

Abstinencia sexual, contracepción y uso del preservativo en mujeres jóvenes africanas: análisis secundario a partir de los datos de una encuesta

Control del Factor Impacto

The Lancet

Total de citas en 2003: 123292

Factor de impacto: 18. 316

John Cleland, Mohamed M Ali. **The Lancet**. London: Nov 18-Nov 24, 2006. Vol.368, Iss. 9549; pg. 1788, 6 pgs

Artículo completo

Summary

Background Drug therapy for people with AIDS is a humanitarian priority but prevention of HIV infection remains essential. Focusing on young single African women, we aimed to assess trends in a set of behaviours—sexual abstinence, contraceptive use, and condom use—that are known to affect the rates of HIV transmission.

Methods We did a secondary analysis of public-access data sets in 18 African countries (132 800 women), and calculated changes in a set of behavioural indicators over time. We standardised these trends from nationally representative surveys to adjust for within-country changes in age, education, and type of residential location.

Findings Between about 1993 and 2001, the percentage of women reporting no sexual experience changed little. During the same period, the percentage of sexually experienced women who reported no sexual intercourse in the previous 3 months (secondary abstinence) rose significantly in seven of 18 countries and the median for all 18 countries increased from 43.8% to 49.2%. Use of condoms for pregnancy prevention rose significantly in 13 of 18 countries and the median proportion increased from 5.3% to 18.8%. The median rate of annual increase of condom use was 1.41 percentage points (95% CI 1.12-2.25). In the 13 countries with available data, condom use at most recent coitus rose from a median of 19.3% to 28.4%. Over half (58.5%) of condom users were motivated, at

least in part, by a wish to avoid pregnancy.

Interpretation Condom promotion campaigns in sub-Saharan Africa have affected the behaviour of young single women; the pace of change has matched the rise in contraceptive use by married couples in developing countries over recent decades. Thus continuing efforts to promote condom use with emphasis on pregnancy prevention are justified.

Introduction

An aura of disappointment and frustration surrounds global efforts to check the spread of HIV in most low-income and middle-income countries. Despite substantial investment in the promotion of safe sex and marketing of condoms, only Thailand and Uganda have clearly succeeded in stemming epidemics in the general population, though other countries in Africa and the Caribbean also show some signs of progress.¹ Even the most intensive interventions, targeted at young people or at specific localities, have not achieved all of their aims.²⁻⁴ Two responses to this perceived impasse have predominated. The first is to conclude that the necessary changes in sexual behaviour will only occur as a result of fundamental changes that reduce poverty and gender inequality.⁵⁻⁸ The other response is to hope that increased access to drug therapy for AIDS will present new opportunities for effective prevention.^{9,10}

Abstinence and condom use are two of the three elements promoted by major preventive programmes that emphasise the ABC (abstain, be faithful, and use condoms) approach. The relative importance of abstinence and condom use for HIV control has been controversial. In the USA the issue is further complicated by moral arguments surrounding the President's Emergency Plan for AIDS Relief (PEPFAR), which emphasises abstinence.¹¹⁻¹⁴ We do not seek to engage with this debate; rather, we examine modification of behaviour in view of the threat of AIDS and the inseparable risk of unwanted pregnancies.

We aimed to assess the evidence for behavioural change by young women in sub-Saharan Africa, which is the region most affected by HIV/AIDS. Our report complements detailed analyses of change in specific countries or small groups of countries, especially those of the MEASURE (Monitoring and Evaluation to Assess and Use Results) project,¹⁵ by examining changes in a few behavioural indicators in a large sample of African countries. Specifically, we analysed trends in sexual abstinence,

contraception, and condom use by single women aged 15-24 years, in countries that had done two or more comparable surveys between 1990 and 2004.

