

Which factors influence North Ethiopian adults' use of dual protection from unintended pregnancy and HIV/AIDS?

Tsigemariam Teklu¹, Gail Davey²

Abstract

Background: In Ethiopia 16.2% of births are not wanted, 18.7% of births are mistimed, and >90% of adult cases of HIV are attributable to heterosexual activity. Dual protection is an important public health intervention in this context.

Objective: To assess the extent and predictors of dual protection among married or cohabiting people in Northern Ethiopia.

Methodology: A community-based stratified cross-sectional survey of 868 married or cohabiting women and men, and four focus group discussions, were conducted in Adwa town, northern Ethiopia, in 2006.

Results: 13.8% of respondents practiced effective dual protection. Predictors included male sex, being literate, being employed, approval of condom use within marriage, and discussion of dual protection. Focus group participants emphasized the negative community perceptions associated with condom use within marriage.

Conclusion: Use of dual protection was unusual in this North Ethiopian town. Condom use was uncommon among current hormonal contraceptive users, and condom use within marriage was highly stigmatized. [*Ethiop.J.Health Dev.* 2008;22(3):226-231]

Introduction

Ethiopia is the third most populated country in Africa, with a projected population of 77.1 million people for July 2007, a number that increases by almost 2 million people a year (1). Even if measures slow the rate of growth, the prospect is that Ethiopia's population will reach 100 million over the next 15 years (2). According to the Ethiopian Demographic and Health Survey 2005, 16.2% of births in Ethiopia are not wanted, while 18.7% of births are mistimed (3). Ethiopia is also seriously affected by HIV/AIDS, and is estimated to have the sixth highest number of infections in the world (5). In Ethiopia, over 90% of adult cases of HIV are attributable to heterosexual activity (5).

Dual protection is the prevention of two unplanned and undesirable outcomes – unintended pregnancy and HIV infection, and may be achieved through-

1. Use of contraception in a long term mutual monogamous relationship or
2. The use of a condom plus another non-barrier contraceptive method or
3. The use of a condom alone (including during pregnancy) or
4. Abstinence or
5. Avoidance of all types of penetrative sex (4).

This study was designed to measure the prevalence of, predictors of, and barriers to dual protection in a population with low contraceptive prevalence and moderately high HIV prevalence.

Subjects and Methods

Study design:- This study was a community based cross-sectional survey complemented by focus group discussions.

Study area:- The study was conducted in Adwa town, about 1000 kilometers north of Addis Ababa, the capital of Ethiopia. Adwa is typical of the small towns in which approximately 12% of the population of Ethiopia resides. According to the town administration, the population of the town at the time of the survey was 54,700 (49% males). HIV prevalence at antenatal clinic sites in Tigray, northern Ethiopia, ranges from 2-6% in rural areas to 7.4-11.3% in urban areas (5).

Source population:- All men and women living in Adwa town who were married or cohabiting and were within the reproductive age groups 15-49 years for women and 15-59 years for men.

Sample size determination:- A sample size of 442 women and 442 men was calculated to determine prevalence of dual protection with a 5% margin of error, given a non-response rate of 15%. The primary study unit was the *ketena* (sub-administrative district), and secondary study units were households. Focus group discussions were held until sufficient information was gathered.

Sampling Technique:- Seven of 15 *ketenas* were randomly selected using a lottery method. A census was conducted in the selected *ketenas*, eligible respondents were registered and a code number was given to eligible households (n=998). The required sample was allocated between selected *ketenas* proportional to the size of the *ketena* population, households were selected by computer generated random number, and one individual from each household was interviewed.

Purposive sampling was used for the focus group discussions, to recruit men and women to four separate

¹Tsigemariam tsigsha@yahoo.com; ²School of Public Health, Addis Ababa, University, Tel. 011-553-1567, P.O. Box 26905/1000, Addis Ababa, Ethiopia E-mail: nerurkar@ethionet.et or gailinaddis@hotmail.com

groups of between 6 and 10 members. Focus group discussion participants were selected randomly by lottery method from those households which were not selected for the quantitative study until the required information was collected.

