses very severe were found to have sought health care more than the others, OR=0.23, 95% CI (0.05,0.95).

Among those who reported at least one symptom, there was no difference between the groups, with and with out STDs, in their perception of the severity of symptoms, the length of days before seeking health care, sickness perception, knowledge of possibility of worsening of symptoms, knowledge of possibility of cure without health care, and type of health care provider perceived best to their particular illness. Among individuals with disease symptoms, there was no difference between those with STDs and those without STDs in their rate of seeking health care, (30.0%), and (29.4%) respectively, OR=0.97, 95% CI (0.51,1.88). There was also no difference between individuals with STD symptoms and those with symptoms of pneumonia, OR=1.37, 95% CI (0.60,3.12). But there was a

statistically significant difference between those who have not sought health care in their reasons for not seeking health care; those with STD symptoms complained about lack of money more than the others, OR = 3.29, 95% CI = (1.63, 6.66). On the other hand the rate of seeking health care was higher among individuals with malaria symptoms compared to those with STD symptoms, OR=3.31, 95% CI (1.70,6.50).

Among individuals with STD symptoms, 21 (37.5%) had additional symptoms of malaria, and another 11 (19.6%) had symptoms of pneumonia and malaria. The presence of other symptoms of malaria was associated with health care seeking among individuals with STD symptoms, whereas, the presence of pneumonia symptoms or the simultaneous presence of the three did not affect the rate of seeking health care OR=0.21, 95%CI (0.04,1.03).

Table 7. Prevalence of the different syndromes of STDs in Adami Tullu Woreda, South Ethiopia. 1994

Distribution	#	%
▼ Based on WHO's definition		
Prevalence of syndromes:		
■ urethral discharge	31	3.3
■ genital ulcer	28	1.3
- in male	13	1.4
- in female	15	1.6
▼ Vaginal Discharge	52	4.0
▼ PID (vaginal discharge, lower abdominl pain, fever)	23	1.8

6.0 Discussion

The results of this study revealed that a considerably high reported morbidity existed in the community particularly during malaria epidemic seasons of the year. Nevertheless, only a quarter of the sick people visited a health care provider within two weeks after onset of their illnesses.

The rate of reported illnesses in this study, (62.5%), is much higher than previous reports by Kitaw Y. (8.7%-16.4%), by Kloos H. et al. (22.7%), or by the National Rural Health Survey (29.3%) (31,32,60). Apart from the difference in age group of the study population to the other studies, a possible explanation would be the fact that the present study was conducted during the peak seasons of malaria epidemic in an endemic area.

The study demonstrated also that the modern health care providers received the major share of visits by patients, while only a very small proportion being left to traditional healers (herbalists, bone setters, Tsebel, etc.). But at the same time, it has to be assumed that not all visits to traditional healers may be reported, due to various reasons including fear of accusations by the government.

The proportion of visits to modern health care providers (Hospitals, Health centers, Malaria Control Centre, Health stations, Drug vendors, Missionary clinics, Other government organizations' clinics and Community health agents), 434 (93.7%), compared to visit to traditional healers, is much higher than previous reports by Kloos et al. 33.3% (31) and the National Rural Health Survey (28). Likewise, the rate of visit to traditional healers or herbalists, 6.3%, is very low compared to the above mentioned study. A similarly low role of traditional healers (8.4%) was reported by Shamebo D. (63).

The overall rate of visit to a health care provider in this study, 26.7%, is similar to findings in other studies (28,31). 73.3% of individuals with disease symptom made no visit to any health care provider. A similar rate was reported by the National Rural Health Survey (71%) and by a study in North Ethiopia by Dagnew MB. (65%). A much lower rate (22%) was reported in the study by Kloos et al. (31) and by Kitaw Y. 30% (62).

Perceived severity of illness, and knowledge of possibility of worsening of symptoms if untreated, were important determinants of health care seeking. This finding is supported by other studies (16,19). Unlike the case in other studies, (32), distance to a health

care provider and economic status, as estimated by residence and occupation, respectively, were not found to be associated with health care seeking.