Methods

We analysed data from Demographic and Health Surveys (DHS), which use nationally representative samples, and standard instruments and procedures for collection and processing of data. The survey design of DHS is generally stratified, with a first-stage selection of geographical clusters, followed by random selection of households within each cluster to identify women aged 15-49 years. These women, the primary respondents, were interviewed by trained female staff using a structured instrument that had been translated into local languages. Response rates were typically 90% or more.¹⁶

We examined individual-record data files from DHS surveys for single women (ie, never married) aged 15-24 years. Single women comprised 49% of all those in this age band. With these restrictions on age and marital status, the sample size of each national survey ranged from 656 to 3220 women. We focused on the following behavioural indicators; primary abstinence (or virginity); secondary or temporary abstinence in sexually experienced women (defined as no intercourse in the 3 months preceding the survey); and use of specific contraceptive methods, including condoms, in women who had been sexually active in the 3 months preceding the survey. Secondary abstinence was included as an indicator of more cautious selection of sexual partners, reduced coital frequency, or both. We also analysed information on condom use at most recent coitus and the source of any condoms used.

In 18 countries in sub-Saharan Africa, we had two or more surveys from which to collate the relevant information, and in seven of these countries there were three surveys. The median dates of the earliest and most recent sampling rounds were February, 1993, and January, 2001. During this period these 18 countries accounted for about 56% of the population of sub-Saharan Africa. Data on condom use at most recent coitus were available for 13 of the 18 countries. For these 13 countries, the median dates of the earliest and most recent survey rounds were October, 1996, and February, 2002. The list of countries and country-specific results is shown in webtables 1, 2, and 3.

To take account of changes in the composition of successive samples from each country that might distort trends, estimates from the more recent surveys for each country were standardised by the composition of the

earliest survey with respect to age (in 3 year bands), education (whether up to primary school level or higher), and urban or rural location. All assessments were based on standardised estimates. The median date of fieldwork was calculated for each survey and used to estimate the rate of annual change in the prevalence of condom use. All rates are expressed as absolute percentage points. Exact 95% CIs for the median values were calculated from the binomial distribution. We assessed the significance of within-country changes using logistic regression by including a binary indicator for the survey round (0=earliest survey and 1=most recent survey). We also took the cluster design of surveys into account. We applied survey-normalised weights to take account of variations in probabilities of selection and non-response. All analyses were done with Stata statistical software (version 8).

Role of the funding source

The sponsor of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report. The corresponding author had full access to all the data in the study and had final responsibility for the decision to submit for publication.

Results

Figure 1 shows the standardised trend in the percentage of young single women who reported no experience of sexual intercourse. The median value of all survey estimates remained essentially unchanged, at about 60%, though the dispersion of values contracted over time. The proportion of young women declaring themselves to be virgins rose significantly in seven of 18 countries and fell significantly in six countries. The changes in proportion exceeded 10% only in Cameroon and Ghana (webtable 1).

The median value for abstinence over the 3 months preceding the survey in sexually experienced single women increased from 43.8% to 49.2% (figure 2). An increase in temporary or secondary abstinence was significant in seven of the 18 countries and exceeded 10% in five of these countries (webtable 1). A decrease was significant in Burkina Faso ($p=0.003$). In most of the seven countries with three surveys, trends were erratic.

For women who reported coitus in the 3 months preceding the DHS surveys (n=9100), use of any contraceptive method rose slightly during the study period from a median of 32.6% to 36.5% (figure 3). Use of highly effective non-barrier methods (predominantly oral contraceptives) changed little, whereas use of less effective methods (mainly periodic abstinence) fell slightly. However, use of condoms rose substantially during the study period, from a median of 5.3% to 18.8%. This rise in condom use was significant in 13 of 18 countries and exceeded 10% in nine countries (webtable 2). Condom use was not related to the severity of national HIV epidemics-some of the largest increases in condom use were recorded in west African countries where HIV prevalence is lower than in eastern or southern Africa.

The annual rate of increase in use of condoms for pregnancy prevention between the earliest and most recent survey was 2% or more in seven countries. The median rate of annual increase for all 18 countries was 1.41% (95% CI 1.12-2.25). Trends for condom use were monotonic in all countries that had three surveys during the study period (webtable 2).

