

HIV infection among the residents of urban slums of Addis Ababa

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Introduction HIV infection in Ethiopia was first identified in 1984 (4) and the first 2 AIDS cases were reported in February 1986 (7). According to the Ministry of Health (MOH), AIDS Control Programme (ACP), of Ethiopia, as of April 30, 1995 a total of 18,049 AIDS cases have been reported by 57 hospitals in the country (16). Out of the total reported cases, 7491 (41.5%) were residents of Addis Ababa. A notable increase of reported cases were observed during 1988–1995. Since then the epidemic of HIV infection has continued to affect a vast number of people in various social, demographic and economic strata (MOH 1990, 1991, 1995).

HIV infection among commercial sex workers (CSWs) was first reported in 1986 in Addis Ababa. In 1988 HIV prevalence among CSWs in urban areas varied between 1.3% in the northern parts of the country and 38% in towns along the Addis Ababa-Assab road, with the mean for all towns being 17% (12).

Moreover, other sexually transmitted diseases are prevalent in the country. According to the report of the Ministry of Health (MOH), from 1985 to 1987, Gonorrhoea, syphilis, chancroid and lymphogranuloma venereum account for 60%, 15%, 11% and 7% of STD pathology, respectively (1).

The objective of this study was to determine the magnitude of HIV infection and condom use and to make use of the findings of this community survey to form the ground work for future efforts to mobilize the community at the grass root level in the initiation of STD/HIV/AIDS prevention and control activities.

Materials and Methods The study was carried out from September 20 to December 20, 1994. It was done in collaboration with the Ministry of Health, Ethiopia, and the Integrated Holistic Approach-Urban Development Project (IHA/UDP [8]). IHA/UDP is one of the local NGOs in the country.

The location of the study area was in four “kebeles” (the smallest administrative units, about 1500 households each) of the capital city. It was one of the most densely populated areas in Addis Ababa city. Many people were living in slums. The people in the study area are, by and large living in poor economic conditions. In addition, the area was grossly congested with poor sanitary facilities.

This study was a cross sectional and community based one, that was carried where IHA/UDP was operational. Upon their free consent, both male and female subjects in the age group of 15-49 years were involved. The target population was 14,000, based on the 1991 census study of IHA/UDP. During the study period, 1601 (11.4%) individuals were included in the study. The only criteria used for the selection of the sample size was the age specificity (15-49) and being a dweller of one of the four "kebeles" where the IHA/UDP was operating.

Prior to the start of the research, meetings were held with the community and community leaders on the proposed research.

Information was gathered from volunteer respondents using a pretested standard questionnaire prepared by STD/AIDS Control Programme, MOH. The questionnaire was designed to focus on socio-demographic, current STD status, previous exposure to STDs, condom use and sexual behaviour of respondents. The information was registered on individual record sheets and was kept strictly confidential.

Two nurses were assigned to provide group health education and to fill in the interview questionnaires of the individuals volunteering for the study. One to one health education was provided by two physicians and informed consent was obtained for all procedures undertaken.

Laboratory investigation such as the Rapid Plasma Reagin (RPR) for syphilis and HIV tests (double ELISA) were done for all attendants irrespective of their presenting complaints. People found positive for RPR and also their known sexual contacts were traced and treated accordingly. Furthermore, the project has rendered counseling and material assistance to HIV positives.

As the study was localized in the four "kebeles" where IHA/UDP have been operating for the last five years, there was a mutual trust and confidence between the staff and the target community. This substantially facilitated the survey work.

Results

Among the total number of study subjects, 1150 (71.8%) were females and 451 (28.2%) were males. The male to female ratio was 1:2.5. The majority of the study group, 1151 (71.9%), belonged to the age group 20-39 years, while 455 (28.4%) were from the age group 15-19 and 40-49 years (Table 1). The mean age of the study subjects was 30.1 years. Moreover, the mean age at first sexual intercourse for males and females was 18.1 years and 16.5 years, respectively, with a mean age difference of 1.6 years. However, we found that 20 (1.7%) females and 17 (3.8) males had not yet initiated sexual intercourse. The median age at menarche for females was found to be 15 years.

Other variables analyzed as sources of background demographic data were marital status, educational level and occupation of the study subjects.

The majority of study subjects of both sexes were married, 833 (52.0%), followed by singles, 540 (33.8%), divorced, 127 (8.1%) and widowed, 97 (6.1%). We have learned from the data obtained that a greater number of informants in both sex groups have attained different levels of education; 397 (24.9%) elementary level, 198 (12.1%) junior secondary level, 339 (21.2%) secondary level. However, those who were beyond twelfth grade were the minority, 31 (1.9%). On the other hand a substantial number of informants were illiterate, 417 (26.1%), and those who could write and read were only 223 (13.9%) [Table 1].