The rate of perceived STDs 97 (4.3%) is much higher than previous reports in the country that explained the very low rate, 0.05% and 0.14% by the fact that STDs are stigmatized diseases along with diseases like Leprosy, Tuberculosis, Mental disorders, Epilepsy and Spirit possession, and as a result, under reported (31,60). The 2.5% prevalence of STDs in this study, based on the WHO syndromic classification, could not be compared to other studies due to lack of similar community based studies using the same operational definition.

Males were found to have more STD symptoms mainly because the WHO syndromic classification of STDs concentrates more on the male problems while including only genital ulcer of the female, and ignoring vaginal discharge which could be a manifestation of different STDs like gonococcal or non-gonococcal cervicitis, trichomoniasis, candidiasis, etc.. Nevertheless, the wide CI(1.53,37.04) shows that the sample size of individuals with STD symptoms has not been large enough for this comparison.

Rural residents reported more STDs 48 (3.4%) compared to urban dwellers 8 (1.0%). Though this difference was not statistically significant through the logistic regression model, OR=2.27, 95% CI(0.57,8.93) it has a striking social relevance reflecting the fact that the rural residents are presented with much less access to information, as well as, other preventive and curative services agains STDs. This urban rural inequality of access to health services was also reported in another study in the Northern part of the country (28).

The apparently low prevalence of STD symptoms in this study could also be explained by the particular nature of the diseases which are sensitive, private matters, not easily and freely disclosed to anyone who is not expected to provide an immediate medical help. Moreover, a considerable proportion of STDs remain asymptomatic mainly in the female, but also in the male.

The rate of health care seeking among individuals with STD symptoms was found out to be similar to those with symptoms of pneumonia, and also to those with other disease symptom. But it was significantly less when compared to individuals with malaria symptoms, indicating that STD symptoms were not given any more attention when overall reported symptoms are concerned. Whereas,

symptoms like that of malaria were considered important enough to initiate health care seeking. Nevertheless, the comparability of the groups is much limited due to the statistically significant differences in some socio-demographic characteristics including residence, sex, religion and ethnicity, among individuals with the different groups of symptoms.

Similarly, while the presence of additional symptoms of pneumonia in those with STD symptoms didn't make a difference on the rate of health care seeking, those with additional symptoms of malaria sought health care more than others. This fact, also supplemented by the significant difference in the perception of severity between the symptoms of malaria and STDs, signifies the importance of malaria towards health care seeking. This is partly accounted for by the fact that the disease has been at the peak of its epidemic, killing many people in the same area. These visits were possibly made for the malaria complaints rather than for STD symptoms.

Perceived severity of illness was the only perception related determinant of health care seeking identified among individuals with STD symptoms. Individuals with STD symptoms were also more likely to seek health care if they had additional symptoms of malaria.

Individuals with STD symptoms complained of lack of money more than those with other symptoms. This signifies the possibility of high cost of STD treatment services as a barrier to health care seeking among individuals with STD symptoms. High cost of medical services has been reported as a barrier to health care seeking in other studies (29-31). A fairly strong association is evidenced by the OR=3.29. It has also been indicated by the wide CI that the size of individuals with STD symptoms was not large enough.

Generalizability and Limitations:

The finding in this study is believed to be generalizable to populations with a similar socio demographic characteristics and health profile.

Underreporting of STDs was inevitable due mainly to the nature of the study which looked into the delicate private matters of an individual. This is believed to have underestimated the prevalence of reported STD symptoms.

Eventhough the possibility of chance has been attempted to be minimized by interviewing a fairly large size of individuals, only 56 of them were reported to have STD symptoms. As evidenced by the wide CI in the sex distribution of STDs this size could not enable identification of some other potential determinants of health seeking behaviour reported in other studies.

Due to the lack of similar community based studies, dealing with the health seeking behaviour of individuals with STD symptoms, adequate comparison could not be made to other studies. Previous community based studies on health service utilization carried out in this country (28-31) used the general population (all age groups) and were able to identify only very few (less than ten)

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patients with reported STDs. As a result, the comparability of the references used here is much limited due to varying age grops and operational definitions of particularly STDs.

