Original article

The state of HIV awareness after three decades of intervention in Ethiopia: The case of the Borana pastoral community in Southern Ethiopia

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Abstract

Background: HIV continues to be the major public health challenge in Ethiopia. Despite positive developments in prevention efforts during the last three decades, the pandemic has continued to spread further expanding to remote pastoral communities.

Objective: The objective of this study is to determine the current state of awareness on modes of prevention, transmission and 'misconceptions' about HIV among the Borana pastoralist community in Ethiopia.

Methods: A cross-sectional survey of 502 households, 69 in-depth interviews and nine Focus Group Discussion sessions with 68 participants were carried out to generate data. STATA Version 10 was applied to analyze the survey data while MAXQDA 10 qualitative data analysis software was used to summarize and code qualitative data for further analysis and interpretation.

Results: The survey data revealed that only 10% of the respondents identified all modes of HIV prevention. Logistic regression analysis showed that those over 41 years of age (AOR=O.4; 95% CI=0.2-0.9) and those who do not discuss about sex with their partners (AOR=0.6; 95% CI=0.4-0.9) had significantly low knowledge about the modes of HIV prevention. Eighty nine percent of the respondents mentioned at most two modes without significant variation by sex, place of residence and discussion about sex with partners. Eighty two percent of the respondents were found to consider shaking hands, living and eating with someone living with HIV, and buying food stuff from an HIV positive shop keeper as a way for HIV transmission. Logistic regression analysis showed that those who are living in Arero and Teltele Districts (AOR=0.4; 95% CI = 0.2-0.6) were found to have more 'misconceptions' about the modes of HIV transmission.

Qualitative data underscored that knowledge about modes of HIV prevention, transmission and 'misconceptions' were widespread. Health extension workers, school teachers, youth AIDS club members and the radio were found to be key sources of HIV information. Yet, these sources other than radio are not trusted at community level since they are considered young learners themselves.

Conclusion and recommendations: After three decades of HIV prevention intervention, the majority of people in Banora still manifest limited awareness on the modes of HIV transmission and prevention. This implies the threat under which the community live and the need for quick intervention. Results of this study will assist HIV/AIDS prevention and control programs to tailor their interventions according to local contexts. [*Ethiop. J. Health Dev.* 2012;26(1):9-15]

Introduction

The recent Ethiopian ANC sentinel HIV surveillance report and previous documents consistently show that HIV prevalence has declined but has become more heterogeneous than previously thought (1, 2). The national adult HIV prevalence was estimated at 2.3% in 2011 with an estimated 1.1 million people living with HIV.

Although the declining trend of prevalence in Ethiopia is documented, it is also evident that the epidemic is slowly spreading to rural settings and market centers that are becoming emerging hotspots for HIV in Ethiopia (2, 4, 5). While rural towns and market centers are becoming hubs for HIV infection, there are evidences of regional variations. The recent Sentinel report documented regional rural variations of HIV infection rates ranging from 12.2% in Gambella (Pygnudo Health Center) to 0.0% in Afar (Semema Health Center) and Harer (Hasenge Health Center) (1) justifying variation of infections across regions.

The state of HIV and AIDS awareness is least studied among pastoral communities in Ethiopia. A study conducted in the Hamar community of southwest Ethiopia flagged major concerns over spreading HIV infections in the community due to the prevailing promiscuous sexual practices among the community members (7). Furthermore, a study on 'harmful practices' in Borana has revealed that prevailing practices of extramarital sex, polygamy, marrying the sister of a deceased wife, and widow are inheritance are documented to be associated with the spread of HIV infections (8-10).

