

Original Research Article

## **New HIV Prevention Technologies: Knowledge and Perceived Usage by Women with High Risk Behaviour - A Qualitative Study in Tamil Nadu**

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### **ABSTRACT**

New HIV prevention technologies include vaccines, microbicides, female condoms and others that may also provide protection from unplanned pregnancy and sexually transmitted infections (STIs). A qualitative study was conducted among 20 Female sex workers and 14 HIV infected or affected women, who were selected purposively from December 2012 to June 2014. The data were collected through in-depth interviews in case of 26 female sex workers (FSWs) as well as HIV infected and affected women and, additional 8 FSWs who participated in a focus group discussion. High-risk women were aware of all the risks involved in not using any prevention methods; some of them were able to mention about what they understood about a particular method, its usage, harm in not using, its availability and Government's role in promotion. Women provided information on their understanding, availability and usage of male and female condoms, microbicides and HIV vaccine, their belief on male circumcision and views on PrEP. Their requirements for new prevention technology (NPT) and multiple prevention technology (MPT) were also elicited. On the whole many women with high risk behavior preferred having MPT that would prevent pregnancy, STIs and HIV, which would be of good quality, easily available and accessible.

**Key words:** New HIV prevention technology, women with high risk behaviour for HIV.

### **INTRODUCTION**

HIV prevention technologies like male and female condoms are available as prevention choices since several years. Consistent and correct use of male condoms has been reported to be 87% effective for prevention of HIV but may be as low as 60% or as high as 95%.<sup>[1]</sup> However, condom effectiveness rates could be lesser in real-life settings than those reported in these studies wherein research participants are more carefully educated on condom usage. Male condoms have been reported to be either unaccessed or under-utilized.<sup>[2]</sup> For many women, the current prevention methods

are inadequate since women often do not have the social or economic power to refuse sex or negotiate condom use.<sup>[3]</sup> The female condom is the only currently available female-initiated HIV prevention method which is safe and effective in reducing the risk of pregnancy and transmission of sexually transmitted infections (STIs). It offers protection among women than the male condom, because the outer ring partially covers the external genitalia.<sup>[4]</sup> Studies in different countries show that, on an average, 50 -70 percent of male and female participants found the female condom to be acceptable.<sup>[5]</sup> Cervical barriers, pre-exposure

prophylaxis, HIV preventive vaccine and microbicide could also empower and enable women with better HIV prevention options that they could initiate themselves, without necessary knowledge, consent or involvement of their partners.

Role of Male circumcision as a HIV prevention method for men has also been documented. In 2005, the first randomized efficacy trial of male circumcision for HIV prevention, conducted in South Africa, showed that circumcised men were 60 percent less likely than uncircumcised men to become infected with HIV from female partners. [6] However, male circumcision as HIV prevention technology still remains unexplored due to associated socio-religious sensitivity attached to its acceptability in many countries till date. [7]

Thus although male and female condoms and adult male circumcision are cost effective methods for HIV prevention, their acceptability as prevention methods and correct and consistent use has always been a challenge. Worldwide, Antiretroviral pre-exposure prophylaxis (PrEP) for HIV infection had shown promising results. [8] This PrEP for HIV infection can be delivered orally or topically as a gel, film, suppository, or sustained-release intra-vaginal ring. [8] New prevention technologies include vaccines and microbicides which might render protection against unplanned pregnancy, STIs, HIV and/or other common RTIs. Since it is important to understand the extent of knowledge about the new prevention technologies, a study was planned, among women with high risk behavior, to find out their knowledge, beliefs, attitude, perceived usage and concerns towards existing and new HIV prevention methods.

## **MATERIALS AND METHODS**

**Study setting and study participants:** In this qualitative study, the study

participants were identified using purposive sampling. The participants were women with high risk behavior, including of female sex workers (FSWs) as well as HIV infected and affected women. The study sites were governmental, non-governmental and community based organizations.