As indicated in the methods, possibility of interviewer bias was minimized by double blinding against interest of the study in STDs so that reporting of STD symptoms was not affected. Social desirability bias, due to the fact that STDs are stigmatized diseases, was attempted to be minimized by mixing up of STD symptoms with other illnesses. Moreover privacy during interview and confidentiality of information were assured.

Non response bias can not be considered a problem in this study as the response rate was 97.4%. The two week recall period also minimized the possibility of recall bias. The use of mainly closed ended questions was a strategy for minimizing bias during designing the study. The five day long training of interviewers, pre-testing through the pilot study, and consequently, standardizing it also helped to minimize observer bias.

The application of logistic regression analysis is believed to have minimized the effct of confounding in this study.

7.0 **Conclusions**

The study allows the conclusion that despite a remarkably high rate of reported morbidity due to various illnesses (mainly malaria), the rate of seeking health care within two weeks period is only about a quarter. But a major portion of the visits made to health care providers was taken by the modern health care system.

Perceived severity of illness, and knowledge of worsening of symptoms if untreated are important determinants of seeking health care among individuals with symptoms.

Considering the limitations inherent in the WHO classification of STDs and also the sensitive nature of the diseases, a 2.5% prevalence of STD symptoms among individuals aged 12-49 years is obtained, which indicates that the diseases are widespread in the community to a considerable extent.

The rural preponderance of STD prevalence increases the importance of the diseases in these communities, and probably signifies the fact that the rural people are exposed to a similar high risk behaviour for STD transmission whereas they are presented with much less access to preventive and curative services.

Perceived severity of illness, and probably the simultaneous presence of additional disease symptoms, like that of malaria, are important determinant of health care seeking among individuals with STD symptoms. Those individuals with STD and malaria symptoms who have sought health care have probably made the visits for their malaria symptoms rather than for the STDs.

In this study it is demonstrated that individuals with STD symptoms do not visit the right health care providers at the right time partly because they do not consider the diseases severe enough, and partly due to lack of money. The problem among these individuals is not one of visiting the "wrong" health care providers (like traditional healers), or of partial or inappropriate treatment in private clinics or drug vendors, or self medication. Instead, a major proportion of them do not visit any health care provider at all for a long time, like a period of two weeks due mainly to lack of money.

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8.0 **Recommendations**

Expansion of STD preventive services including health education about possible complications of untreated STDs, and curative services free of charge, are recommended particularly to the rural communities.

Further studies, with larger sample size are recommended so that adequate number of individuals with STD symptoms are obtained, and further socio demographic and other potential determinants are identified. Qualitative studies with in-depth interviews could also help to identify further barriers to health care seeking.

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Annex-1 **QUESTIONNAIRE**

A study of health-seeking behaviour

INTRODUCTION

Good morning/after noon.

We are employed by members of the Addis Ababa University. We came here to study the distribution of diseases and problems associated with utilization of health services in this woreda. Accordingly, we would like to ask you some questions on health related issues.

We kindly ask your cooperation. Are you willing to help us?
Yes _____
No _____

Thank you.

Date_____

1.0 Ser. No. _____ House number _____
2.0 Address _____ 1. PA [ ] 2. UDA [ ]
3.0 Age in years _____ 4.0 Sex 1. M [ ] 2. F [ ]
5.0 Religion
1. Orthodox Christian [ ] 2. Muslim [ ]
3. Missionary [ ] 4. Other _____
6.0 Ethnicity
1. Oromo [ ] 2. Amara [ ] 3. Gurage [ ]
4. Kambata [ ] 5. Tigre [ ] 6. Other _____
7.0 Occupation
1. Farmer [ ] 2. Government employee [ ]
3. Private business [ ] 4. Housewife [ ]
5. Student [ ] 6. Other _____
8.0 Marital Status
1. Single [ ] 2. Married [ ]
3. Divorced [ ] 4. Widow(er) [ ]
5. Separated [ ]
9.0 Educational Status
1. Illiterate [ ] 2. Read and write [ ]
3. Elementary (1-6) [ ] 4. Secondary (7-12) [ ]
5. College [ ]
10.0 Number of household members aged 12-49 years _____