Although recent evidence is lacking regarding the prevalence of HIV infections in Borana, report from Moyale Health Center [found in Moyale District of

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Borana Zone] in 2005 documented that 5.1% of ANC attendees were tested HIV positive (11). This figure exceeds the national estimate of 3.1% of the adult population. The recent sentinel report (1) also revealed that HIV prevalence at Moyale Health Center is documented to be 2.1%, which is not far from the national prevalence of 2.3%. With the objective of scaling up Anti Retroviral Therapy (ART) in Ethiopia, a series of HIV counseling and testing campaigns were organized and implemented during 2006-2008. Data from the campaign revealed that in the Oromia Region (of which Borana Zone is a part), about five million individuals were tested and 2.2% were found to be positive while from about 100 thousand individuals counseled and tested in Borana, 3% were found HIV positive (12). This shows that HIV is a serious threat to the Borana pastoral community.

Behavioral data also made clear that comprehensive HIV knowledge is much lower among pastoral communities 'misconceptions'[1] estimated at 4.4% with mounting to 95% (5, 8). A study sponsored by UNDP has shown that knowledge about modes of HIV infection was the lowest in the Yabello District of Borana Zone (8).

This study was intended to generate evidences on the current state of HIV especially with regard to the community's awareness on modes of HIV prevention and transmission and associated perceived vulnerability to HIV infection. The outcome is believed to provide evidence that national and local HIV intervention programs could be tailored to the local contexts to improve the status of awareness and containing the spread of HIV infection in the community.

Methods

Study materials

The Borana community is recognized as the senior Oromo clan and is best known for maintaining the Gada system, an important system of governance since the early 13th century (13). While a considerable proportion of the Borana community is believed to live in Northern Kenya, those living in the Borana Zone of the Oromia Region in Ethiopia account for an estimated total of one million people (14). The Borana occupy a relatively arid area bordered by the Gujii and Bale Zones of Oromia to the north and northeast, by the Somali zone to the east, Kenya to the south, and the Konso District of the Southern Region (SNNP) to the West. Borana are a pastoral community with an economy based on livestock rearing.

Methods of data collection and analysis

A cross-sectional explorative study design was followed where a survey was employed to collect data on the level of awareness, modes of HIV transmission and prevention from selected community members during April 2009. Qualitative information on perceived vulnerability and local understanding of HIV and AIDS was collected over an extended time from October 2008-April 2009.

Three districts were purposely selected for the survey, based on the resident pattern: predominantly Borana or a mix of Borana, Gujii and/or Garri. Accordingly, Teltele and Arero were identified as predominantly Borana districts, while Liben was considered for it hosts Borana, Gujii and Garri ethnic groups that are living together. The rural settings of these districts were targeted to avoid an urban bias in the state of awareness and level of 'misconception' about HIV and AIDS. Eighteen *kebele*s (peasant associations) were randomly selected and from each *kebele*, one Olla (a cluster of 50 households) was chosen using a lottery method. With an application of population proportion to size, 415 households (HHs) were identified for an interview. Trained enumerators interviewed spouses in the same household separately, using a pre-tested questionnaire. Responses were completed for 403 (97%) households. In-depth interviews and FGDs were held with an objective to determine local understanding of HIV and AIDS and perceived vulnerability to HIV infection. Nine sessions of separate men and women FGDs and sixty nine in-depth interviews were carried out to generate required information.

Survey data was double entered and compared for consistency using epi-info and analyzed using STATA 10. Data was summarized using frequencies where Odds Ratio was used to measure significance of associations between outcome variables (knowledge on modes of HIV transmission, prevention, and 'misconceptions') and selected explanatory variables.

Qualitative data was analyzed following an inductive analysis approach. Field notes were translated from *Afaan* Oromo to English and samples were back retranslated in to *Oromiffa* to ensure consistency before applying MAXQDA 10 qualitative data analysis software for analysis. Codes were developed to categorize information according to themes, in view of the study objectives. Pseudonyms were used to maintain the anonymity of the participants. However, sex, age, source of information (in-depth interviews or focus group discussions) and residence of the participant were shown in parenthesis for easy reference whenever quotes are made.