**Data collection and the tools:** Data was collected from December 2012 to June 2014, through in-depth interviews (IDIs) and Focus Group discussion (FGD) using interview and FGD guides. The study participants in the IDI included 6 each, of brothel and street based female sex workers (FSWs) and 7 each, of HIV infected and affected women. The NGOs including ARM (Association for Rural Mass) and ICWO (Indian Community Welfare Organization) were able to refer the FSWs for the study recruitment through their out-reach-workers (ORWs). ART counselors of Institute of Obstetrics and gynecology, co-ordinators of Positive Women Network (PWN) and ORWs and co-ordinators of CHES (Community Health Education Society) helped in arranging the interview with 7 HIV infected and affected women, each. Two trained Research Assistants conducted the interviews using the guides. The in-depth interviews were conducted in a separate room assuring privacy and confidentiality where the respondents were able to talk freely, comfortably and without any disturbance to respond to the questions/clarifications. The FGD session was conducted with 8 FSWs at ICWO, Chennai. Details on the knowledge, understanding and experiences in using the prevention technologies and concerns of NPTs were obtained from the participants. Before proceeding with the interview or FGD, the participants were informed about the procedure of IDI/ FGD and their willingness to participate in this study was obtained. After taking the written informed consent, including audio-taping, data was collected. Each interview took about 45 to

60 minutes and the FGD took about 90 minutes. The interviewer discussed various new prevention technology and multiple prevention technology to the respondents who reported that they were unaware of the same.

**Data analysis:** Since the study was qualitative in nature, the identified domains were grouped and analysed thematically.

**Ethics:** This proposal was reviewed and approved by the Institutional Ethics Committee (IEC) of NIE.

## RESULT

**Findings:** The results of IDIs by 12 FSWs and 14 HIV infected/affected women, and FGD of 8 FSWs are presented here. The views of the respondents of various prevention technologies are given below:

**Condoms (Male and female condoms):** All the FSWs, HIV infected and affected women had knowledge on condom usage and its role in prevention of child birth and HIV/AIDS. More than half of the FSWs mentioned that they were aware of male condoms and another half of the FSWs were aware of female condoms and few mentioned that female condoms were better than male condoms and safer for the partner, husband and customers. Many FSWs mentioned that these condoms were available in medical shops, NGOs and some hospitals; and also they were costlier and not available everywhere. However all the HIV affected women informed that male condom is available everywhere; the entire street based FSWs mentioned that Government condoms were of low quality. Most of the brothel based FSWs informed that condoms bought privately were of good quality. All brothel based FSWs commented that whoever is involved in sex work, must use condom. Half of FSWs informed that they liked to use condom for its colour, fragrance and good quality. Most of them informed that they were not interested to use Government condom because of the smell and chances of easily

getting torn. Half of the FSWs informed that after drinking their clients forced the FSWs to drink and have sex without using condom or refused to use condom themselves. Some FSWs informed that their clients refused condom usage as they were not satisfied with the sex.

**Some of their views are given here:**

*“Now-a-days, people know about HIV... STIs.... and condoms’ role in prevention of these diseases and pregnancy..... so.....nobody says “no” for condom use .....” (FSWs).*

*“... female condoms are better than male condoms and safer for the partner, husband and customers..”(FSWs)*

*“... Condoms are easily available in the medical shop, NGOs and various hospitals” “.... (FSWs)*

*“It (condom) is easily available everywhere.....” (HIV affected women)*

*“I would like to use condom with good colours, with nice fragrance and of good quality.....”(FSWs)*

*“... if the client has taken drinks, they force us also to drink..... want to have sex without condom” (FSWs).*

*“.....If men are drunk, they refuse to use condom....” (HIV affected women)*

*“if I force them to use condom they refuse to use as they are not satisfied ...they want natural pleasure” (FSWs)*

**Microbicides:** All street based FSWs informed that microbicide was a HIV prevention product and 4 of the 7 HIV affected women informed that using microbicide is to prevent infection; half the FSWs informed that the product should have consistency of a gel and should be good and easy to use; another half of the FSWs mentioned that men would use it during anal sex and oral sex with MSM (Men having sex with Men); some mentioned that microbicide could be used as a medicinal product and few others felt that they are hygienic products. As far as its duration of protection was concerned, most of them said it would last for half an hour and few mentioned that its side effect

would be a barrier; half the street based FSWs mentioned that Government should promote microbicides through NGOs and TV advertisements.