11.0 Have you taken any type of medication (traditional, modern) in the last two weeks? 1. Yes [ ] 2. No [ ]

11.1 If yes, what type? 1. Injection [ ] 2. Tablets [ ]
3. Ointment [ ] 4. *Tsebel* [ ] 5. Local herb [ ]
6. *Kitab* [ ] 7. Other (specify) _____

12.0 Which of the following health care providers are available in this peasant (urban dwellers') association?
1. Local healer [ ] 2. Drug vendor(pharmacy) [ ]
3. Private clinic [ ] 4. Private Hospital [ ]
5. *Tsebel* [ ] 6. *Wogesha* [ ]
7. TBA [ ] 8. CHA [ ] 9. *Kalicha* [ ]
10. Missionary clinic [ ] 11. Health centre [ ]
12. Health station [ ] 13. Other-government clinic [ ]
14. Malaria control centre 15. Other (specify)_____

12.1 Which of the above health care providers have you visited in the last two weeks? (List in order)

_____ _____
_____ _____

12.2 What was the main reason you preferred the first health care provider?

1. Distance is short [ ] 5. Drugs are available [ ]
2. Cost is cheaper [ ] 6. Waiting time is short [ ]

3. Treatment is good [ ] 7. Reception is good [ ]
4. Qualified personnel are available [ ]

8. I know a relative there [ ] 9. I know their language []
10. We have the same ethnicity with the healers
11. Other reasons _____

_____

12.3 Which health care provider do you think your family or neighbours prefer? _____

13.0 What did you do before going to a health care provider?
1. I consulted my family [ ] 2. I consulted my friends [ ]
3. I consulted my neighbours [ ] 4. I consulted my friends[]
5. I didn't tell anyone [ ] 6. Other _____

13.1 What was the reason you did so?

_____

14.0 Have you had any of the following symptoms in the last two weeks?

1. Fever [ ] 2. Head ache [ ] 3. Shivering [ ]
4. Jaundice [ ] 5. Vomiting [ ] 6. Diarrhoea [ ]
7. Abdominal pain [ ] 8. Cough [ ]
9. Sputum production [ ] 10. Chest pain [ ]
11. Urinary frequency [ ] 12. Painful urination [ ]
13. Urethral discharge (male) [ ] 14. Genital ulcer [ ]
15. Vaginal discharge (female) [ ]
16. Bubo (swellings over the groins) [ ]
17. Lower abdominal pain (supra pubic)[ ]
18. Back pain [ ] 19. Flank pain [ ]
20. Other symptoms _____
20.1 Atleast one symptom reported? 1. Yes [ ] 2. No [ ]