[1]In the literature misconceptions related to HIV and AIDS consist of wrong beliefs. However, at the community level such beliefs are considered normal understanding. While educating the community may help equipping them with what is right and wrong, as it stands now what is considered is the perspective of the researcher as for the community it is their normal understanding.

Ethical considerations

The study proposal was approved by the Institutional Review Board of the School of Medicine, Addis Ababa University. Borana Zone administration allowed data collection at the district level after being briefed on the purpose of the study. At individual level, informed consent was secured before engaging subjects in the study. Making the data anonymous and avoiding personal identifications ensured confidentiality of the study.

Results

Socio-demographic characteristics

The majority of survey respondents are Oromo (97%), married (96%), cannot read and write (78%) and followers of indigenous religion (*Waaqeffataa*) (43%) as shown in Table 1.

Table 1: **Socio-demographic characteristics of study participants in Borana, April 2010**

Key variables	Male (n=416)	Female (n=390)	Total
Sex	53%	47%	
Age			
<=18 years	2%	6%	
19-24 years	8%	15%	
25-29 years	15%	21%	
30-34 years	15%	12%	
>= 35 years	60%	45%	
Ethnicity			
Oromo	97%	96%	96.5%
Non Oromo	3%	4%	3.5%
Religion			
Waaqeffataa	43%	43%	43%
Muslim	37%	38%	38%
Protestant	9%	7%	8%
Others	11%	12%	12%
Educational status			
Cannot read and write	68%	87%	78%
Completed elementary	23%	11%	17%
Completed secondary	9%	2%	6%
Marital status			
Married	95%	96%	96%
Divorced	3%	3%	3%
Widowed	2%	1%	2%
Current practice of extramarital sex			
Yes	17%	15%	16%
No	83%	85%	84%
Knowledge on modes HIV of prevention			
Know all modes of prevention	12%	8%	10%
Know one to two modes of prevention	88%	92%	90%
Know modes of HV transmission			
Know three or more modes of transmission	87%	91%	11%
Know one to two modes of transmission	13%	9%	89%
Level of 'misconception'			
No 'misconception'	21%	15%	18%
Three or more 'misconceptions'	79%	85%	82%

Awareness on modes of transmission and prevention

Findings show that 382 (98%) females and 399 (96%) males claimed to have heard about HIV, with no significant variation between male and female. Further questioning of what was heard revealed that study participants do not even know if there is any difference between HIV and AIDS where they were questioning back on if HIV and AIDS mean different (*adda addaa*?) while all respondents consider HIV to be a *'killer disease'*.

Eleven percent of respondents know all the three modes of HIV transmission (sexual intercourse, sharing skin piercing materials, and from a pregnant mother to the fetus) (Table 1). Most of the respondents, 89% could mention at most two modes of HIV transmission where over 90% of those cite sexual activities and sharing of sharp and skin piercing objects as modes of transmission. Adjusted logistic regression of association revealed that knowledge on modes of HIV transmission is significantly limited among women (AOR=2.0; 95% CI=1.1-3.3) those who reside in Arero and Teltele Districts (AOR=5.3; 95% CI=2.8-10.0) and those who do not discuss about sex with their partners (AOR=1.6; 95% CI=1.2-2.1) (Table 2).

Of the respondents, 10% mentioned all modes of HIV prevention (abstinence, faithfulness, condom use and avoidance of sharing skin piercing materials. The majority of respondents, 90% mentioned at best two modes of HIV prevention Adjusted logistic regression analysis provides evidence where those over 41 years of age (AOR=0.4; 95% CI=0.2-0.9) and those who do not discuss about sex with their partners (AOR=0.6; 95% CI=0.4-0.9) were found to have limited knowledge about modes of HIV prevention (Table 2).