The median rate of condom use at most recent coitus also rose, from 19.3% to 28.4% (figure 4). In seven of the 13 countries for which these data were available, the rise in condom use was significant and in six of the seven countries it exceeded 10%. The median rate of annual increase was 2.10% (95% CI 0.77-3.06). The median rate of annual increase in condom use for contraception, recalculated for the same 13 pairs of surveys, was 1.99% (95% CI 1.02-2.38).

Information about contraceptive use and condom use at most recent coitus was ascertained at different times during the DHS interviews, and the question on condom use at most recent coitus made no mention of the motive for their use. Therefore, we examined the statements of women who used a condom at most recent coitus to gain insights into dual protection and the probable importance of contraception as a motive for condom use. In the most recent survey round of the 13 countries, between 34% and 79% of women who had used a condom at most recent coitus had stated earlier in the interview that they were using condoms for pregnancy prevention; the median was 58.8% (webtable 3). In the same survey round, the median proportion of women who reported use of an effective contraceptive method was 5.8%, the proportion who used a less effective non-barrier method was 2.2%, and 24.5% reported that they did not use contraceptives.

Women who reported using condoms for pregnancy prevention were asked about the source of their supply. In seven of the 18 countries surveyed in the most recent round, 90% or more of women reported that pharmacies

and shops were the main sources of supply and in a further eight countries this proportion was 70-89%.

Discussion

Self-reported sexual behaviour is commonly regarded with scepticism, which is partly justified by the risk that survey respondents censor their answers, especially as public-health messages intensify. We cannot validate the trends we have identified in reported behaviour, because there is no evidence on the incidence of sexually transmitted infections that is disaggregated by marital status, and because of the difficulty of comparing condom sales with reported use.¹⁷ Thus an extreme interpretation of our findings is that they indicate no more than a growing tendency for young women in Africa to give socially desirable responses.

We accept that willingness to disclose premarital sex or use of condoms probably varies between societies and can be affected by survey design, the sequence and wording of questions, and the mode of data capture.^{18,19} Because of this, comparisons between countries and of results from different types of inquiry can be hazardous. We circumvented these pitfalls by focusing on trends within countries and by using information from the DHS rounds, which are regarded as the gold standard for collection of quantitative data from large-scale interview-based surveys in developing countries. We cannot claim that this study is without flaws but we are cautiously confident that the direction and approximate magnitude of trends in reported behaviour are valid.

A more complete picture of changes in behaviour of young single African women in response to the threat of HIV infection would have included evidence on multiple sexual partners. Some commentators have argued that the B (Be faithful) element of ABC health messages, involving reduction in sexual contact with multiple partners, is crucial to stemming HIV epidemics.²⁰ We decided against inclusion of this factor for two reasons. First, there is convincing evidence that women under-report multiple partners because of social disapproval.¹⁸ Second, the DHS programme changed the relevant sequence of questions in the late 1990s, jeopardising comparability between results from early and more recent survey rounds.

We chose our study population, of single women aged 15-24 years, because their behaviour, together with that of young men, will largely shape epidemic pathways in the next decade. In the 18 countries we studied these women constitute a sizeable fraction (about 20%) of all women aged 15-49 years. Despite the fact that in mature HIV epidemics about 50% of HIV infections occur within marriage, sexually active single people remain at

higher risk than those who are married.^{21,22} And, finally, patterns of sexual behaviour established at a young age probably persist into adulthood.^{23,24}

We noted a substantial rise in the use of condoms reported by young, sexually active, single women in sub-Saharan Africa. Regrettably, the DHS data did not contain information that would allow us to estimate the consistency of condom use; however, condom use at most recent coitus is highly correlated with consistent use.^{25,26}

Some will argue that an annual increase in condom use of 1.4% per year—the median for all 18 countries—is far too slow a pace of change to justify any claim that condom promotion campaigns have been effective in affecting the behaviour of young women in Africa. What pace of change might reasonably have been expected? One appropriate yardstick might be the rise in contraceptive practice by married couples in developing countries. Between 1965 and 1998 the prevalence of contraceptive use in developing countries rose from about 10% to nearly 60%, corresponding to an average annual increase of 1.5%.²⁷ Like condom use, adoption of contraception requires substantial adjustments in attitudes towards procreation and sex. This example suggests that a 1.4% annual increase in the reported use of condoms by young single women in 18 African countries can be regarded as at least a moderate success.