**Some of their views are given here:**

*“....it is to prevent the infection.....”(HIV affected women)*

*“Definitely everyone will use ...if...microbicide comes in gel type it can be easy to apply.....” “Men will use it for anal sex with MSM...” “It will be very much useful for anal and oral sex with them....” “if this product is medicinal type, it will be good and easy to use without anyone knowing .....*”.

*“The government should get a lead in the promotion of microbicide and it can even be advertised in TV...” (FSWs)*

**HIV Vaccine:** Four of the seven HIV affected women and all the street based FSWs mentioned that for people who are weaker, vaccine should not be given. Four of the seven HIV infected women said that vaccine could be made compulsory by (Government) law as it would definitely protect the children at least. All the brothel based FSWs informed that vaccine can be used by everyone for the prevention of this disease; half of the street based FSWs mentioned that HIV vaccine is a preventive injection for HIV/STI and it is available in hospitals; half of the brothel based FSWs mentioned concerns about its side effects and cost and identified these as the barrier of using vaccine. More FSWs informed that government should promote vaccine through the hospital staff.

**Some of their views are given here:**

*“Vaccine could be made compulsory by government/ law, so that it would definitely be used for children at least.....(HIV infected women)*

*“we can use the vaccine for the prevention of this disease...” “.....it is an injection which prevents HIV and sexually transmitted infections”..... “before we use this vaccine, we must know its side effects” “...and also its cost” “..*

*Government must promote vaccine through their staff.....” (FSWs).*

**PrEP:** All the FSWs mentioned that PrEP is a tablet and more than half, informed that it is to prevent HIV and other diseases. Four of the seven HIV infected women said that people would be using PrEP tablet as the best way for the prevention of HIV. Many brothel based FSWs informed that those who are sex workers (female sex worker and transgender) must use PrEP. They also informed that even if PrEP is available free of cost, all people have to go hospital to get it without fail. Many street based FSWs informed that it is very difficult to take (PrEP) tablet regularly due to forgetfulness. They also informed that it would increase body heat and could cause white discharge. It was felt that Government can gather female sex workers and arrange for meetings and explain about PrEP. More than half of the FSWs informed that before taking PrEP, they have to understand its frequency of intake, side effects and cost. More than half of FSWs informed that PrEP was available in CBOs, NGOs and hospitals and, half of the brothel based FSWs mentioned that government should promote PrEP through government hospitals and through TV advertisements.

**Some of their views are given here:**

*“Those who are sex workers (female sex worker and transgender) must use PrEP compulsorily.....” “Even if PrEP tablet is available at free of cost, then, all people have to go to hospital to get it without fail.....” “Very difficult to take (PrEP) tablet regularly due to forgetfulness...” “and also this tablet will increase body heat, which can cause white discharge.....” “Government can gather female sex workers and arrange meetings separately for them and tell about PrEP.....” (FSWs).*

*“...PrEP is the best method and people will really use it...” (HIV infected women)*

**Male circumcision:** More than half of the brothel based FSWs, all the HIV affected

women and four of the seven infected women mentioned that male circumcision is practiced by Muslims; half of the street based FSWs said that they expect that most of the males would come forward to accept this. Four of the 7 HIV infected women said that generally men would be sexually active between the ages 14 and 35 years; so, circumcision should be done in their younger age itself. Half of the brothel based FSWs commented that government

should give proper awareness to public on male circumcision.

