

Community-based survey of sexually transmitted disease syndromes in Adami-Tullu

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Abstract: Although Sexually Transmitted Infections (STIs) are a major public health problem, and a challenge to reproductive health, there is little epidemiological research on the incidence or prevalence of these diseases in Ethiopia. A community-based, cross-sectional study was conducted in Adami-Tullu Woreda during December 1994 to January 1995, to assess the magnitude and distribution of STI syndromes, and to identify some socio-demographic determinants of the occurrence of these diseases. A total of 2240 individuals aged 12-49 years were enrolled in to the study through a cluster sampling method. Estimation of the magnitude of STI syndromes was made with and without including vaginal discharge and/or pelvic inflammatory diseases (PID). Likewise, the two-week prevalence of reported STI syndromes (urethral discharge in males and genital ulcers in both sexes) was 2.5%, while the other estimate of magnitude of STI syndromes (urethral discharge in males, genital ulcers in both sexes, vaginal discharge in female, fever and lower abdominal pain in female) was at 3.3%. More males and rural residents reported STI syndromes OR = 7.55, 95% CI (1.50,37.0). Considering possibilities of missing asymptomatic infection, this community-level prevalence (2.5% - 3.3%) may be regarded high. Expansion of STI preventive services is recommended particularly to the rural communities. Appropriate health care-seeking behaviors, and information education and communication (IEC) activities should be promoted. [*Ethiop. J. Health Dev.* 2000;14(1):7-12]

Introduction

Sexually Transmitted Infections (STIs) are a group of over 50 infectious diseases which are all transmitted mainly by sexual contact. Although the etiology of STIs involves a number of microorganisms the diseases present themselves mainly in four syndromes (genital ulcer, urethral discharge, vaginal discharge, lower abdominal pain).

STIs are a major public health problem in all countries, but are especially so in developing countries where access to adequate diagnostic and treatment facilities is very limited or non-existent (1-2). The global incidence of these diseases has recently been estimated at 333 million (3). On average an estimated 685,000 people are infected every day with STIs. STIs are responsible for up to 15% of the disease burden in urban

populations in developing countries. In tropical communities with a high prevalence of STIs, these diseases rank only second to malaria in their socioeconomic impact (1-2).

Prevalence figures for specific STIs are often lacking or unreliable, however screening of pregnant women in many parts of Africa has yielded prevalence rates of at least 10%, for syphilis and 10% to nearly 20% in some areas for gonorrhoea (4-8), and they are only slightly lower in many others (9).

STIs are a high priority not only because of their widespread prevalences but also because most STIs are treatable if the affected persons reach effective health care systems (10). Timely and effective care for STIs can reduce their toll by preventing transmission and sequelae.

Improvement in capacity for the early detection and treatment of STIs within an integrated health services system is believed to be one of the most cost-effective strategies to prevent the spread of HIV. In one recent

study, improved treatment of STIs led to a 40% reduction in HIV incidence, indicating the potential contribution of STI care as one of the key strategies in the control of the HIV/AIDS pandemic (11).

The principal constraints to effective STI control, especially in developing countries, include the absence of simple, inexpensive, and accurate diagnostic kits, and little or no epidemiological research on the incidence or prevalence of the disease (1).

The establishment of a definitive etiological diagnosis of STI may be problematic, as it places constraints on time, resources, and access to treatment. It may well be unsuitable for those health units lacking experienced health personnel and/or laboratory facilities, which is the case in many developing countries, including Ethiopia. An alternative to the etiological and clinical approaches is offered by another strategy, the syndromic case management, which depends on the ability to identify and treat the syndromes caused by an STI, with minimal or no requirement for laboratory support (12).

The syndromic approach to STI patient management bases diagnosis on a group of symptoms and treats for all diseases that could cause the syndrome. This approach could make diagnosis more accurate without extensive lab tests and allows treatment with a single visit (12). WHO is strongly encouraging the adoption of the syndromic management of STIs, and it has developed a series of flow charts or clinical algorithms for the standardized management of STI cases (12).

The problem of STIs in Ethiopia is generally believed to be similar to that of other developing countries. But, to date, there are no studies in this country indicating the current magnitude of STIs at a community level. This study is, therefore, intended to come up with an estimate of the magnitude of STI syndromes and identify some determinants of the occurrence of these syndromes among the sexually active age-group (12-49) in Adami Tullu Woreda.

Methods

The study was conducted in Adami-Tullu Woreda which is one of the fourteen woredas in East Shewa Zone of Oromia 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. The 1994 population of the woreda was estimated to be 86,500. The woreda has one health center, one health station, one malaria control center, twelve pharmacies and four other governmental organizations' clinics.

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 (sexually active age group) were the study population and households were the sampling unit.

The sampling procedure employed in this study was a multi-stage sampling; *cluster sampling* followed by a *systematic sampling*. The sampling design, also referred to as *probability proportionate to size (PPS) cluster sampling*, allows that a representative proportion of urban and rural respondents are surveyed so that further comparison between the two communities will be possible. Accordingly, eleven urban and 19 rural clusters were selected out of four urban dwellers' associations (Kebeles, each further divided into smaller units or zones) 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. All household members in the age group 12-49 years were included in the study.

The sample size was calculated on the basis of a pilot study carried out in a part of the same woreda (Abossa village), over a sample of 100 individuals, which resulted in a 2.7% prevalence of STI symptoms in the population of Abossa town and the neighboring peasant associations.