Of course, in view of the severity of AIDS in eastern and southern Africa, a faster pace of behavioural modification would be highly desirable. However, to expect abrupt, major changes in behaviour was probably unrealistic, especially since warnings of the threat posed by AIDS and methods for prevention and treatment of the disease came largely from more developed countries and were initially received with denial and suspicion in much of Africa. Behavioural change on a large scale tends to take time, since it needs to be preceded by a period in which unfamiliar messages become assimilated into local social networks.²⁸

Although not all premarital conceptions are unwelcome in African communities,²⁹ in nearly all African DHS rounds, fewer than 10% of sexually active, single women stated that they would like to have a child in the next 12 months. Thus the need for contraception was high, as was the likelihood of unwanted pregnancy if contraception was not used. Induced abortions are illegal in most African countries, but are nevertheless thought to be common. The proportion of all unsafe abortions that occur in young women and the number of abortion-related deaths are both higher in Africa than in other regions.^{30,31} For example, in Ghana, unsafe abortion probably kills more women than AIDS does.³² Thus, the fear of unwanted

pregnancy might be as great as the fear of AIDS for many young women in western and central Africa.

Against this background, mixed messages can be drawn from our findings. As shown in figure 3, the rise in overall contraceptive use has been negligible. The shift away from periodic abstinence is welcome because of the high failure rates of this method caused by widespread misunderstanding of the safe period.³³ The absence of evidence that use of oral contraceptives or other modern non-barrier methods has increased is perhaps surprising but might indicate difficulties with access or health concerns, coupled with anxiety that future childbearing might be jeopardised by such methods.³⁴ The finding that condoms have now become the dominant method of contraception is to be welcomed, of course, because of their dual protection against HIV transmission and pregnancy. In our view, this advantage is more important than the condom's higher rate of failure in preventing pregnancy than other modern methods. The same shift in choice of contraceptive method has been documented in young single women in Latin America.³⁵

Our data on the source of condom supplies suggest that the rise in their use might be partly due to greater familiarity with the method, and to social marketing campaigns that have improved the availability of condoms through commercial outlets. The growing popularity of condom use by single women could also indicate in part a low frequency of intercourse, as suggested by the finding that about half of sexually experienced women reported no coitus in the 3 months preceding the survey. When intercourse is infrequent, use of a method that provides continuous protection, such as oral contraception, might seem unnecessary-even excessive.

The relative importance of the two motives for condom use-pregnancy prevention and disease prevention-is very difficult to establish. The uptake of condoms did not seem to be related to the severity of national HIV epidemics: some of the sharpest increases in usage were recorded in west African countries where HIV prevalence is lower than in eastern or southern Africa. Our findings suggest that at least 60% of single women who used a condom at most recent coitus did so mainly, or partly, to avoid pregnancy. Though this proportion should be interpreted with great caution, it emphasises that programmes promoting family planning and HIV prevention have common interests. A young woman might find it easier to negotiate use of condoms with a partner for prevention of pregnancy than for protection against HIV transmission. Therefore, we suggest that condoms might be promoted more effectively if the emphasis was on pregnancy prevention rather than prevention of sexually transmitted

disease. In our view, moves to dissociate the aim of HIV prevention from that of contraception are regrettable—for example, the creation of the Global Fund to fight AIDS, Tuberculosis and Malaria and the prohibition on buying family planning commodities from PEPFAR funds.

Other behaviours, such as reported abstinence, have changed less than use of condoms. The median proportion of reported virgins changed little over the study period. Secondary abstinence did increase in some countries, which could indicate more cautious selection of sexual partners, or reduced coital frequency, or both. A change in selection of sexual partners could perhaps be attributed to HIV control programmes.