Data collection: A structured questionnaire was developed and included questions on basic socio-demographic characteristics, reproductive history, contraceptive use, sexual history, KAP on dual protection and barriers to dual protection. The questions on dual protection were asked as follows:-

“Have you and/or your partner ever used a dual protection method from unwanted pregnancy & HIV/AIDS within the last 12 months?”

If yes, which methods do you and/or your partner use?

- Non barrier contraceptive in mutual monogamous relationship
- Non barrier contraceptive and condom
- Condom alone
- Others specify

If condom alone or along with other contraceptives, how often did you and/or your partner use in the last 12 months?”

For the focus group discussions a semi-structured guideline was used, and the discussion was recorded on a tape recorder.

Data processing and analysis:- Data were entered cleaned and analyzed using EPI Info version 6 and SPSS 11 software statistical packages. Qualitative data were transcribed, analyzed manually and summarized by theme.

Results

Socio-demographic characteristics:- The response rate was 98.2%. The mean (SD) age of male and female respondents was 39 (8.9) years and 28.2 (6.8) years, respectively. About 15% of respondents had no formal education, more women than men were illiterate, and fewer women than men had been educated beyond secondary school level ($p < 0.01$, each comparison). Close to 41% (14.7% men and 66.4% women, $p < 0.001$) of the respondents were not in formal employment.

Modern contraceptive use:- Almost half (49%) were current users of modern contraceptive, but less than 1% of these used barrier contraceptives. The overwhelming majority (92.8%) of current modern contraceptive users had never discussed risk factors for HIV/AIDS with their contraceptive provider, and only 8.6% of the respondents knew that modern contraceptives could be used for the purpose of HIV prevention.

Risk perception of HIV infection:- Seventy-two percent of respondents, (61.2% of men and 82.6% of women, $p < 0.01$) reported one lifetime sexual partner. About 2.3%

of men and 6.6% of women reported that their spouse or partner had another sexual partner. The majority (88.4%) of respondents considered themselves to be at low risk of HIV.

Partner communication:- About 69.2% of respondents (75.1% of men and 63.5% of women) had discussed the dual risk of HIV infection and unintended pregnancy with their spouse or partner. When those who had not discussed these issues were asked why not, 36.7% claimed they did not know about the issues, 29.6% said they trusted their partner, 4.9% said for religious reasons and 2.2% were fearful that they would be suspected of infidelity.

Knowledge, Attitude and Practice (KAP) towards dual protection:- About 41.7% (61.2% of men and 22.6% of women, $p < 0.001$) had heard of dual protection. Of these, 43.3% knew that dual protection could be achieved by using a non-barrier contraceptive plus a condom and 41.4% that it could be achieved by using non-barrier contraceptives in a long-term mutual monogamous relationship. Only 8.3% (3% of men and 22.2% of women) knew that condoms on their own could be used for dual protection. Nearly 10% of the respondents had negative or equivocal attitudes towards dual protection methods.

Overall, 19.7% of respondents (29.8% of men and 9.8% of women) said they used some form of dual protection. However, three of those stating they achieved dual protection by using non-barrier contraceptives in a long-term monogamous relationship, had earlier reported two or more lifetime sexual partners. Of the 56 people using condoms for dual protection, only five used them every time. When individuals who reported use of non-barrier methods and multiple sexual partners or inconsistent condom use were excluded, the prevalence of effective dual protection was only 13.8% (Table 1).

Attitudes towards dual protection:- Most respondents stated that they approved the use of condoms within marriage, but nearly 30% disapproved of their use in such relationships reasoning that spouses should trust each other and be faithful. Ambivalence was apparent, since later 54.3% said that condom use was a sign of mistrust and 46% believed that someone who used condoms was promiscuous.

Barriers to dual protection:- About 70% of respondents did not know of methods of dual protection; 34.9% said they wanted to have more children and 23.3% considered themselves at no risk of HIV infection or unintended pregnancy. One hundred fourteen (13.1%) respondents (109 women) feared social stigma if they used dual prevention methods, and 10% of respondents, (3% of men and 16.9% of women) said their spouse or partner would not allow them to use dual protection.

Predictors of dual protection:- After adjustment using binary logistic regression, employment, educational status and sex were the socio-demographic variables significantly associated with dual protection (AORs 1.94, [95% CI 1.33 to 2.78]; 2.44, [95% CI 1.08 to 4.96]; and 2.91, [95% CI 1.78 to 4.73], respectively, Table 2).