Table 2: **Logistic regression analysis to identify explanatory factors for limited knowledge on modes of prevention, transmission and more 'misconceptions' in Borana, April 2010 (n=806)**

Independent Variables	Outcome variables: Knowledge on modes of HIV Prevention			Knowledge on modes of HIV transmission			'Misconceptions'		
	%	COR (95%CI)	AOR (95%CI)	%	COR (95%CI)	AOR (95%CI)	%	OR (95%CI)	AOR (95%CI)
Sex									
Male	54.0	Reference	Reference	38.9	Reference	Reference	51.3	Reference	Reference
Female	46.0	0.9 (0.4-1.3)	0.8(0.4-1.3)	61.1	1.8 (1.1-2.9)	2.0 (1.1-3.3)*	48.7	0.9 (0.6-1.3)	0.8 (0.5-1.3)
Age									
<30 years	33.3			34.0			31.5		
30-40 years	42.7	1.1 (0.5-3.5)	1.3 (0.5-3.4)	40.6	0.8 (0.3-1.8)	1.3 (0.7-2.4)	42.5	0.9 (0.5-1.9)	0.9 (0.5-1.4)
>=41 years	23.9	0.7 (0.2-0.9)	0.4 (0.2-0.9)*	25.4	0.7 (0.3-1.7)	1.3 (0.6-2.5)	26.0	0.9 (0.4-1.9)	0.5 (0.3-0.9)*
Woreda									
Liben	57.5	Reference		18.1	Reference		69.2	Reference	
Arero-Teltele	42.5	0.9 (0.5-1.9)	A	81.9	5.7 (1.0-10.7)	5.3 (2.8-10.0)*	30.8	0.5 (0.3-0.6)	0.4 (0.2-0.6)*
Religion									
Waaqefeta	79.0	Reference		77.8	Reference		78.4	Reference	
Muslim	17.5	0.8 (0.4-1.6)	A	19.4	0.4 (0.2-0.7)	a	18.8	0.4 (0.2-0.6)	A
Others	3.5	3.6 (0.8-16.0)		2.8	0.1 (0.02-.0.3)		2.8	0.5 (0.3-0.9)	
Discuss sex									
Yes	66.9	Reference		67.6	Reference		64.4	Reference	
No	33.1	0.6 (0.4-0.9)	0.6 (0.4-0.9)*	32.4	1.8 (1.4-2.3)	1.6 (1.2-2.1)*	35.6	0.5(0.3-1.02)	A
Currently have extramarital partner									
Yes	84.7	Reference		83.7	Reference		85.8	Reference	Reference
No	15.3	3.4 (0.8-14.6)	A	16.3	1.1 (0.6-2.1)	a	14.2	2.2 (1.3-3.5)*	2.5 (1.5-4.1)*

a) Variables omitted due to co linearity; b) * Strong explanatory factors

Qualitative findings reveal that avoiding skin-piercing materials, limiting oneself to one partner other than one's spouse, and use of condoms are common HIV prevention strategies.

"We heard that abstinence, faithfulness with the spouse and use of condom are important modes of HIV prevention. However, for us in Borana abstinence is expected and this can be ensured while faithfulness to one partner is difficult to ensure since extramarital sexual relations (jaala-jaalto) has been part of our life for years and difficult to abandon right away" (W56, II Arero). Condom as a means for HIV prevention was argued, "*Condom is not known in this community but now a days we are hearing about it as the only solution to prevent HIV infection 'fala birraa malqabna' …what other option do we have…"(M42, FGD Teltele).*

Seven common 'misconceptions' on HIV transmission were identified: hand shaking, eating, sharing clothes and living with an HIV positive person, mosquito bites, eating raw meat and buying food stuff from an HIV positive shopkeeper were believed to facilitate HIV transmission. As shown in Table 1, 18% of survey respondents were found to have no 'misconceptions' while the wider majority (82%) had lived with at least three 'misconceptions'. Further logistic regression analysis shows that those over 40 years of age (AOR=0.5; 95% CI=0.3-0.9), those who live in Arero and Teltele Districts (AOR=0.4; 95% CI=0.2-0.6), and those who currently have extramarital sexual partner were found to sustain more 'misconceptions (Table 2).