Most of the survey data reviewed here predate new HIV prevention programmes such as PEPFAR, that emphasise sexual abstinence, and thus any judgments about the effectiveness of such strategies would be premature. The very wide national variations in the prevalence of virginity in young women imply that societal attitudes towards premarital sex vary greatly between African countries and therefore that advocacy for abstinence might resonate in some ethnic and religious groups but prove counter-productive in others.

Our central conclusion is that the sense of failure pervading HIV prevention efforts in Africa is unjustified and that investments in condom promotion and marketing have had an appreciable effect, at least for young single women. We hope that this paper will contribute to a more balanced perspective on progress towards control of HIV infection in Africa, and will underline the need for greater attention to the issue of unwanted pregnancies.

Contributors

J Cleland and M M Ali jointly planned this paper. M M Ali was primarily responsible for the statistical analysis and J Cleland for drafting and interpretation.

Conflict of interest statement

We declare that we have no conflict of interest.

Acknowledgments

Helpful comments on earlier drafts of this paper were made by Marge Berer, Iqbal H Shah, James Shelton, and Paul Van Look.

[Reference]

References

- 1 Joint United Nations Program on HIV/AIDS and World Health Organization. AIDS Epidemic Update. Geneva: UNAIDS/WHO, 2005.
- 2 Jemmott JB, Jemmott LS. HIV risk reduction behavioral interventions with heterosexual adolescents. *AIDS* 2000; 14 (supp 2): 40-52.
- 3 Oakloy A, Fullerton D, Holland J. Behavioural interventions for HIV/AIDS prevention. *AIDS* 1995; 9: 479-86.
- 4 Stephenson JM, Imrie J, Sutton SR. Rigorous trials of sexual behaviour interventions in STD/HIV prevention: what can we learn from them? *AIDS* 2000; 14 (suppl 3): 115-24.
- 5 Dunkle K, Jewkes, R, Brown H, Gray G, McIntyre J, Harlow S. Gender-based violence, relationship power, and the risk of HIV infection in women attending antenatal clinics in South Africa. *Lancet* 2004; 363: 1415-20.
- 6 Jewkes R, Levin JB, Penn-Kekera LA. Gender inequalities, intimate partner violence and HIV prevention practices: findings of a South Africa cross-sectional study. *Soc Sci Med* 2003; 56: 125-34.
- 7 Kim JC, Watts CH. Gaining a foothold: tackling poverty, gender inequality, and HIV in Africa. *BMJ* 2005; 331: 761-72.
- 8 Parker RG, Easton D, Klein CH. Structural barriers and facilitators in HIV prevention: a review of international research. *AIDS* 2000; 14 (suppl 1): 22-32.
- 9 Global HIV Prevention Working Group. HIV prevention in the era of expanded treatment access. Seattle and Menlo Park: Kaiser Family Foundation, 2004
- 10 UNAIDS. Intensifying HIV prevention. Geneva: UNAIDS, 2005.
- 11 Bass E. The two sides of PEPFAR in Uganda. *Lancet* 2005; 365: 2077-78.
- 12 Blum RW. Uganda AIDS prevention: A, B, C, and politics. *J Adolesc Health* 2004; 34:428-32.
- 13 Das P. Is abstinence-only threatening Uganda's HIV success story? *Lancet Infect Dis* 2005; 5: 261-64.
- 14 Hearst N, Chen S. Condom promotion for AIDS prevention in the developing world: is it working? *Stud Fam Plann* 2004; 35: 39-47.
- 15 US AID. MEASURE Evaluation Project.
<http://www.cpc.unc.edu/measure/publications/index.php> (accessed Oct 17, 2005).
16. ORC Macro. MEASURE DHS+ STATcompiler. <http://www.measuredhs.com>. (accessed Oct 11, 2005).
- 17 Meekers D, Van Rossem R. Explaining inconsistencies between data on condom use and condom sales. *BMC Health Serv Res* 2005, 5: 5.