Table 1: **KAP towards dual protection of married or cohabiting respondents in Adwa town, February 2006**

Variables		Men (n=430)		Women (n=438)		Total	
		No	(%)	No	(%)	No	(%)
Heard of dual protection (n=868)	Yes	263	61.2	99	22.6	362	41.7
	No	167	38.8	339	77.4	506	58.3
OF THOSE WHO HAD HEARD OF DUAL PROTECTION:							
Knows non-barrier contraceptive in LTMM (n=362)	Yes	83	31.6	67	67.7	150	41.4
	No	180	68.4	32	32.3	212	58.6
Knows non-barrier contraceptive + condom (n=362)	Yes	113	43	44	44.4	157	43.3
	No	15	57	55	55.6	205	56.6
Knows condom alone (n=362)	Yes	8	3	22	22.2	30	8.3
	No	255	97	77	77.8	332	91.7
Knows abstinence (n=362)	Yes	107	40.7	21	21.2	128	35.4
	No	156	59.3	78	78.8	234	64.6
Knows avoiding all penetrative sex (n=362)	Yes	60	22.8	4	4	65	17.7
	No	203	77.2	95	96	298	82.3
OF ALL RESPONDENTS:							
Attitude towards dual protection (n=868)	Positive	416	96.7	415	94.7	831	95.7
	Neutral/negative	14	3.3	23	5.3	37	4.3
Partner attitude to dual protection (n=868)	Positive	403	93.7	378	86.3	781	90
	Neutral/negative	27	6.3	60	13.7	87	10
Use of dual protection method by type (n=868)	Non-barrier contraceptive in LTMM*	73	17.0	42	9.6	115	13.2
	Non-barrier contraceptive plus condom	51	11.9	0	0	51	5.9
	Condom alone	4	0.93	1	0.2	5	0.6
Effective dual protection**	Yes					120	13.8
	No					748	86.2

LTMM=long-term mutual monogamy

* 3 men who reported non-barrier contraceptive in mutual monogamy excluded because of multiple sexual partners.

** Also excluding non-consistent condom users.

Of the reproductive health variables, approval of condom use within marriage and discussion about dual protection with family planning provider or partner remained significantly associated with dual protection after adjustment for other factors (AORs 3.92, [95% CI 1.14 to 14.89]; 4.94, [95% CI 1.08 to 16.67]; and 6.43, [95% CI 1.15 to 24.62], respectively, Table 2).

Findings of Focus Group Discussions (FGDs)

Protection from the risk of HIV:- Most FGD participants said that people were trying to protect themselves from the risk of HIV/AIDS by choosing a faithful partner, having a blood test before legal marriage and by using condoms. The majority agreed that young and educated people were protecting themselves from HIV by using condoms. However, several pointed out the gap between the ideal and reality: a man from the second

FGD said "we see people talking about the prevention of HIV/AIDS during the day, but changing into another person in the evening, drinking a lot and losing control". However, a man from the first FGD said "educated people are not protecting themselves; we are observing them at bad places in the evening, drinking, dancing, and dating many young girls."

Knowledge of dual protection methods:- Participants in three of the four FGDs said they knew how to prevent the dual risk of unintended pregnancy and HIV/AIDS. In these groups, participants mentioned that condoms could be used for dual risk prevention.

Partner communication:- Most participants said that educated people talked about the number of children they wanted to have and discussed the number of births but

that this was not true for less educated people who had children till they stopped naturally. They said that there was no discussion about HIV/AIDS among married or cohabiting partners, and that no one dared mention HIV within such relationships. Most said that the reasons for not talking directly included mistrust, shyness, fear of being thought unfaithful and actually being unfaithful.

Condom use for dual prevention:- FGD participants mentioned that condoms were associated with prostitution and commercial sex workers rather than with prevention of unintended pregnancy. The suggestion of using condoms at the same time as other methods of modern contraceptive in response to the twin risks of unintended pregnancy and HIV infection was rejected by FGD participants because they believed that the use of condoms within marriage was a sign of mistrust.

