

podoconiosis outreach sites are located. The variance on these proportions was high, so the difference between proportions of patients accessing treatment in outreach *woredas* compared to non-outreach *woredas* did not reach statistical significance. Our data are insufficient to prove a causal relationship between the existence of podoconiosis outreach sites and proportion of patients able to access treatment, but suggest that a more detailed investigation into this would be fruitful. Government health facilities are located in every *woreda*, suggesting that even though such facilities are available, they may be little used by people with podoconiosis. The reasons for this need to be explored, but may include lack of expertise in managing podoconiosis, attitude of staff to people with podoconiosis or cost of treatment prescribed.

There was a similar pattern of a higher proportion of patients using footwear in *woredas* in which specific podoconiosis outreach sites are located. Footwear is a major form of both prevention and treatment advocated by the MFA and others^{16,19,20}. For most of the population, footwear is unaffordable, so podoconiosis patients are trained to make durable but low cost footwear (materials are subsidized by the MFA) for other patients, and to encourage their use by non-sufferers too.

Conclusion

As a condition with a prevalence of over 5% among the economically productive sector of the population, podoconiosis must be considered an important public health problem. Earlier estimates have considered approximately 18% (over 200 000 km² of 1 100 000 km²) of Ethiopia's surface to be of the irritant red clay soil responsible for podoconiosis¹. This soil is particularly fertile, and attracts dense populations to farm it, thus more than 18% of Ethiopia's population of 60 million (about 10.8 million people) are potentially exposed to basalt soil. Extrapolation of the mean zonal prevalence of 5.4% onto this exposed population suggests that over 580 000 people may be affected, of whom up to 64% (370 000) will be of the most economically productive age groups.

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Acceptability and technical problems of the female condom amongst commercial sex workers in a rural district of Malawi

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SUMMARY A study was conducted among commercial sex workers (CSWs) in rural southern Malawi, in order to

(a) assess the acceptability of the female condom and (b) identify common technical problems and discomforts associated with its use. There were 88 CSWs who were entered into the study with a total of 272 female condom utilizations. Eighty-six (98%) were satisfied with the female condom, 80% preferred it to the male condom and 92% were ready to use the device routinely. Of all the utilizations, the most common technical problem was re-use of the device with consecutive clients, 6% after having washed it, and 2% without any washing or rinsing. The most common discomforts that were reported included too much lubrication (32%), device being too large (16%), and noise during sex (11%).

This study would be useful in preparing the introduction of the female condom within known commercial sex establishments in Malawi.

Introduction

Commercial sex workers (CSWs) are known to be highly vulnerable to sexually transmitted infections (STIs) and to infection with the human immunodeficiency virus (HIV) – they are consequently at a high risk of transmitting these infections to their clients and other sexual partners¹.

Consistent and correct use of the male condom has been advocated as a critical measure in preventing the acquisition and transmission of STIs and HIV²⁻⁴. Its use in commercial sex establishments in Thailand has led to reductions of more than 80% in STI prevalence and an apparent decline in HIV incidence⁵.

In Malawi, as in some other countries in Africa, decisions involving the sexual sphere are traditionally male-dominated⁶ and the condoms which are available are male devices which do not allow women to make independent decisions nor assertive behaviour on safer sex. CSWs in Malawi often face economic pressure by male clients within a competitive sex industry where some men ironically still prefer to pay for sex without condoms. Because of such difficulties the female condom, might offer an important option to the male condom. The device is a strong, soft, transparent polyurethane sheath inserted into the vagina before having sexual intercourse⁷. Studies on the female condom from Kenya⁸, South Africa⁹ and Zimbabwe¹⁰ have also shown encouraging results in terms of clinical effectiveness, acceptability and dynamics of negotiation on safe sex.