**Some of their views are given here:**

*“(Male circumcision) Foreskin removal is being done by mainly Muslims....”*

*(FSWs, HIV concordant and discordant women)*

*“.....generally a man is sexually active between 14 and 35 years....so circumcision has to be done for all men at younger age itself..... (HIV infected women)*

**Table 1: Thematic presentation of different HIV prevent Technologies**

S.No.	HIV prevention technology	Responses
1.	Male condom	<ul style="list-style-type: none"> <li>* Aware of its usage for the prevention of pregnancy, STIs and HIV/AIDS</li> <li>* Available in medical shops, NGOs and hospitals; everywhere</li> <li>* Government condoms were of low quality</li> <li>* Private condoms were of good quality</li> <li>* Whoever is involved in sex work, must use condom.</li> <li>* Use condom for its colour, fragrance and good quality.</li> <li>* Not using Govt.condom – due to its smell and chances of easily getting torn.</li> <li>* After drinking clients forcing FSWs to drink and have sex without condom</li> <li>* Refused to use condom after taking alcohol; due to dissatisfaction with sex</li> </ul>
2.	Female condom	<ul style="list-style-type: none"> <li>* Role in prevention</li> <li>* Female condoms are better preventive than male condoms</li> <li>* Safer for the partner, husband and customers</li> <li>* It is costlier, not available in all the places,</li> <li>* It is uncomfortable and uneasy; we have to hold the rings during sex</li> <li>* It may create rashes and wound</li> </ul>
3	Microbicide	<ul style="list-style-type: none"> <li>* Prevents HIV infection</li> <li>* Should be of gel type, good and easy to use</li> <li>* Used during anal sex and oral sex with MSM</li> <li>* It should be used as a medicinal product or a hygienic product</li> <li>* One hour – durability</li> <li>* Its side effects would be a barrier</li> <li>* Govt. should promote through NGOs and TV advertisement</li> </ul>
4.	Male circumcision	<ul style="list-style-type: none"> <li>* Would be done by Muslims</li> <li>* Most of the men might come forward for this</li> <li>* Generally men aged 14 to 35 years would be sexually active; so, it should be done during that age</li> <li>* Govt. should give proper awareness</li> </ul>
5.	HIV Vaccine	<ul style="list-style-type: none"> <li>* People who were weaker should not be given vaccine</li> <li>* To be made compulsory as it would definitely protect the children at least.</li> <li>* Everyone can use this for the prevention of this disease</li> <li>* It is a preventive injection for HIV/STI and it is available in hospitals</li> <li>* It has side effects and costlier, as the barriers</li> <li>* Government should promote it through the hospital staff</li> </ul>
6	PrEP	<ul style="list-style-type: none"> <li>* It is a tablet and it prevents HIV and other diseases.</li> <li>* Sex workers (FSWs and transgender) must use PrEP compulsorily.</li> <li>* Should go to hospital without fail, even if it is available at free of cost</li> <li>* It is very difficult to take (PrEP) tablet regularly due to forgetfulness.</li> <li>* It would increase body heat and could cause white discharge;</li> <li>* Government could arrange meetings for FSWs and explain about PrEP</li> <li>* Understand its frequency of intake, side effects and cost, before the intake</li> <li>* It would be available in CBOs, NGOs and hospitals</li> <li>* Govt. to promote through Govt. hospitals and through TV advertisements.</li> </ul>
7.	NPT	<ul style="list-style-type: none"> <li>* It prevents HIV and there is a need for that</li> <li>* Not heard anything about NPT</li> <li>* It could be a medicinal or hygienic product</li> <li>* It is necessary as men refuse to use condom during sex</li> </ul>
8.	MPT	<ul style="list-style-type: none"> <li>* It prevents child birth, HIV and STI</li> <li>* Govt. should promote MPT through education &amp; advertisement through TV, Doctors.</li> </ul>

**NPT (New Prevention Technology):**  
Only one Street based FSW mentioned

that NPT prevents HIV. All brothel based FSWs submitted that they had not heard

anything about NPT and also answered “yes” for the need for HIV prevention. Most of the FSWs preferred that new prevention method should be a medicinal product. The HIV infected and affected women informed that, NPT is a necessity as men refuse to use condom during sex; they preferred it to be medicinal type.

