CONDOM USE

Fifty ways to leave your rubber: how men in Mombasa rationalise unsafe sex

S Thomsen, M Stalker, C Toroitich-Ruto

Sex Transm Infect 2004;**80**:430–434. doi: 10.1136/sti.2004.010421

See end of article for authors' affiliations

Correspondence to: Dr Sarah Thomsen, Liljeholmstorget 52, S-117 61, Stockholm, Sweden; sthomsen@fhi.org

Accepted for publication 17 July 2004

Objective: To explore the reasons why men who have sex with sex workers in Kenya refuse to use condoms in order to develop potential interventions that might help to overcome these barriers.

Methods: We conducted participant observations over a period of 2 months in the bars, discos, shebeens, and guesthouses of Mombasa, Kenya, where many of the sexual transactions are initiated.

Results: Analysis of the participant observations revealed at least 50 reasons for not using a condom, which we grouped into six categories: condoms are not pleasurable, condoms are defective, condoms are harmful, condoms are unnecessary, condoms are too hard to use, and external forces prohibit using condoms.

Conclusions: Some of the reasons men say they do not use condoms would be difficult to affect directly. Others are the result of gaps in knowledge and have not been impacted through better communication strategies. Finally, some of the reasons for not using condoms, such as men's weaknesses, and the loss of pleasure, could possibly be addressed through the introduction of female controlled devices. However, the most important conclusion of this paper is that men who pay for sex do so because it is pleasurable and many men do not find the male condom pleasurable. Therefore, messages targeted at men who have sex with sex workers may not be 100% successful if they only emphasise the benefits of condom use as disease control.

Female sex workers are the targets of numerous sexual health interventions given their status as a high risk group for sexually transmitted infections (STIs), including HIV/AIDS. In Kenya, between 27% and 75% of sex workers are infected with HIV, depending on the location.^{1–3} Given their profession, the most effective method of preventing HIV/AIDS is condom use. However, female sex workers often face resistance from their sexual partners when it comes to using male condoms. This is particularly problematic for those sex workers who are very poor or who have children to support and thus have less bargaining power.⁴ For this reason, sex workers in Kenya rarely achieve 100% condom use with all of their partners, thus increasing their risk of contracting an STI and spreading it to others.^{2, 5}

In order to counter men's resistance to condoms, and to stop the spread of STIs into the general population, there are frequent exhortations in the literature to include men in condom promotion activities.^{6–9} However, there are relatively few studies that have looked at clients of sex workers.⁷ The current study was conducted under the larger objective of identifying ways of increasing the proportion of sex acts protected by male condom use, and possibly introducing the female condom, in a population of sex workers and their partners, referred to here as men who have sex with sex workers (MSSWs). The larger study consisted of participant observations, in-depth interviews, focus group discussions, and a cross sectional survey. The participant observations, which were conducted over a period of 2 months, were dominated by a large number of spontaneous negative comments about male condoms. It was clear that any intervention with MSSWs would have to address the wide range of problems that men have with the device. Therefore, we sought to categorise the reasons for disliking or not using condoms in order to identify ways to intervene to decrease the spread of STIs/HIV/AIDS. In particular, was there a role for the female condom?

In this paper, we present the results of this categorisation and analysis and relate them to previous research in the field. Results are also compared to a theory of health behaviour change, and a new paradigm for thinking about condom interventions with MSSWs is explored. Finally, recommendations for interventions are discussed.

SETTING AND METHODS

This study was set in the district of Mombasa, a major economic centre for Kenya and east Africa, with important port, rail, trucking and tourism industries. Depending on the season, between 2000 and 10 000 sex workers in Mombasa serve clients working in these industries.

Two male and two female field workers, trained by American and Kenyan anthropologists, conducted over 100 participant observations with sex workers, their clients, and other key informants who live and work in two areas of Mombasa. Data were collected in bars, nightclubs, and shebeens (bar where home brew is sold) in these two areas.