The types of current occupations were found to be diverse and were categorized into twelve main occupational groups. Informants who were grouped as "project staff" were those community members employed in the project with jobs operating under the revolving fund mechanism. A substantial number of informants were reported to be unemployed or daily labourers. However, the difference in social status and financial income among them was not that much, as all would have a chance to work in rotation for a couple of weeks in the project sites. The current occupations of the female study population varied from house wives, (31.1%), to Tella/Tej (local beer) sellers, (2.1%) [Table 1].

Table 1:
HIV status of subjects by selected socio-demographic variables, Addis Ababa, 1995.

Variable	HIV Positive (%)	HIV Negative	Total
Age-group			
15-19	22 (14.3)	132	154
20-24	102 (28.7)	253	355
25-29	71 (25.1)	212	283
30-34	60 (23.6)	194	254
35-39	49 (19.0)	209	258
40-44	29 (20.9)	110	139
45-49	30 (19.0)	128	158
Marital status			
Divorced	31 (24.4)	96	127
Married	174 (20.9)	659	833
Single	125 (23.1)	415	540
Widowed	30 (30.9)	67	97
Unspecified	2	2	4
Level of education			
Illiterate	93 (22.3)	324	417
Read/write	54 (24.2)	169	223
Grade 1-6	91 (22.9)	306	397
Grade 7-8	53 (27.3)	141	194
Grade 9-12	68 (20.1)	271	339
Grade 12+	4 (12.9)	27	31
Current occupation			
Merchant	30 (24.4)	93	123
Peddlers	31 (24.4)	96	127
House Maid	5 (23.8)	16	21
Tella/Tej Sellers	8 (23.5)	26	34
Daily Labourer	44 (23.4)	144	188
Gov. Employee	9 (20.5)	35	44
House Wives	98 (19.7)	400	498
Project staff	27 (19.1)	105	141
Student	10 (10.9)	82	92
Total	363 (22.7)	1238	1601

The HIV infection was detected in 363 (22.7%) people of the study group. The highest HIV seropositivity, 233 (64.2%), was found among the age groups 20-34 and the lowest, 130 (35.8%), was found among the age groups 15-19 and above 35 years. The mean age for HIV positives was 29.6 years and for negatives 30.3 years (Table 1).

HIV tests proved positive in 174 (20.9%) married, 31 (24.4%) divorced, 125 (23.1%) unmarried, and 30 (30.9%) widowed. In contrast to marital status, HIV test results by level of education showed insignificant differences among the study subjects (Table 1).

The highest HIV seropositivity was found among bar tenders 25 (46.3%), mechanics 6 (35.3%), unemployed 70 (26.7%), and the lowest was found among students 10 (10.9%), project staff 27 (19.9%) and house wives (19.7% [Table 1]).

HIV infection was higher among those with STDs than without ($P=0.014$). The prevalence of HIV was higher among people with a history of STDs in the previous 12 months ($P<0.0001$), and in those of the RPR reactive subjects ($P<0.001$ [Table 2]).

Regular use of condoms was noted in only 70 (4.4%) of the study subjects, while 1453 (90.7%) of them were found to have never used condoms (Table 3).

Discussion

The present survey was conducted in a relatively stable community where the majority were females, (71.2%), and the minority, (27.8%), were males. This gender imbalance in the study is also corroborated by the study conducted by IHA/UDP on the socio-economic dimensions of this project area, in February 1990, which showed that 55.7% of the households are headed by females. Likewise, the 1985 World Bank survey of these "kebeles" indicated that 75% of the households are headed by women (21). Therefore, the difference in gender imbalance is explained in terms of a higher percentage of female households having direct contact with the project. Furthermore, males usually move away from the nearby areas to far places in search of jobs.

The majority of the study subjects, (71.8%), belonged to the age group 20-39, and most of them claimed to be married, (52%). However, our observation, as well as the explanation of the project staff, showed that the marital relationship in this community was temporary. These loose relationships among couples in the project area can be explained by the fact that many mothers have four or five children born to different fathers.

The literacy level does not appear to have a significant effect on the prevalence of HIV in the community, which holds true in other studies conducted in the country as well (5, 14).

The largest number of HIV infected people was noted among the age group 20-34 years, which was similar to that of the national figure and another study conducted in Uganda (2, 16). For both sexes, the above age group was the most affected, probably because these are the most sexually active ages.

After age 35 seropositivity decreases with age, as they reduce their sexual activity. Marital status with respect to the prevalence of HIV infection in this study showed that widows and divorcees appear to be more affected, but this is due to the lack of uniformity in the marital status of the study subjects. Therefore, this study does not allow marital status to be counted as a significant factor in HIV infection. Further studies using more uniform groups could clarify its significance.