***Some of their views are given here:***

*“The new prevention product is very much necessary because gents refuse to use condom during sex.....” “If this product comes in medicinal type, then it will be good and easy to use without others knowledge....” (HIV infected and affected women).*

**MPT (Multiple Prevention Technology):**

Three fourth of FSWs and almost all the infected and affected women informed that MPT prevents from three things which are, child birth, HIV and STI. Most of the brothel based FSWs informed that they would expect that before and after family planning operation, MPT will be used to prevent HIV/STI and conception. All brothel based FSWs mentioned that Government should promote MPT through advertisement given through TV, News paper, street theater, NGOs and hospitals. They felt that it could easily reach the public through the doctors and Government. Half of the street based FSWs mentioned that Government should promote MPT awareness through NGO. HIV infected women opined that this method could be reached to the public easily through the doctors; and the Govt. should make efforts to create awareness through T.V.

***Some of their views are given here:***

*“sex workers definitely use it....” ....“If MPT is a prevention method, it is useful for the prevention of all the three HIV/STI and pregnancy...” “I will use it for HIV prevention.....and also for..... pregnancy...” (FSWs).*

*“..It could be easily reached to the people through the doctors; and also the Government has to take efforts to create*

*awareness among people through television...” (HIV infected women)*

**Summary of Focus Group Discussion:**

All the FSWs of FGD (n=8) reported that many of them earlier were unaware of methods to remain safe and ultimately they acquired HIV. But now people are aware of having sex using condom to avoid both pregnancy and STIs/HIV, through awareness programmes of NGOs and CBOs. All of them were aware of male and female condoms. Some of them said that their clients after drinking had sex with FSWs without using condom and do not use any preventive tablets. So, when they have sex with their wives, without using condom, chances of getting HIV infection are very high. Few of them that most of the FSWs who are infected with HIV are in the profession and there is a chance of spreading HIV. For all these reasons, they supported development of new HIV prevention methods.

Some participants mentioned that they did not use condom with their husbands or with their permanent regular partners, whereas they used it with all their clients. But, if the FSWs are with rough and aggressive clients, they have to relent to sex without condom. It was also mentioned that the client would call them to have sex near the bushes or isolated areas. When the FSW would go there, there would be 6 or 7 persons, with whom she would have to have sex without condom. A common view that was expressed was that the clients are not satisfied using condom as they feel the natural pleasure is lost. Many of them mentioned that the availability and accessibility of condoms can be improved by making them available in medical shops, petrol bunks, hospitals, toilets, railway stations, condom outlet box and even in police stations.

Since female condoms need more time to insert and fix; they are costlier and government does not provide them free of cost, FSWs preferred male condoms. Two

of them mentioned that they have not even seen a female condom. As far as anti-retroviral therapy is concerned some of them mentioned that the tablets may give side effects (like ulcer, tumor, cancer, allergic reactions), pregnant ladies cannot use the drugs, may forget to take tablets regularly (not once in 6 months or yearly once) and blood and urine checks have to be done before taking the drugs. If it was possible to take care of all the above things FSWs could accept these tablets. Since many of the FSWs did not know about microbicides, it was explained to them. Then in the discussion many FSWs felt that it was needed by them and they felt that microbicides could function as a lubricant also. With respect to HIV vaccine, some of them preferred it to be in injection form; and felt that FSWs should use it as they are in the profession and few of them wanted it to be in the hospital setting as it is the safe place for vaccine. Many FSWs felt that vaccine should be available free of cost to them. As regards to male circumcision, many mentioned that it is linked with specific religions. Hence they were not sure how men other than Muslim men will accept it. They felt that as it prevents HIV it is a good and safe option and could avoid getting any infection. They mentioned that some people had some misconception about male circumcision that during the procedure a nerve may get cut off.