When possible, the field worker participated in the activity being observed (for example, having a drink, dancing in a club). Field workers were instructed to evaluate each situation individually, and when they felt rapport had been established with a man or group of men, they mentioned their research topic. Often this was enough to begin a conversation about how people felt about sex work and/or HIV/STIs. Only brief notes, if any, were taken during the observation period. Field workers later expanded these notes into a narrative description of what they saw and heard, making sure to include the same terms and phrases used by the men. These expanded field notes were then coded, using both a priori objective based codes and emerging theme based codes, and then analysed.

Abbreviations: MSSWs, men who have sex with sex workers; STIs, sexually transmitted infections

Table 1 The reasons men give for not using condoms

Condoms are not pleasurable	1 Condoms “deny” pleasure 2 They want sex “flesh to flesh” 3 [Men say] “It is like having sex with yourself” (F) 4 Using a condom means “losing twice” 5 No sexual satisfaction for the woman if sperm not deposited in her vagina 6 Women need friction, which they do not get from the condom 7 [Men say] “It takes too long to ejaculate” (F)
Condoms are defective	8 Condoms have insects (<i>wadadu</i>) 9 HIV/AIDS can penetrate condoms 10 Women’s fluids are twice as acidic as sperm and condoms are porous 11 Condoms developed for northern climate. In hot climates, they weaken and develop holes 12 Condoms are too tight 13 Some penises are too long to fit in condoms 14 Condoms are not helpful because they have not contained HIV/AIDS 15 Condoms come off during sex so no need to use them 16 A peer educator was dying and said their condoms had expired and were useless 17 White people introduced condoms laced with HIV/AIDS to Africa to reduce the population 18 Women who preach condom use die even more than others 19 Condoms collect sperm that infiltrate back to the stomach causing problems 20 Condoms cause wounds in women’s private parts because of too much friction 21 Condoms burn one’s penis. If you pull a condom hard it will burst into flames 22 Condoms cause allergies 23 Condoms can get lost in the woman’s vagina 24 A man must release his sperm; keeping them inside his body for a month will cause backaches 25 Discussing condoms makes them feel like they have HIV/AIDS 26 Throwing away sperm means killing children 27 [Men say] “Condoms cause cancer” (F) 28 They promote promiscuity by giving a false sense of security (F)
Condoms are harmful	29 You can choose women by an “instinctive blood check” 30 Don’t need with rural/young girls 31 One can avoid infection by taking medicine before sex and urinating after 32 HIV/AIDS does not exist. It is actually wasting (<i>chiraa</i>) 33 If infected you have sex with many others so there is none left in you
Condoms are unnecessary	34 Men are too shy to buy them in public 35 Men don’t remember to buy them 36 Men have a “weak sexual nature” 37 Men should not have to worry about carrying condoms 38 Men don’t have anywhere to carry condoms 39 Those who are already infected want to infect others so they do not die alone 40 One cannot put on condoms without getting aroused, but once aroused, one cannot think 41 Alcohol abuse makes people forget 42 Sex outside happens so quickly there is no time 43 HIV/AIDS is a calamity long prophesied by the bible. Humans have no control over this 44 Condoms are against God’s wishes. You should go out and multiply 45 God intended sex to be pleasurable 46 Dying from HIV/AIDS is like dying from an automobile accident. You cannot control it 47 We are all going to die anyway, so we might as well die happy (F) 48 Those who use condoms have “lost hope” 49 For the Luo ethnic group, sex is used for certain transactions; condoms interfere with this 50 Using condoms in a relationship means you do not trust the person
Perceived ability	
External forces	

(F) denotes that the comment originated with a female sex worker, referring to the excuses men give her for not using a condom.

This study was approved by the protection of human subjects committee at Family Health International in North Carolina, USA, as well as by the National AIDS Control Programme of Kenya.