- 18 Cleland J, Boerma JT, Carael M, Weir SS. Monitoring sexual behaviour in general populations: a synthesis of lessons of the past decade. *Sex Transm Infect* 2004; 80 (suppl 2): 1-7.
- 19 Slaymaker E. A critique of international indicators of sexual risk behaviour. *Sex Transm Infect* 2004; 80 (suppl 2): 13-21.
- 20 Shelton JD, Halperin DT, Nantulya V, Potts M, Gayle HD, Holmes KK. Partner reduction is crucial for balanced "ABC" approach to HIV prevention. *BMJ* 2004; 328: 891-91.
- 21 Huygonet S, Mosha F, Todd J, et al. Incidence of HIV infection in stable sexual partnerships: a retrospective cohort study of 1802 couples in Mwanza Region, Tanzania. *J Acquir Immun Defic Syndr* 2002; 30: 73-80.
- 22 Quigley M, Munguti K, Grosskurth H, et al. Sexual behaviour patterns and other risk factors for HIV infection in rural Tanzania: a case-control study. *AIDS* 1997; 11: 237-48.
- 23 Genuis SJ, Genuis SK. Adolescent behaviour should be priority. *BMJ* 2004; 328: 894.
- 24 While R, Cleland J, Carael M. Links between premarital sexual behaviour and extramarital intercourse: a multi-site analysis. *AIDS* 2000; 14:2323-31.
- 25 Lagarde E, Auvert B, Chege J, et al. Condom use and its association with HIV/sexually transmitted diseases in four urban communities of sub-Saharan Africa. *AIDS* 2001; 15 (suppl 4): 71-78.
- 26 Myer L, Mathews C, Little F. Measuring consistent condom use: a comparison of cross-sectional and prospective measurements in South Africa. *Int J STD AIDS*. 2002; 13: 62-63.
- 27 United Nations Population Division. Levels and trends of contraceptive use as assessed in 1998. New York: UN, 1999.
- 28 Cleland J, Watkins SC. The key lesson of family planning programmes for HIV/AIDS control. *AIDS* 2006; 20: 1-3
- 29 Bledsoe CH, Pistin G, eds. Nuptiality in sub-Saharan Africa: Contemporary anthropological and demographic perspectives. Oxford: Clarendon Press, 1994.
- 30 Shah I, Ahman E. Age patterns of unsafe abortion in developing country regions. *Reprod Health Matters* 2004; 24: 9-17.
- 31 Ahman E, Shah I. Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2000. Geneva: WHO, 2004.
- 32 Mayhew SM, Adjei S. Sexual and reproductive health: challenges for priority-setting in Ghana's health reforms. *Health Policy Plan* 2004; 19 (suppl 1): 50-61.
- 33 Che Y, Cleland JG, Ali MM. Periodic abstinence in developing countries: an assessment of failure rates and consequences. *Contraception*

2004; 69: 15-21.

34 Castle S. Factors influencing young Malians' reluctance to use hormonal contraceptives. *Stud Fam Plann* 2003; 34: 186-99.

35 Ali MM, Cleland J. Sexual and reproductive behaviour among single women aged 15-24 in eight Latin American countries: a comparative analysis. *Soc Sci Med* 2005; 60: 1175-85.

[Author Affiliation]

Lancet 2006; 268: 1788-93

Centre for Population Studies,
London School of Hygiene and
Tropical Medicine, London, UK
(Prof J Cleland MA); Department
of Reproductive Health and
Research, WHO, Geneva,
Switzerland (M M Ali PhD)

Correspondence to:

Prof John Cleland,
Centre for Population Studies,
London School of Hygiene and
Tropical Medicine,
49-51 Bedford Square,
London WC1B 3DP, UK
John.Cleland@lshtm.ac.uk.

Nota de **Redacción Médica**: puede consultar las tres figuras de este artículo en las páginas siguientes.