For NPT, FSWs mentioned that newer methods are very much needed to protect them from various infections.

On the whole, for new prevention technology (NPT) with the focus of multiple prevention (prevention of pregnancy, STIs and HIV) each one preferred different method like male condom, microbicide, HIV vaccine, PreEP and male circumcision and few did not want to use female condom as NPT. These women preferred to have a new MPT method that could render protection against pregnancy, STIs and HIV. They

felt that MPT option should be of good quality; and should be easily available and accessible.

***Some of the FSWs' views are given here:***

*“Earlier many people got the HIV infection due to lack of awareness; but now people receive some awareness through NGOs and CBOs; they know condom prevents pregnancy, STIs and HIV”*

*“It is compulsorily needed in order to prevent these infections.....it will be good if it comes in the form of a tablet or an injection...”*

*“The vaccine should be available to FSWs at free of cost...”*

*“Some people may have some misconception in doing male circumcision (MC) that if they do MC, then the nerve may be cut...” (FSWs)*

## **DISCUSSION**

An earlier study <sup>[9]</sup> has reported that several factors, such as moral values, ethnic and religious factors, gender inequality, lack of a dialogue among partners with regard to condom use, aversion to the condom, consumption of alcohol or use of drugs prior to sexual intercourse were associated with non-use of a condom during sexual intercourse. We also observed in the current study that drinking of the clients, dissatisfaction in using condom and inferior quality of government condoms were the perceived problems of the high risk women. Factors such as lack of good smell and fragility leading to non-usage of Government distributed male condoms.

Female condom programmes have worked by emphasizing the use of female condoms for contraception and by promoting their use in loving relationships.

<sup>[10]</sup> In the present study some of the women were aware of its prevention role and some mentioned that female condoms are better than the male condoms. However, some did not prefer female condom as it is costlier, uncomfortable and

it may lead to development of rashes or some similar complaints.

A study [11] showed that, if carefully tailored, microbicide communication material may facilitate product use by women who do not currently use any HIV prevention method. Conversely, messages tailoring for women with high-risk perception will help ensure that microbicides are used for additional protection together with condoms. In the present study, some of the study participants have mentioned that microbicides should be a gel like and could be used during anal sex and oral sex by MSM. They should be medicinal or hygienic type of products.

PrEP's HIV preventive role and usage by female sex workers and transgenders have been mentioned by some of the women participants of the current study. Antiretroviral pre-exposure prophylaxis (PrEP) reduces the incidence of acquisition of human immunodeficiency virus type 1 (HIV-1) in men who have sex with men and is a promising approach for preventing HIV-1 in heterosexual populations, by another study. [12] The challenges in implementing PrEP include low awareness and utilization of PrEP by at-risk individuals, uncertainty about adherence in 'real-world' settings, the majority of healthcare providers being untrained in PrEP provision, limited data about potential adverse effects from long-term use of tenofovir-emtricitabine, high costs of PrEP medications, and stigma associated with PrEP use and the behaviors that would warrant PrEP. [13] In the present study, some participants felt that it is very difficult to take the tablets significance regularly due to forgetfulness and the perceived concern that PrEP will increase body heat and could cause white discharge.

We have entered a new era in HIV prevention whereby options have expanded following advances in biomedical discovery. The real challenges

are at the level of implementation, effectiveness, and the effect of combinations of various prevention options at the population level. However, gaps in the knowledge and implementation challenges persist. [14]

## CONCLUSION

Many of the women were aware of the existing HIV prevention technologies and few have not even heard of some of the new prevention technologies. They had varied perceptions on the different prevention technologies. However, the study findings emphasized the need for new MPT (Multiple prevention technology), which could protect many women involved in high risk behavior like FSWs, HIV infected and affected women, against pregnancy, STIs and HIV; the MPT should be of good quality; and should be easily available, affordable and accessible.

**Limitation:** Since we are finding out details in-depth on HIV prevention method, the data can be used as descriptive and not as representative. The results of this study cannot be generalized to others of the same category.

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