The reactive serological tests for syphilis and HIV infection have demonstrated a strong association in this study, which also holds true in other studies conducted in and outside the country (3, 6, 13, 19, 20). We found relatively high figures for reactive RPR among 45-59 age group. This might be due to persistent antibodies which result from resolution without treatment, and/or a false positivity could account for the present finding. Therefore, further investigation using confirmatory tests for syphilis could help to strengthen the finding. HIV infection was higher among those who had current STDs than those who had none, and the prevalence of HIV infection was significantly higher among those with a history of STDs in the previous 12 months. Furthermore, the role of sexually transmitted diseases as a significant risk factor for HIV infection is supported by other studies (13, 17, 18).

The use of protective measures for the prevention of HIV infection among the study groups was found to be low compared to previous studies done among different population groups. A survey among CSWs from 23 urban areas in the country (11) and the general population survey (14) sponsored by WHO, showed that condom use reached 5.3% and 37-50%, respectively. Therefore, the reason behind this significantly lower condom utilization found in our study can be explained by the higher number of females in the study population, and by the difficulty of females encountered in asking men to use condoms due to cultural barriers. Similarly, such a correlation between low condom use and a high prevalence of HIV was shown as well in the studies conducted in other countries (10, 17, 18). However, further probing via qualitative studies into knowledge, attitudes, behaviour and practice of the study population is required.

Ultimately, our finding substantiates the link between poverty and HIV infection for both sexes; this is in agreement with the study conducted by Kruger and his colleagues (9). Therefore, impoverished people are at an increased risk of HIV infection, because of their social and physical circumstances which include poor access to risk reduction information and less support to change to safer behaviours.

Conclusion

As a matter of fact, poor urban areas are virtually affected by a number of health problems including STD/HIV/AIDS. Therefore, this study was conducted in one of the poorest areas of Addis Ababa where HIV infection was rampant among the study population.

In poor communities such as where IHA/UDP (local NGO) is currently undertaking integrated development activities, a holistic approach to such a problem is highly important and appreciated. An all round intervention in terms of upgrading the socioeconomic condition of the community, in general, and the physical, emotional and spiritual aspects of STD/HIV/AIDS in particular, should be looked into for those infected individuals.

Health education targeted for safer sex, condom promotion and promotion of early effective treatment of STDs in the project area is necessary. In addition, the community will have a significant number of AIDS cases in the near future, the introduction of community home based care (CHBC) service is highly crucial.

As HIV/AIDS problems are taking on more of an international dimension, it is of a paramount importance to shift development emphasis to prevention and case management.

Summary

The major objective of this study was to determine the magnitude of HIV infection and to make use of the findings for the prevention of HIV/AIDS in the community. A total of 1601 people were enrolled in the study and of those 71.8% were females. The study found a regular use of condoms in only 70 (4.4%) subjects, and HIV infection was detected in 363 (22.7%) of the study population. HIV infection was higher, (24.9%) among those who had current STDs than those who did not (OR, [95%

Table 2:
STDs vs HIV among study population, Addis Ababa, 1995.

Variable	HIV Positive (%)	HIV Negative	Total
STDs Present	225 (24.9)	677	902
STDs Absent	138 (19.7)	561	699
RPR Reactive	39 (37.5)	65	104
RPR Non Reactive	304 (21.6)	1173	1497
Total	363 (22.7)	1238	1601

Table 3:
Distribution of condom use among study population, Addis Ababa, Ethiopia.

Condom Use	Number	Percent
Always	70	4.4
Inconsistent	78	4.9
Never used	1453	90.7
Total	1601	100.0

Confidence Interval]: 1.35 [1.06, 1.73]). The prevalence of HIV infection in the study group is high, and the use of condoms is low compared to the results of previous studies conducted in the country. Based on the major findings of the study, appropriate and systematic recommendations are forwarded.

Key words

Addis Ababa, urban slums, HIV, sexually transmitted diseases, condom.

Zusammenfassung

HIV Infektion unter den Einwohnern städtischer Slums von Addis Ababa.

Der Gegenstand dieser Studie war, die Verbreitung der HIV-Infektion zu bestimmen und das Ergebnis für die Prävention von HIV/AIDS in der Gesellschaft zu verwenden. Eine Gesamtanzahl von 1601 Personen wurde in der Studie aufgenommen, von denen 71,8% weiblich waren. Aus der Studie geht hervor, daß nur 70 (4,4%) Kondome benutzten und es stellte sich heraus, daß 363 (22,7%) HIV infiziert waren. HIV-Infektionen waren unter Personen mit anderen sexuell übertragbaren Krankheiten (STD) höher (24,9%) als ohne STD (OR [95% KI] : 1,35 [1,06, 1,73]). Die Verbreitung der HIV-Infektionen in der Gruppe war höher und die Benützung von Kondomen niedriger als in vorhergehenden Studien im Land. Auf der Basis dieser Ergebnisse wurden geeignete präventive Maßnahmen ausgearbeitet.

Schlüsselwörter Addis Ababa, städtische Slums, HIV, sexuell übertragene Krankheiten, Kondome.

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