Table 2: Predictors of dual protection method use

Variables		Reported dual protection use		COR	95% CI	AOR	95% CI
		Yes	No				
Sex	Male	128	302	3.89	(2.74-5.68)	2.91*	(1.78-4.73)
	Female	43	395	1.00		1.00	
Age group	<25	30	141	1.00		1.00	
	≥ 25	141	556	1.19	(1.08-2.56)	1.20	(0.67-2.04)
Educational status	Illiterate	8	122	1.00		1.00	
	Literate	163	575	4.32	(2.16-9.03)	2.44*	(1.08-4.96)
Employment status	Employed	107	243	3.12	(2.17-4.41)	1.94*	(1.33-2.78)
	Unemployed	64	454	1.00		1.00	
Marital status	Married	153	579	1.73	(1.02-3.27)	1.70	(0.94-2.51)
	Cohabiting	18	118	1.00		1.0	
Age at first intercourse	≤ 18	42	311	1.00		1.00	
	>18	128	382	2.48	(1.72-3.64)	2.31	(0.78-6.82)
Partner attitude towards dual protection	Positive	166	615	4.42	(1.79-11.13)	7.84	(0.92-58.4)
	Neutral and negative	5	82	1.00		1.00	
Approval of condom use within marriage	Approve	143	467	2.51	(1.62-3.89)	3.92*	(1.14-14.89)
	Disapprove & mixed	28	230	1.00		1.00	
Discussion with contraceptive provider	Yes	6	8	4.47	(1.43-14.28)	4.94*	(1.08-16.67)
	No	26	155	1.00		1.00	
Discussion about dual risk with spouse	Yes	158	443	6.97	(3.31-12.47)	6.43*	(1.15-24.62)
	No	13	254	1.00		1.00	

NB: * significantly associated variables

COR: Crude Odds Ratio

AOR: Adjusted Odds Ratio

Discussion

This study showed that only 13.8% (95% CI 11.5% to 16.8%) of the study population had used effective dual protection in the past 12 months. This percentage may appear high compared with other dual protection studies in which people using non-barrier contraceptives in a mutual monogamous relationship are not included. If the definition is restricted to dual methods or to use condoms alone, the prevalence drops to 5.9% (95% CI 4.3% to 7.5%) and 0.6% (95% CI 0.1% to 1.1%), respectively. These prevalence figures are lower than populations studied in South Africa in which 7.5% used dual methods and 4.5% condoms alone (6). The very low prevalence of condom use within marriage or long-term relationships in this study population is an important contributor to the overall low dual protection rate.

Sex was a significant predictor for dual protection method use in marital or cohabiting relationships, with men more likely to use dual protection than women. This may be due to the fact that only male condoms are available in Ethiopia, or may reflect gender-related power differentials, in that men usually decide on matters of sexuality. Women are biologically, epidemiologically and socio-economically more vulnerable than their male partners to HIV and unintended pregnancy. Epidemiologically, in a single, random unprotected sex act, the probability of pregnancy is higher than the probability of HIV infection. The probability of pregnancy is 3.5% (7) while the probability of HIV infection is 0.2% for male-to-female transmission and 0.1% for female-to-male transmission (8).

There were also educational differentials in use of dual protection. Literate respondents were more likely to use dual protection than illiterate respondents. The South Africa study cited earlier also found education to be an important predictor of dual protection use (6). Raising educational levels is a key tool in avoiding the dual risk of HIV and unintended pregnancy.

This study also demonstrated knowledge differentials in dual protection method use. Those who had heard of dual protection were the only people to use dual protection methods. Only 41.7% of respondents had heard of dual prevention methods, which is much lower than in South Africa, where 70% of study participants knew of condoms for dual risk prevention (6).

The low level of knowledge of condoms for dual protection may be the result of powerful promotion of condoms for protection from HIV, and the relative lack of promotion of condoms for pregnancy prevention. Some condom promotion campaigns in Ethiopia now advertise condoms for "protection" without specifying whether protection is intended from STIs or pregnancy.

Communication about the dual risk of unintended pregnancy and HIV/AIDS with partners was an important predictor of dual method use. Those who had discussed dual risk were more likely to use dual protection than those not discussing. The majority of FGD participants agreed that educated people talked about planning pregnancies, but very few would discuss HIV directly for fear of suspicion or relationship conflict. This was consistent with focus group discussions held in five other countries (Kenya, South Africa, Tanzania, Zambia, & Uganda). Participants in these agreed that discussing sex, family planning and STDs especially AIDS was difficult within couples. Participants in Tanzania and Zambia suggested that while couples discuss AIDS in general terms or in terms of other people, they rarely discuss these issues with regard to themselves or in terms of their own protection (9).