Since 1999, as part of a comprehensive HIV prevention strategy, the health services of Thyolo district in rural southern Malawi have been offering regular condom promotion activities, coupled with STI mobile clinics to CSWs in three main semi-urban towns of the district. We decided to assess the female condom within this setting before considering its possible introduction within preventive programmes that target this high risk group. The study was conducted on a cohort of CSWs in order to (a) assess the acceptability of the female condom and (b) identify common technical problems and discomforts associated with its use within this core group.

Material and methods

Study setting

The study was conducted during the month of February 2002 in three semi-urban towns (Thyolo, Luchenza and Bvumbe) of Thyolo district, in rural southern Malawi.

These towns lie within large tea and coffee plantations that have thousands of migrant workers and are well known for their HIV and STI risk arenas of lively rest-houses, bars and readily available and inexpensive CSWs.

Prostitution is illegal in Malawi¹¹ and this legal restriction confines commercial sex activity to known locations (rest-houses and bars) where CSWs are resident and working under cover as bar girls, waiters and cleaners. They are not paid by these establishments but are provided with rooms and are permitted to live at the location as long as they serve drinks and are readily available for commercial sex with clients. For the purposes of this study this group of individuals were considered as CSWs.

The district health team conducts STI screening clinics once a week during daylight hours at a designated rest-house facility which is coupled with information, education and communication (IEC) sessions on condom use. Management of STIs is based on National STI guidelines adapted from the syndrome-based approach of the World Health Organization (WHO)¹². All workers at public locations offering food, drink or accommodation facilities (which includes bar girls, waiters and cleaners) are required by law to be registered at the community police station. They are also required to produce a valid medical clearance certificate that needs to be shown to the communal police on a monthly basis or on request. The STI clinic service is generally well attended and considered 'CSW friendly' as the team is authorized to issue such monthly medical clearance slips which avoids common harassment or unofficial fines on CSWs by local police inspectors. It also saves time and money for travel and queuing up at the district hospital. Peer outreach workers were also involved in mobilizing CSWs to attend these services.

Study population and data collection

Thirty consecutive CSWs presenting for routine examination at each of the three semi-urban towns were recruited for the study after obtaining informed consent. The 90 CSWs who had agreed to participate in the study were each offered five female condoms (Reality-female condoms, the Female Health Company and Foundation, London) and were followed up a week later.

Clear practical instructions on the handling and use of the device were given on a one-to-one basis to those who wished to participate. The use of the female condom was demonstrated on a soft female model of the pelvis which allowed practical demonstration of handling and vaginal insertion of the device. The participants were also allowed to experiment using the model and 'peer' sex workers were included in the demonstration process. (A 'peer' sex worker refers to a CSW who works with the health team and serves as a point of reference for other CSWs who might need further information or support.) Individuals were also told that the condoms were meant for single use only.

Interviewer-administered questionnaires, which had been pre-tested on a different group of 10 CSWs were used to gather basic socio-demographic data, as well as information related to the use of the female condom. The interviews were conducted in the local language by experienced interviewers. The team that conducted this study was the same team that had been running the CSW clinic for over 3 years. They were well known in the bars and commercial sex establishments and a good deal of confidence and frankness had been built between these

team members, the CSWs and peer sex workers. Confidentiality and privacy during the interview process was ensured.

Analysis was made using the Epi-Info software (Center for Disease Control, Atlanta, USA). The study received ethical approval from the National Health Sciences Research Council of Malawi.

Results

Characteristics of the study population

A total of 90 consecutive new CSWs were enrolled for the study. Of these, two were lost to follow-up. The mean age of the remaining 88 was 23 years and the mean educational level was 5 years in school. There were seven (8%) patients who were married but the majority (92%) were either unmarried, or divorced. Of all CSWs, 78% earned less than US\$10 per week.

At the time of interview all participants knew of the male condom and 80 (91%) had heard of the female condom. All CSWs knew about STIs and HIV and 98% of them felt they had a responsibility to try to prevent these infections by using condoms. At the time of enrolment 22 (25%) had an STI: nine cases had abnormal vaginal discharge with or without dysuria; six had pelvic inflammatory disease (PID); five had genital ulcer disease (GUD); and two had GUD combined with PID.