RESULTS

At least 50 reasons for not using condoms were mentioned by the men we observed. We have summarised these reasons into six categories: (1) condoms are not pleasurable; (2) condoms are defective; (3) condoms are harmful; (4) condoms are unnecessary; (5) condoms are too hard to use; and (6) external forces prohibit using condoms (see table 1). Each of these themes is explored below.

Condoms are not pleasurable

By far the most common reason given for not liking condoms was the lack of sensation respondents reported while using a condom, although only seven of the 50 reasons are subsumed under this category. The most common expression heard was “I cannot eat sweets with the cover on.” One man was so vehemently against condoms that he responded, “If I must have sex with a condom I would rather drink my *changa’a* (home brew) and go to sleep.”

Some men felt that having to use a condom with sex workers was “losing twice,” once because you lose pleasure and once because you lose money to the sex worker. Some men also claimed that women need friction and/or sperm in order to feel pleasure, and therefore using a condom would deny her the pleasure that she would feel without one. In short, it was universally agreed that best sex was “*nyama kwa nyama*,” or “flesh to flesh.”

Condoms are defective

Another major reason given for not using condoms is that some men believe they are defective. For example, a couple of men claimed that condoms were not enough to protect against HIV/AIDS because women’s “fluids” are twice as acidic as sperm and condoms are porous. Because of this, “osmosis” draws female fluids through the condom walls into the penis, thus transferring HIV/AIDS. One man tried to demonstrate this to a group of people (using the field worker as a model) in the following manner.

- ...he took a male condom and put it on my middle finger. He took sliced onion and rubbed the fluid thoroughly...on the condom. He then took green pepper and rubbed it forcefully on the same spot. He asked me what I felt. I did not feel anything. He repeated the same experiment on someone else who again said he felt nothing. He did it on himself and said he felt hot, meaning the effect of pepper and onions had infiltrated the condom. What he was trying to prove was that the vaginal fluids could easily go through the condom because they are acidic.—“*Educated*” man in a *shebeen*

A more common myth was that HIV/AIDS could penetrate condoms, either because they weaken in warm climates, or because the virus itself is small enough to penetrate the latex “pores.” Other reasons that were related to condoms being defective were that they could not be helpful because they have not contained the spread of HIV/AIDS, and that condoms break during sex anyway, so there is no need to use them.

Condoms are harmful

In addition to being defective, condoms were reported to actually be physically dangerous. In fact, this category contained the greatest variety of reasons for disliking condoms, the most common one being that condoms are laced with HIV/AIDS:

- He said that condoms were first introduced in Africa as contraception to enable the population to reduce. The condom, he added, was purposely laced with HIV/AIDS virus. The white man then brought retroviral drugs that are too expensive for Africans to buy. As an alternative to these non-affordable drugs, the whites now intensify their business on condoms, which they continue to preach as the most effective preventive method.—*Client in a Chang'aa den*
- He was very categorical that he cannot use condoms ever in his life and that non-use of condoms is what has made him escape death to date. In addition to these remarks, he said that the condom is bad because it was made to kill Africans. He referred to condoms as "*ugonjwa wa umbwa*," meaning "a dog's disease."—*40 year old man in peer educator's house*

Other myths about the harmful nature of condoms include that they collect sperm that infiltrates back to the stomach, causing stomach problems, they cause wounds in women's "private parts" because of too much friction, they cause allergies, they can burst into flames, they can get lost in the woman's vagina, they spread cancer, and cause infertility.

Condoms are unnecessary

The fourth major category of reasons for not using condoms was that they are unnecessary. The most common of these reasons denies the existence of HIV/AIDS. Proponents of this belief, primarily from the *Luo* ethnic group, claimed that the disease was actually just the symptoms of a traditional disease called *chiraa*, or wasting. The *Luo* believe that a person with this disease has done something taboo according to their cultural beliefs, and is therefore wasting away.

Others saw condoms as unnecessary because they had other methods to avoid HIV/AIDS. For example, a couple of men claimed to have the ability to do an "instinctive blood check," meaning that if they got near a woman who was infected, they would instantly know and avoid her.