Individuals who had discussed with their family planning provider were more likely to use dual protection than those who had not. Of those who had discussed, most said they talked about how to prevent HIV/AIDS transmission. Similarly, in South Africa, those who had prior instructions from health care providers were more likely to use dual protection (10). In Ibadan, Nigeria, awareness of dual protection increased from 8% to 50% after a dual protection intervention (11).

Respondents who approved of condom use within marriage were nearly four times more likely to use dual methods than those who disapproved of their use. Although 70.3% of the survey respondents stated they approved of condom use within marriage, (higher than in Kenya, where only 39% said they approved [12]) most

FGD participants disagreed that they should be used within marriage. There was clear ambivalence to the use of condoms and several prejudiced remarks about those using condoms emerged in the FGDs. In this setting, condom use within marriage is not just neglected (13), it is highly stigmatized.

For 10% of respondents, the main obstacle to not using dual protection was because their partner did not allow them. One FGD participant commented, "Women are using contraceptives without the knowledge of their husbands, and adding condoms for risk prevention would be almost impossible". Condoms are considered to be signs of mistrust, resulting in disagreement, suspicion and mistrust, just as in South Africa. These attitudes represent major obstacles to the use of condoms as a dual method of protection (14).

This study identifies important factors associated with use of dual protection. The socio-demographic factors identified (sex, literacy and employment) are not open to short-term change and will require prolonged, multi-sectoral interventions to achieve change. However, the other factors (discussion with partner or health care provider, and approval of condom use within marriage) appear more rapidly amenable to carefully designed interventions.

References

1. NOP, 2005: Population & Development Indicators 2005, National Population Office Addis Ababa, Ethiopia.
2. UNDP, 2003; Department of Economic & Social Affairs, World Population Prospect: The 2002 revision & world urbanization prospect.
3. Central Statistics Authority, ORC Macro, *Ethiopia DHS*, 2005, Addis Ababa Ethiopia, Calverton, Maryland, USA, September 2006.
4. USAID: Interagency gender working group, subcommittee on men and reproductive health; Theme Statement Dual protection (from a gender perspective), 2006.
5. Ethiopian Federal Ministry of Health, 2004: 5th report on AIDS in Ethiopia, Addis Ababa, Ethiopia.
6. Morroni C, Smit J, McFadyen L, Mqhayi M, Beksinska M. Dual protection against STI and pregnancy in South Africa. *African Journal of Reproductive Health*, 2003;7:13-19.
7. Bongaarts J, Potter R. 1983. *Fertility, Biology, & Behavior: An Analysis of the Proximate Determinants*. New York: Academic Press.
8. Futures Group International. 2003. *Goals Model: For Estimating the Effects of Resource Allocation Decisions on the Achievement of the Goals of HIV/AIDS Strategic Plan*. Version 3.0. Glastonbury, CT: Futures Group International.

9. WHO, 1998: Progress in human reproductive health research: Family planning in the era of HIV/AIDS; no.48, part (1).
10. Myer L, Morroni C, Mathews C et al: Dual method use in South Africa. *International Family Planning Perspectives*. 2002;28(2):119-121.
11. Adeokun L, Akinso S, Egun Delano G, Jagha T, Mantell JE, Olatoregun J, Udo D, Weiss E. Promoting dual protection in family planning clinics in Ibadan Nigeria. *International Family Planning Perspectives* 2002, 28(2); 87-95.
12. Bauni K, Jarabi BO. Family planning and sexual behaviour in the era of HIV/AIDS: the case of Nakuru District, Kenya. *Stud Fam Plan*. 2000;31(1):69-80.
13. Ali MM, Cleland J, Shah IH. Condom use within marriage: a neglected HIV intervention. *Bull World Health Organ* 2004;82:180-186.
14. Maharaja P. Obstacles to negotiating dual protection: perspectives of men and women. *African Journal of Reproductive Health*, 2001;5(3):150-61.