Acceptability of the female condom by CSWs and their clients

Fifty-three (60%) CSWs successfully proposed the use of the female condom and there were no complaints from the clients before or after its use. Thirty-seven women used the device at least once without informing their client. Of these, 33 (89%) clients were unaware of its presence; four were aware – three expressed satisfaction and one expressed no objection to its use.

Seventy (80%) CSWs preferred the female condom to the male condom. Of these 54 (77%) felt they would be certain to be protected as clients often try to remove or even tear male condoms during sex; 12 (17%) said that it was easy to use and four (6%) felt that it would not break like male condoms. Fifteen (17%) CSWs preferred the male condom and three (3%) were happy with either. Of those who preferred the male condom, 12 said it was easier to use than a female condom, and three said that men should rather have the choice on condom use. Eighty-six (98%) expressed satisfaction with the female condom and 92% of these were ready to use the device routinely provided it was available free of charge or at a subsidized cost through the same social marketing that was available for male condoms. Seven women said they would not use the device even if it was free – four because the device was too large and three because of impaired sensation.

Technical problems and discomforts associated with the female condom

An average of three female condoms were used per participant with a total of 272 utilizations. There was an incidence rate of 9.1% for serious technical problems (Table 1) and 86% for discomforts (Table 2). The most common technical problem included the device being re-used with consecutive clients. There were 14 CSWs who had re-used the device. Of these 11 had washed the device

Table 1 Serious technical problems associated with the use of the female condom

	Number of women n=88 (%)	Number of utilizations n=272 (%)
Device washed and re-used	11 (12.5)	17 (6.3)
Device used twice (with two consecutive clients)*	3 (3.4)	6 (2.2)
Outer ring pushed into vagina	2 (2.3)	2 (0.7)
Breakage	–	–
Penis penetration between vaginal wall and outer ring	–	–
Total	16 (18)	25 (9.1)

*Female condom kept in place, without washing or rinsing it

Table 2 Other technical problems and discomforts associated with the use of the female condom

	Number of women n=88 (%)	Number of utilizations n=272 (%)
Difficulty with insertion of the internal ring	14 (15.9)	28 (10.3)
Noise during sex	13 (14.8)	30 (11)
Device too big/too large	18 (20.5)	43 (15.8)
Lower abdominal pain during use	6 (6.8)	8 (2.9)
Outer ring discomfort	5 (5.7)	8 (2.9)
Vulva itching	7 (8)	11 (4)
Shifting of the device	8 (9.1)	12 (4.4)
Difficult withdrawal (device stuck to penis)	2 (2.3)	5 (1.8)
Too lubricated (poor sensation)	32 (36.4)	88 (32.4)
Not enough lubrication	2 (2.3)	2 (0.7)
Total	93*	234 (86)

*This total exceeds the number of users (88) because some women suffered from more than one discomfort

and re-used it, reporting that they had exhausted their supply of condoms; three re-used it without either washing or rinsing as they felt they should only be concerned with protecting themselves and not their clients. The most common discomforts included too much lubrication in the condom (32%), device too large (16%), noise during sex (11%) and difficulty in insertion of the internal ring (10%).

Discussion

The study shows a high acceptability of the female condom amongst CSWs in a rural district of Malawi, where the great majority expressed satisfaction with the device and were ready to use it routinely. The most common technical problem associated with its use included the device being re-used with consecutive clients with or without washing or rinsing, while the most common discomforts included too much lubrication and the device being too large.