- He explained that "instinctive blood check" means involving the sense of feeling to see if a woman's blood is akin to his—that is, if there is an immediate attraction between them then he knows that the lady's blood is clean.—*45 year old watchman outside a house*

Some men claimed they only had sex with rural, young, old, or very unattractive women in the belief that these women would be either too isolated to have met other men, or not desirable enough for other men—and therefore would not be infected, and not require condom use. A claim was also made on several occasions that if you are infected, having unprotected sex with as many other people as possible will allow you to pass the disease on to them and eliminate it from yourself. Finally, one man said that instead of using condoms, he avoided HIV/AIDS by taking two different types of aspirin before having sex, and then urinating after sex.

Condoms are too hard to use

Nine of the 50 reasons for not liking or using condoms that men spontaneously cited had to do with their professed inability to use condoms. Some of these reasons have to do with purchasing or carrying condoms and some concerned men's weak sexual nature. For example, it was claimed that men are too shy to buy condoms in public, that they don't remember to buy them, and that they don't have anywhere to carry them. For this reason, women should carry them since they have handbags. In addition, men have other things to worry about and should not have to think about carrying a condom.

- "Women are the ones who should carry condoms because men have other duties to attend to. Men should not be subjected to thinking about condoms. They should be left alone!"—*35–40 year old man in chang'aa den*

Another group of responses had to do with men's inherent "weak sexual nature," and their inability to think when aroused or drunk. In fact, one respondent drew a parallel between the two:

- "The sexual urge is equivalent to drunkenness, which means one has to deal with the feelings first and reasoning comes later."—*Musician, 25–30 years old in bar*

Men who espoused this belief claimed that a man thinks about condoms after sex, whereas women think about them before. The paradox that they identified was that one cannot put on a condom without getting aroused, but once aroused, one cannot think. Finally, lack of time was also considered to hamper one's ability to put on a condom. This is particularly the case, if one has sex in the "green lodge" (that is, on the grass or in the bushes).

External influences

The final eight reasons that men used to rationalise having unprotected sex can be seen as blaming outside forces for one's inability to act in a certain way. These outside forces could be religious, cultural, or simply fate. The most common reason cited was fate. A typical statement was "*kufa gari kufa dereva*," or "die the vehicle, die the driver." In other words, dying from HIV/AIDS is just like dying from an automobile accident (which is very common in Kenya); you cannot control either one. A related reason that we heard was that since everyone has to die, one may as well die happy, or "if a fly dies on meat then there is no problem."

Religion was used in several ways as a reason for not protecting oneself. One belief was that HIV/AIDS is a calamity that was long prophesied by the Bible, over which humans have no control. Another belief was that condoms are against God's wishes, and one should go out and multiply, or that God intended sex to be pleasurable.

- He repeated that there is no rationality in human beings if one still wears a condom while having sex. He said, "If dogs know what to do and they have free sex as intended for them by God, man would be less rational than a dog if he wears a condom while having sex."—*45 year old watchman outside a house*

Finally, an external force that men sometimes said they do not have control over is their girlfriends. A widespread argument for not using condoms in long term relationships was that it would imply either that one was infected, or did not trust one's partner.

- I can never use a condom on my girlfriend. That is like implying I do not trust her. In that case it would better to break the relationship.—*25–30 year old shopkeeper in shop*

In such cases, some men reasoned, using a condom would risk angering one's girlfriend.