Qualitative data shows that more than three in four participants (male and female) have 'misconceptions' about HIV. One of the FGD participants summarized that:

"…yes it is not safe to eat and live with someone who has HIV". It was emphasized that *"… it is always good to keep oneself away from someone who has the virus" (W39, FGD Liben)*. In addition, an in-depth interviewee contends that *"While others felt that living, sharing clothes and eating with an HIV sick person may not have any problem, I think living together with such a person would put you at risk since living together would any way lead to sharing materials" (W56, II Arero).*

Some research participants are even scared to speak of the person with HIV:

"I get scared to call the name of an infected person. I feel the disease may jump to me" (M69, II Yabello).

Source of information

Qualitative data on sources of information show that source of information on HIV and AIDS were found to come from radio, public gatherings organized by community health workers, school teachers and students, and relatives or government officials who come from urban settings to visit rural community. Research participants consistently shared their mistrust to information that comes from health extension workers, school teachers and students who are considered as yet children in the community. Shared arguments on source of information show that:

"I think we [community members] are not getting reliable information about the disease. I do not trust health extension workers, school children and school teachers, who are too young themselves to provide reliable information to the community about the disease" (W52, II Liben)

Often reliable information is expected from Gada leaders.

Perceived vulnerability to HIV

Survey as well as in-depth interview and FGD participants was asked to assess their own risk of getting HIV and whether they are more or less at risk in comparison to their spouses. Responses indicate that the study group tends to externalize HIV as a problem of those who reside in urban settings, specifically sex workers. The survey data shows that the majority of respondents (68%) do not feel at risk of getting HIV. In depth interviews and FGDs show that women claim to be less at risk of infection compared to men. Women argue that they are not as mobile as men who migrate with livestock in search of water and pasture and visit cities to sell livestock where they meet 'other' women. Women research participants also argued that those women who compete to have several extramarital sexual partners were at a higher risk of encountering HIV like men do.

Men, on the other hand, believe that both men and women encounter HIV, particularly if they have many extramarital sexual partners. Although survey data found that 84% of the respondents reported having no extramarital concurrent sexual partners, with no variation between male and female respondents, qualitative data shows that extramarital sex is a common practice in the community. Focus group discussion participant stressed that:

"Both men and women are at risk of getting HIV since both maintain jaala (boy friend) and jaaltoo (girl friend) in addition to their spouse (W25, FGD Liben)".

Extramarital sexual practice has been practiced for generations. The desirability of extramarital sexual life was further explained that:

"…jaala-jaalto remains an important mechanism to prove oneself wanted by the opposite sex. One who is not wanted is undermined not only by the community but also by the spouse and this is what maintains the continuous search for an extramarital sexual partnership" (M35, FGD Arero).

Such sexual practice is believed by both men and women research participants to expose men and women to HIV infection.

Discussion

As any other country with multicultural characteristics, Ethiopia entertains variations in the level of infections and awareness about HIV and AIDS. In Borana, this study found limited level of awareness about modes of HIV transmission and prevention and identified prevailing local conception on modes of transmission. The finding reveals that only 10% of all respondents could list the four modes of HIV prevention. The remaining majority (90%) were found to be inconsistent in what they know about modes of HIV prevention. It was found that 11% of the respondents cited all modes of HIV transmission, while 89% were found to have incomplete information on how HIV is transmitted. Despite claims of having heard about HIV, what is actually known about the modes of HIV transmission and prevention was found to be incomplete. This is consistent with the findings of studies that documented incomplete level of awareness of HIV and AIDS in the country which is more pronounced among the pastoral communities (5, 8). The limited awareness about HIV among the Borana is evident from the 'misconceptions' that were recorded in this study. Eighty two percent of the study participants, believe HIV could be transmitted