15.0 How was the severity of your illness?
1. not severe [ ] 2. a little severe [ ] 3. very severe []

15.1 How many days did you have your symptoms before going to a health care provider?
1. 1-3 2. 4-6 3. 7-9 4. $\geq$ 10

15.2 Did it prevent you from work? 1. Yes [ ] 2. No [ ]

16.0 Do you think you have some kind of disease?
1. Yes [ ] 2. No [ ]

16.1 What do you think is the name of your illness?

_____

16.2 What do you think is the cause or transmission?

_____

_____

16.3 What do you think is the best treatment?

_____

16.4 Do you think it can be prevented?
1. Yes [ ] 2. No [ ] 3. I don't know [ ]

16.0 Do you think you can get well without treatment?
1. Yes [ ] 2. No [ ] 3. I do not know [ ]

16.1 Do you think your illness can get worse if you are not treated? 1. Yes [ ] 2. No [ ] 3. I do not know [ ]

16.2 If you are not treated, what possible complications of your illness do you know? _____

_____ _____

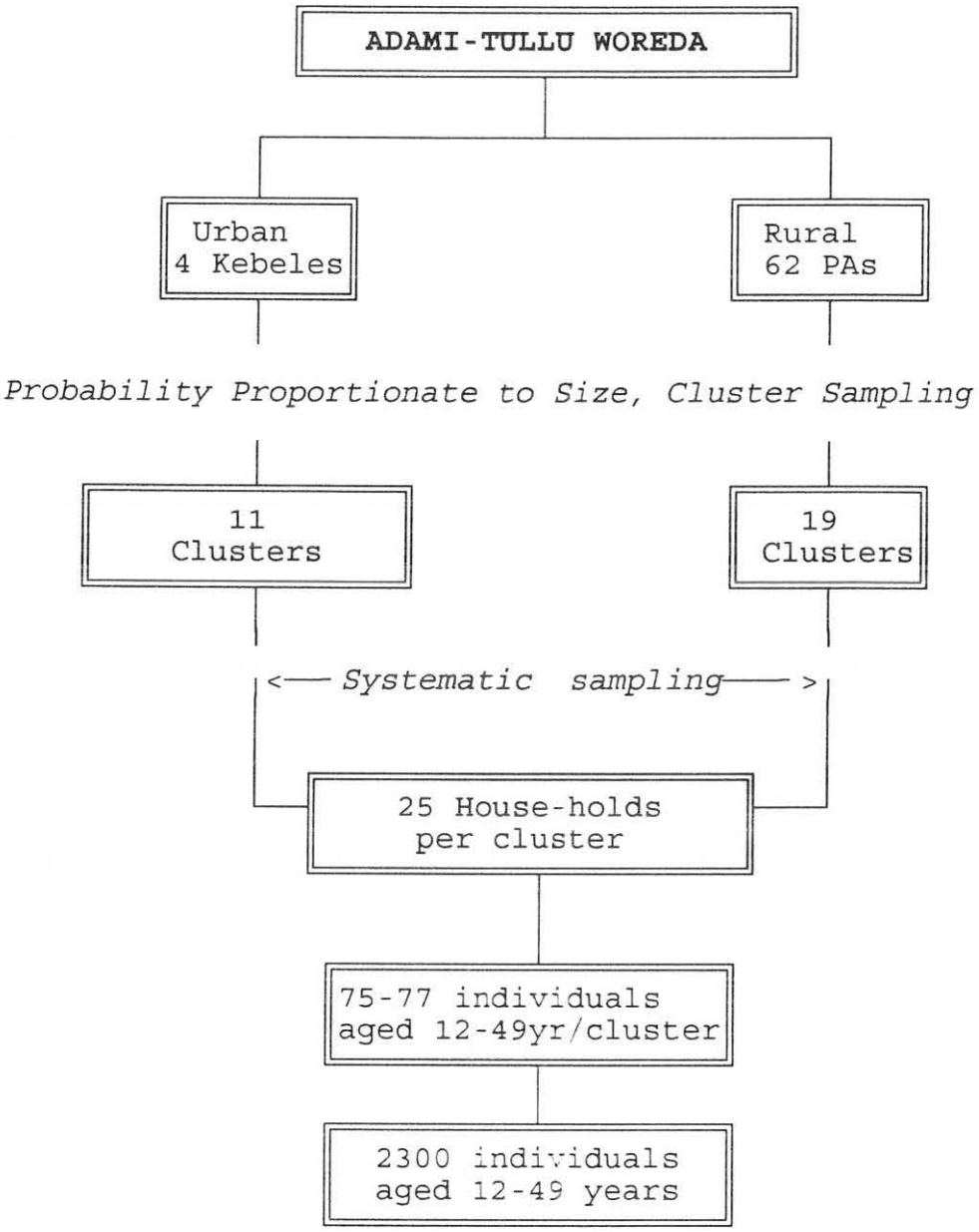
17.0 Which health care provider do you think is the best (most effective) for your illness?

_____

17.1 Did you go to this health care provider?
1. Yes [ ] 2. No [ ]

17.2 If no, why? _____

Appendix II. **Sampling Frame**



DECLARATION

I, the undersigned, declare that this thesis is my original work, has not been presented for a degree in any other university and that all resources of material used for this thesis have been fully acknowledged.

Name : FIKRU TESFAYE, MD

Signature: 

Place : Addis Ababa, Ethiopia

Date of Submission : May, 1995