DISCUSSION

The purpose of this study was to discover the reasons why MSSWs may not be using condoms, despite the risks involved, and to provide recommendations for interventions to counteract this risky behaviour. The 50 reasons were categorised into six groups. However, it is also possible to look at the 50 reasons from a theoretical perspective, using, for example, the health belief model. This theory posits that individuals conduct a type of cost-benefit analysis before

using preventative health services. An individual's "readiness to act" is accounted for by her personality, the perceived threat of the disease, her perceived benefits of the health intervention, her own self efficacy, and her perceived barriers to act. Cues to action, such as public health announcements, stimulate the person who possesses the right combination of the above attributes to then use the service.¹⁰

The most common reasons for not using a condom that surfaced in our study had to do with the perceived barriers, or the "lack of benefits," of using the device. Meta-analyses have also shown that the "barriers and benefits" aspects of the health belief model are the strongest predictors of AIDS related behaviour change.¹¹ Firstly, the costs associated with using condoms seem to outweigh their benefits, particularly when it comes to pleasure.¹²⁻¹³ Another way of looking at this is the perceived benefits of *non*-condom use are higher than the benefits of condom use.¹⁴ Regardless of how it is categorised, men buy sex from women because it is pleasurable (at least for the men). Using a condom when one has paid for this pleasure is seen as counterintuitive.

Other barriers to using condoms had to do with the perceived dangerous effects of using condoms. These beliefs, which are primarily myths, have been documented elsewhere in Kenya. In a small survey in Kisumu, researchers found that 47% of the respondents believed that HIV could pass through the pores in condoms, 44% thought that condom lubrication could contain HIV, and 40% agreed with the statement that two or more condoms should be worn simultaneously to prevent HIV.¹⁵

Another key component of the health belief model (and most behaviour change models) is risk perception—that is, an individual will not be motivated to change if he does not perceive himself at risk. Some of the men that we observed admitted that HIV/AIDS exists, but claimed that they had other ways of avoiding it than using condoms. Others expressed low risk perception by stating they had other ways of avoiding it, that it was the result of cultural taboos and not directly related to sexual activity. Denial of the existence of the disease may be a coping mechanism when so many people around you are infected or dying, or it may be another rationalisation for not using a condom.

Even if these men perceived risks in having sex with sex workers, and believed in the benefits of using condoms, this might still not be enough to motivate them to use condoms; they must feel capable of using them as well. "Self efficacy" to use condoms has consistently proved to be a significant predictor of subsequent condom use in men and women around the world.¹⁶⁻¹⁸ The research reported here found evidence for a lack of self efficacy to use condoms among men. This was primarily related to the belief that men are weak when it comes to sex, and women are strong, which has also been reported in various locations around Africa.⁸⁻¹⁹⁻²⁰

Implications

Some of the reasons that men cited for not using condoms, such as religious convictions or fatalism, may not be changeable. Others, such as distrusting the efficacy of condoms, are the result of myths and misinformation and do not seem to have been impacted much by decades of information campaigns in Africa. However, the most commonly cited reason had to do with loss of pleasure. Although it is frequently mentioned in the literature as a reason for not using condoms, the loss of pleasure that many men feel with the male condom has not received enough attention in HIV/AIDS programmes. In fact, "a fundamental characteristic of all HIV prevention strategies is that, to reduce risk, individuals are asked to give up behaviour that is enjoyable, gratifying, highly reinforced, and often longstanding, and replace it with alternative patterns that are almost certainly

Key messages

- There is a great deal of resistance to the male condom in Mombasa, even among those men who have the riskiest sex
- There is a need to change HIV/AIDS prevention messages from preventing disease to eroticising safer sex, particularly in groups such as men who have sex with sex workers
- The female condom may have a part to play in this paradigm shift because it heightens pleasure, does not put the onus of safety on the man, and is not as stigmatised as the male condom

less gratifying, more awkward or inconvenient, and more difficult to enact than present behaviour."²¹

Desai²² has suggested a switch from a fertility based approach to contraceptive uptake to a sex based one. We would advocate the same paradigm shift in the field of HIV prevention—that is, HIV/AIDS prevention programmes need to focus on the fact that most people who engage in sex (particularly those who purchase sex) are not thinking about disease, they are thinking about enjoying themselves. From the male perspective, the desire for pleasure can be the sole motivator for sexual relationships, and therefore, outweigh any perceived need for condom use. In fact, the type of men who have sex with sex workers (whether as a client or as a boyfriend) may be users *because* they are risk takers. They may also represent a subgroup of men with a high sexual drive, hence their greater sexual activity.