This study reveals a number of encouraging findings:

- Sixty per cent of CSWs in our study were able to successfully propose the female condom to their clients and there were no complaints (by clients) before or after its use
- Of the 42% of women who did use the device at least once without consent of the client, the great majority

were not aware of its presence. This might be explained by the fact that most men in our setting were often drunk before engaging in sexual activity – this has also been reported elsewhere¹³

- Of the few that did clearly realize the presence of the device, there were no objections or violent reactions.

The female condom therefore facilitates the decision for safe sex and did not compromise the income generation capacity of the CSW within a competitive setting where the majority of them earn less than US\$10 per week. This finding is in contrast to studies in Thailand and Côte d'Ivoire where availability of the female condom did not appear to alter the power relationship of the men over CSWs^{13,14}. Considering the high STI prevalence (25%) among CSWs in our setting, this might be of particular relevance when considering strategies for reducing overall community STI prevalence^{3,4,15}.

We assessed the incidence of technical problems and discomforts following an average use of three female condoms per CSW. This is a relatively small number and it is likely that the reported incidence might reduce if CSWs in our setting had had the opportunity of using more female condoms, thereby gaining more experience of the handling and use of the device. Experience from other countries^{16,17} have shown that many women find that after practising three times, insertion becomes easier.

Despite the fact that female condoms are meant for single use and were provided as such, 11 (12.5%) CSWs who had ran out of new female condoms, decided to wash and reuse the device. Ensuring that adequate and consistent supplies of female condoms are available and accessible for CSWs would be essential to discourage such circumstantial re-use of the device.

In poor resource settings, although the use of a 'new' male or female condom remains a key prevention strategy, it is likely that situations will arise where CSWs are unable to use a new condom. The alternative to re-use for some may be unprotected intercourse. Given the available data and remaining gaps in knowledge, the WHO recommends use of a new male or female condom for every act of intercourse where there is a risk of unplanned pregnancy and/or STI/HIV infection. However, for women who cannot, or do not, have access to new condoms, the WHO has developed a draft protocol¹⁸ for the safe handling and preparation of used female condoms intended for reuse. The feasibility, utility, risks and benefits of introducing such a protocol in Malawi must ultimately be made after being studied in different population groups within the local context.

That three CSWs used the female condom twice with consecutive clients without washing or rinsing is of serious concern and is a practice that has also been reported among CSWs in Thailand¹³. Although the device might still protect the CSW, it does constitute a serious danger to the male client. Targeted IEC to CSWs and clients on the potential danger of this practice might help discourage it. Clients in particular need to be educated and made aware of their responsibility in ensuring safe sex.

The question of excessive lubrication, was described as a discomfort in 32% of all utilizations. This is unusual and although we do not have firm data to substantiate this, it is likely to be linked to local dry sex practices and the fact that men in our setting like to come quicker. A quarter of all CSWs in our study had an STI at presentation. The lower abdominal pain and vulval itching described by participants is likely to be linked to this high prevalence. Two women reported the sticking of

the device to the customer's penis. This could be due to too much handling of the device which would tend to wipe off pre-existing lubrication and/or inadequate overall vaginal insertion of the device.

CSWs in our setting have enthusiastically endorsed the female condom with the great majority expressing overall satisfaction and the desire to use the device routinely. Further research is, however, required to assess its acceptability in other population groups. Considering the high overall acceptability of the female condom as well as the high HIV prevalence in Malawi, the device provides an important opportunity to increase safer sex in high risk commercial sex establishments in Malawi. A consistent supply which matches demand either through free donations and/or social marketing is necessary to ensure continued access and to limit the re-use of the device. Donor subsidies (from the UK Department for International Development, United Nations Fund for Population Activities amongst others) have been secured in Zimbabwe, South Africa, Zambia and Namibia, after user demand and acceptability was demonstrated both to social marketing and free supply to clinics.

There is now a need to make the female condom readily available and accessible in order to enable women to make the decision to practise safer sex. This study also illustrates the necessity to dramatically increase protected acts nationally and would be useful in preparing the introduction of the female condom within known commercial sex establishments in Malawi.

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