through one or more of the following: hand shaking, eating with, sharing clothes and living with a HIV positive person, a mosquito bite, eating raw meat and buying food stuff from a HIV positive shop keeper. In view of the fact that information is not coming from trusted sources and often available information target urban settings, it is not surprising to find a lot of 'misconceptions' among the Borana pastoral community. The limited awareness about HIV and associated 'misconceptions' in Borana are supported by available biological data that consistently shows relatively high prevalence of HIV in Borana. HIV prevalence at Moyale health center was found to be higher or equal to the national HIV prevalence (1, 11). Unpublished report on the Millennium HIV Counseling and Testing Campaign of 2006-2008 shows that HIV prevalence for Borana is relatively high (3%) compared with the regional rate of 2.2% (12). This clearly shows Borana pastoral community is in a state of looming HIV 'disaster'.

Adjusted logistic regression shows that being over the age of 40 years, not discussing about sex with partner, being women, current practice of extramarital sex and residents of Arero and Teltele Districts were associated with relatively limited knowledge on modes of HIV prevention and more 'misconceptions'. This can be explained by the fact that those who are relatively at older age tend to stick to available information and may not actively seek new information. It is also possible that these groups may not be as actively mixing with others which denies them the opportunity for new information. Similarly, not discussing about sex with partner evidently denies one the opportunity to be informed about HIV and AIDS. Arero and Teltele Districts are off the main road that makes it difficult to access information on HIV and AIDS. This is in line with the fact that HIV interventions are often focusing on urban settings and fail to pay attention to local contexts (16). Women in Borana are not expected to and encouraged by the local culture to participate in public forums could explain their limited knowledge on modes of transmission.

Source of information on HIV and AIDS was found to be community discussions facilitated by health extension workers, school teachers and students, radio and relatives who visit from urban settings. Yet, information provided by young people in the community was not trusted. Evidence shows that these young people are considered yet as learners in Borana than sources of information that the community continues to doubt the information that comes from them. As regards contents of the information shared, it was evident that generic information of abstinence, faithfulness and condom use may not work for the Borana. Among the Borana, abstinence and faithfulness do not apply as women remain chaste before marriage, and after marriage extramarital sex is tolerated. Thus, the messages itself lacked context at the community level and this documented to affect the success of prevention interventions (16, 17).

This study underscores the fact that despite UNAIDS' vision of zero discrimination, zero new HIV infections, and zero AIDS-related deaths through universal access to effective HIV prevention, treatment, care and support (15), awareness about HIV and 'misconception' about HIV remains to challenge the progress in HIV interventions in Borana pastoral community and infection will continue to threaten the public.

Conclusion and Recommendations

The present study gives evidence that awareness of HIV transmission and prevention is poor among the Borana people and is associated with a wide range of 'misconceptions' held by the community. The study findings are further supported by available biological data, revealing high HIV prevalence in Borana. Prevention interventions at the community level did not increase level of awareness about HIV and AIDS nor did it reduced the 'misconceptions' held about HIV transmission.

In addition, to generating evidence on the state of HIV transmission and prevention knowledge in Borana, the present study drew attention to the government's prevention strategy, which remains to be generic without attention to the local contexts which resulted in continued low level of awareness on HIV and AIDS at the community level.

The results of this study call for stakeholders operating in Borana to consider local contexts in the design of prevention interventions and channel of imparting the messages. Furthermore, biological study would help in determining the level of HIV prevalence in Borana.

Limitations of the study

Study districts were chosen purposively without following proper sampling procedure since the intention was to find out if being Borana or otherwise could make difference in the level of awareness. Thus readers should take this into consideration in interpreting confidence intervals. Secondly, prevalence data from the campaign was unofficial report of raw data from the Regional Health Bureau. A parallel biological study to determine the current incidence and prevalence of HIV in Borana would have enriched the behavioral findings and make for a stronger case. Finally, caution should be taken in the application of the findings from this study to other pastoral communities in view of contextual variations.

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