All of the above implies that prevention efforts to decrease the sexual transmission of HIV must address the norms and desire pleasure motivations that lead to sexual behaviour. We need to see HIV/AIDS as an "epidemic of desire,"²³ and address it with messages other than disease prevention. Kelly and Kalichman have advocated eroticising safer sex in order to address sexual desire in HIV/AIDS prevention.²¹ Such efforts have been promoted in the United States and Europe. However, this approach has been limited in Africa.

The shift from a disease prevention based approach to one that eroticises sexual relationships must also consider other measures that reduce the risk of transmission (or acquisition) of STIs within the pleasure paradigm. One of these methods may be the female condom, which is purported to provide more pleasure to men and women than the male condom.²⁴⁻²⁵ The female condom (or other female controlled methods, such as spermicides) may also be an answer to men's purported lack of self efficacy to use condoms. However, more research needs to be done to reveal whether many (or any) of men's objections to the male condom will be mitigated by the female condom.

In this paper we have not addressed the possibility that the reasons that men expressed for not using condoms were their actual reasons or if they were simply justifications/rationalisations. It seems likely that the latter was also probably true. In any case, most of the reasons that were voiced here have been mentioned elsewhere; the important fact is that there is an underlying disregard for risk in MSSWs in Mombasa, which is heightened (or perhaps caused) by a great deal of sexual desire. We believe that addressing this desire is key to reducing HIV/AIDS in this population.

ACKNOWLEDGEMENTS

This research was supported by the US Agency for International Development. The contents do not necessarily reflect FHI or USAID views and policies. We would like to thank the following for their

assistance in making this study possible: the respondents, the International Centre for Reproductive Health in Mombasa, the Provincial Medical Officer (PMO) of Coast Province, and the National AIDS and STD Control Programme (NASCOP) of Kenya. Finally, we would like to thank the four field workers: Agnes Runyiri, Zablon Omungo, Wilkister Ombidi, and George Dzombo, and their supervisor Gerald Kimondo, for their tireless efforts to understand the psyche of MSSWs in Mombasa.

CONTRIBUTORS

ST designed and oversaw the study, she also wrote the major portions of the introduction, results, and discussion; MS helped in the design and interpretation of the study, he also contributed significantly to the discussion; CT-R supervised the conduct of the study and contributed significantly to the methods.

Authors' affiliations

S Thomsen, M Stalker, Family Health International, Durham, NC, USA
C Toroitich-Ruto, Family Health International, Nairobi, Kenya

Sources of funding: United States Agency for International Development.

Conflict of interest: none.