The identification of STI syndromes was based on the World Health Organization's syndromic classification of the diseases with some modification (12,13). It was not possible to fully apply the syndromic approach of

diagnosis of STIs at the field level for the purpose of the study. The identification of STI syndromes at the community level was based only on interview (history of illness). The study was not designed to include clinical examination, as the study setting (house-to-house visits) would not allow such procedures. Therefore, the prevalence estimates are calculated with and without vaginal discharge and/or PID, which may require further clinical and laboratory evaluation. It is assumed that the other syndromes (urethral discharge in the male and genital ulcer in both sexes) are more objective and therefore the interview could enable to obtain a fairly reliable information.

A structured questionnaire was prepared first in English and translated to Amharic and Oromiffa, and finally translated back to English to ensure its consistency. Eight interviewers who have completed high school education and are capable of speaking both Amharic and Oromiffa were trained for three days on basic skills of interviewing, selection of households and related topics. Data were collected during December 1994 to January 1995.

Study subjects were informed about the purpose of the study as it relates to their health-seeking behavior, as this study was a part of another large study concerned with health care seeking behavior. Involvement in the study was on the basis of an informed consent. Privacy was maintained during interview and confidentiality of information was assured. Arrangements were made to benefit the study population through referral of sick individuals to the health center or health station in the same woreda.

Data were entered and stored into a computer. EPI-INFO Version 5 and the Statistical Analysis System version 6.03, were applied for data analysis.

Results

A total of 2240 individuals aged 12-49 years were successfully interviewed and enrolled in the study. The study group consisted of 57.9% females and 42.1% males. The mean

Table 1: Socio-demographic characteristics of study subjects, Adami Tullu Woreda, 1995.

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
no job		354	15.8

age of respondents was 25 years. The majority were rural residents, married, and Muslims. The majority of urban respondents were literate while the majority of rural respondents were illiterate (Table 1).

As can be seen in Table 2, more STI^{*} syndromes were reported by rural residents than by urban dwellers, ie, 48(3.4%) and 8(1.0%), respectively. More males (4.4%), reported symptoms compared to females (1.2%). Married individuals had more symptoms (3.6%) compared to others (1.2%). Peasants had more symptoms (5.2%) compared to individuals with other occupations

Table 2: Socio-demographic characteristics of individuals who reported STI syndromes, Adami-Tullu Woreda, 1995.

Variable	Population	STI # (%)	Crude OR(95%CI)	Adjusted OR (95% CI)
Residence				
urban	819	8 (1.0)	1.00*	1.00*
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(1.5,37.0)
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)	1.4(0.43,4.51)
House-wife	768	14 (1.8)	1.59 (0.06,4.36)	2.2(0.3,13.9)
Others	797	7 (0.9)	1.00*	1.00*
Marital status				
married	1190	43 (3.6)	2.99 (1.55,5.88)	1.57 (0.6,3.7)
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(0.7,2.6)

* referent group

Note: Vaginal discharge and PID have not been considered while examining the socio-demographic determinants

Table 3: Occurrence of the different STI syndromes among individuals aged 12-49 years, Adami Tullu Woreda, 1995

STI Syndromes	(N = 2240)	#	%
Urethral discharge in men		31	1.4
Genital ulcer in men		13	0.6
Genital ulcer and			
urethral discharge in men		3	0.1
Genital ulcer in women		15	0.7
Vaginal discharge in women		52	2.3
Genital ulcer and vaginal discharge			
in women		4	0.2
PID (lower abdominal pain, fever, with or without vaginal discharge)		23	1.0

Note. Total number of individuals with at least one type of STI syndrome are 75 (3.3%).

But after adjustment with the logistic regression model, only males were found to have reported significantly more STI symptoms than females (Table 2).

Based on the syndromic classification of STIs, the two prevalence estimates obtained were 2.5% (urethral discharge and genital ulcers), and 3.3% (urethral discharge, vaginal discharge, genital ulcers, PID), within a two-week study period (Table 3).

Discussion

Considering possibilities of missing asymptomatic infection and under-reporting by the study group, the 2.5% - 3.3% reported prevalence of STI syndromes at the community

level may be regarded high. This prevalence could not be compared to other studies due to lack of similar community-based studies using the same or a similar method. Reports from screening of pregnant women or other clinic attendants can not be compared to findings in this study due to obvious differences in the composition of the study subjects.

Males were found to have more STI syndromes mainly because the criteria used for detection of STI syndromes cover more of the male problems (urethral discharge and genital ulcer), while only genital ulcer was considered in the female. It has been attempted to entertain a second option by including symptoms such as vaginal discharge which could be a manifestation of different STIs like gonococcal or non-gonococcal cervicitis, trichomoniasis, candidiasis, etc.. This additional consideration has yielded a higher prevalence rate of 3.3%. While the detection of PID and abnormal vaginal discharge through only an interview is much less reliable than the detection of urethral discharge and genital ulcers, such an exercise could have a practical importance as it enables to estimate magnitude of the problem in the general public.

Rural residents reported more STIs (3.4%) compared to urban dwellers (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 against STIs. This urban rural inequality of access to health services was also reported in another study in the northern part of the country (14).

The apparently low prevalence of STI syndromes 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 STIs remains asymptomatic mainly in the female, but also in the male.

Underreporting of STIs was inevitable due mainly to the nature of the study that looked into the delicate private matters of an individual.

The rural preponderance in the prevalence of STI syndromes 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 STI transmission whereas they are presented with much less access to preventive and curative services.

Expansion of STI preventive services including health education about the transmission and possible complications of untreated STIs is recommended particularly to the rural communities. Appropriate health care-seeking behaviors and information, education, and communication (IEC) activities should also be promoted.

Other studies that examine the validity/reliability of interview reports of STI syndromes through comparison to clinical and/or laboratory investigation may be applied to obtain a more accurate estimate of the disease prevalence.

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