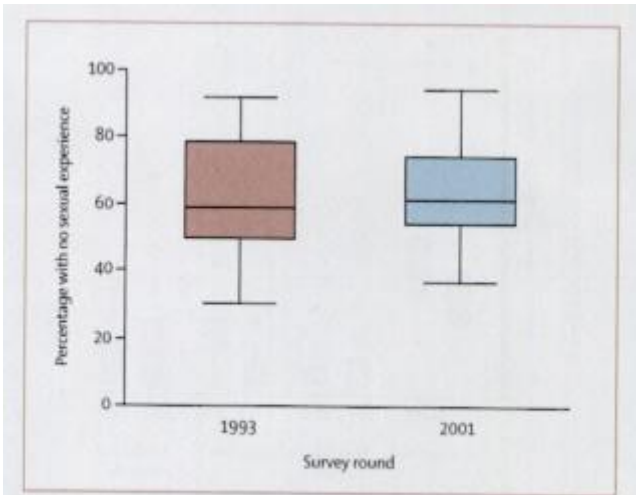


Figure 1: Box and whisker plot showing trend (1993-2001) in the percentage of single women aged 15-24 years who reported no sexual experience
Data standardised for 18 African countries.

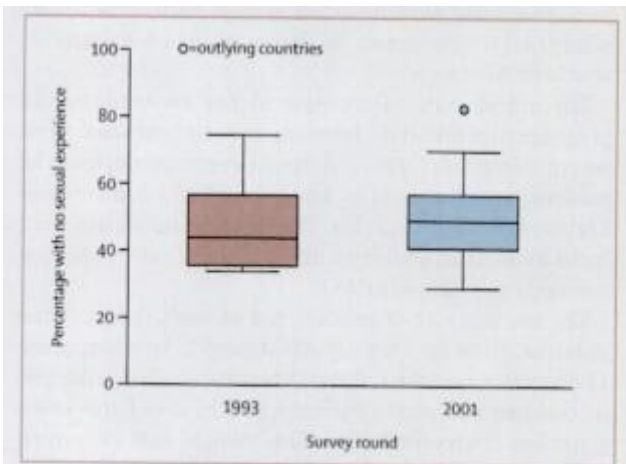


Figure 2: Box and whisker plot showing trend (1993-2001) in the percentage of sexually experienced single women aged 15-24 years who reported no sex in the 3 months before the survey
Data standardised for 18 African countries.

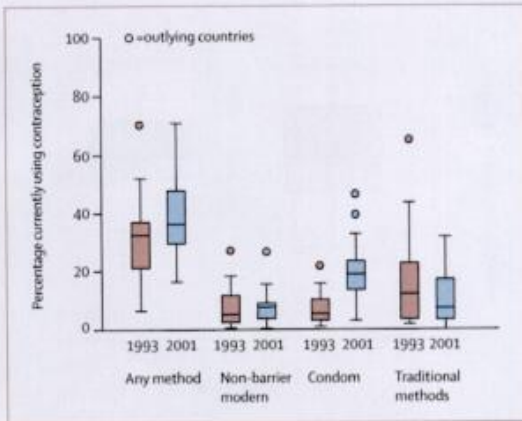


Figure 3: Box and whisker plot showing trend (1993-2001) in current contraceptive use by single women aged 15-24 who were sexually active in the last 3 months before the survey
Data standardised for 18 African countries.

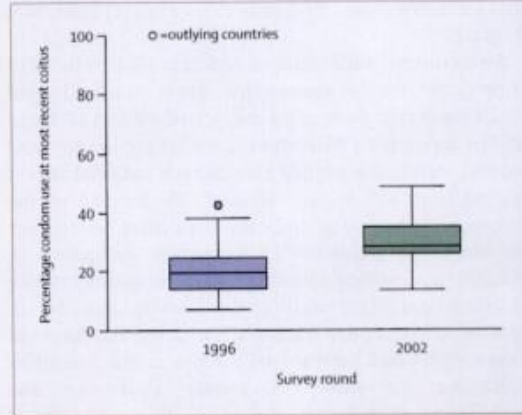


Figure 4: Box and whisker plot showing trend in percentage of single women aged 15-24 who reported condom use at most recent coitus and who were sexually active in the last 3 months
Data standardised for 13 African countries.