REFERENCES

- 1 Fonck K, Kaul R, Kimani J, *et al.* A randomized, placebo-controlled trial of monthly azithromycin prophylaxis to prevent sexually transmitted infections and HIV-1 in Kenyan sex workers: study design and baseline findings. *Int J STD AIDS* 2000;**11**:804-11.
- 2 Hawken MP, Melis RD, Ngombo D, *et al.* Part time female sex workers in a suburban community in Kenya: a vulnerable hidden population. *Sex Transm Infect* 2002;**78**:271-3.
- 3 US Bureau of the Census. HIV/AIDS Surveillance Data Base (web Page). June 2001; Available at www.census.gov/hip/publications/hivtable.html.
- 4 Heise LL, Elias C. Transforming aids prevention to meet women's needs: a focus on developing countries. *Soc Sci Med* 1995;**40**:931-43.
- 5 Ngugi EN, Plummer FA, Simonsen JN, *et al.* Prevention of transmission of human immunodeficiency virus in Africa: effectiveness of condom promotion and health education among prostitutes. *Lancet* 1988;**2**:887-90.
- 6 Lowndes C, Alary M, Gnintoungbe C, *et al.* Management of sexually transmitted diseases and HIV prevention in men at high risk: targeting clients and non-paying sexual partners of female sex workers in Benin. *AIDS* 2000;**14**:2523-34.
- 7 O'Farrell N. Enhanced efficiency of female-to-male HIV transmission in core groups in developing countries: the need to target men. *Sex Transm Dis* 2001;**28**:84-91.
- 8 Voeten HA, Egesah OB, Ondiege MY, *et al.* Clients of female sex workers in Nyanza province, Kenya: a core group in STD/HIV transmission. *Sex Transm Dis* 2002;**29**:444-52.
- 9 Wilson D, Chiroro P, Lavelle S, *et al.* Sex worker, client sex behaviour and condom use in Harare, Zimbabwe. *AIDS Care* 1989;**1**:269-80.
- 10 Rosenstock IM, Strecher VJ, Becker MH. The health belief model and HIV risk behavior change. In: DiClemente RJ, Petson JL, eds. *Preventing AIDS: theories and methods of behavioral interventions*. New York: Plenum, 1994.
- 11 Carmel S. The health belief model in the research of AIDS-related preventive behavior. *Pub Heal Rev* 1990/91;**18**:73-85.
- 12 Bauni EK, Jarabi BO. Family planning and sexual behavior in the era of HIV/AIDS: the case of Nakuru District, Kenya. *Stud Fam Plann* 2000;**31**:69-80.
- 13 Sherman DW, Kirtan CA. The experience of relapse to unsafe sexual behavior among HIV-positive, heterosexual, minority men. *Appl Nurs Res* 1999;**12**:91-100.
- 14 Parsons JT, Halkitis PN, Bimbi D, *et al.* Perceptions of the benefits and costs associated with condom use and unprotected sex among late adolescent college students. *J Adolesc* 2000;**23**:377-91.
- 15 Volk JE, Koopman C. Factors associated with condom use in Kenya: a test of the health belief model. *AIDS Educ Prev* 2001;**13**:495-508.
- 16 Ford K, Wirawan DN, Muliawan P. Social influence, AIDS/STD knowledge, and condom use among male clients of female sex workers in Bali. *AIDS Educ Prev* 2002;**14**:496-504.
- 17 Mahoney CA, Thoms DL, Ford OJ. Health belief and self-efficacy models: their utility in explaining college student condom use. *AIDS Educ Prev* 1995;**7**:32-49.
- 18 Peltzer K. Factors affecting condom use among South African university students. *East Afr Med J* 2000;**77**:46-52.
- 19 Gysels M, Pool R, Bwanika K. Truck drivers, middlemen and commercial sex workers: AIDS and the mediation of sex in south west Uganda. *AIDS Care* 2001;**13**:373-85.
- 20 Caldwell J, Orubuloye I, Caldwell P. Obstacles to behavioral change to lessen the risk of HIV infection in the African AIDS epidemic: Nigerian research. In: Caldwell J, *et al.*, eds. *Resistances to behavioral change to reduce HIV/AIDS infection*. Canberra, Australia: Health Transition Centre, 1999:113-24.
- 21 Kelly JA, Kalichman SC. Increased attention to human sexuality can improve HIV-AIDS prevention efforts: key research issues and directions. *J Consult Clin Psychol* 1995;**63**:907-18.
- 22 Desai J. *The private sector in family planning services Demand and supply issues*. Washington, DC: The Policy Project, The Futures Group International, 1997.
- 23 Dowsett GW. Some considerations on sexuality and gender in the context of AIDS. *Reprod Health Matters* 2003;**11**:21-9.
- 24 Ankrah E, Attika S. *Adopting the female condom in Kenya and Brazil: perspectives of women and men. A synthesis*. Arlington, Virginia: Family Health International FHI, AIDS Control and Prevention Project [AIDSCAP], Women's Initiative, 1997:47.
- 25 Cecil H, Perry M, Seal D, *et al.* The female condom: what we have learned thus far. *AIDS Behav* 1998;**2**:241-55.