

A Qualitative Assessment of the Perceptions towards Mandatory Pre-Marital HIV Testing Among Unmarried Youths in Dakar

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Research Article

Abstract: Mandatory premarital HIV testing is gaining more ground especially among youths in Dakar but the perceptions of the young persons affected by this request have not been adequately explored. This study used a qualitative approach to assess the perceptions of unmarried youths regarding mandatory pre-marital HIV testing. Six focus group discussions were conducted among male and female youths in Dakar areas. Many of the participants were aware of mandatory pre-marital HIV testing and majority had a positive perception of the practice. Though participants were of the view that a positive HIV status at that stage would signify the end of the relationship, most of the female participants were against the cancelation of intending marriages by religious organizations because of sero-discordance. Even though majority wanted the results to be given to the couple, most would like the religious leader to disclose the result. The need for post-test counselling was stressed by many of the participants.

Keywords: premarital HIV testing, perceptions, unmarried youth, organizations, stigma.

Introduction

The scourge of HIV/AIDS has continued to ravage many countries all over the world resulting in a reduction of life expectancy and quality of life. Though it is a disease without borders, the effect has been felt more in sub-Saharan Africa (UNAIDS 2010). According to estimates, by the end of 2010, adult HIV prevalence in Senegal was approximately 2 percent, Senegal has one of the Africa's lowest HIV/AIDS infection rates but vulnerable groups such as sex workers have higher HIV prevalence. Currently (UNAIDS/WHO, 2010), HIV infection among legal sex workers in Dakar has risen to 21%, compared to 1% 20 years ago. The rate is as high as 30% in the southern city of Ziguinchor (Senegal, 2004). The epidemic in Dakar is fuelled mainly by heterosexual sexual relationships as approximately 80-95 percent of HIV infections in Senegal are as a result of heterosexual sex (UNGASS, 2010). While most of these sexual transactions may be outside wedlock, it is possible that a substantial portion also takes place within wedlock. In Dakar, the marriage institution is held in high regard and has a great potential of driving the HIV/AIDS epidemic. This has made some religious organizations

to make premarital HIV testing a criterion which prospective couples must meet before they are joined in holy wedlock. Mandatory premarital testing refers to policies that make HIV testing a necessary condition for civil and/or religious marriage (Rennie and Mupenda, 2007). Burns (2010) reported that growing number of couples living in low- and middle-income countries who wish to marry are required to take a test for HIV. This is a contravention of Article 16 of the Universal Declaration of Human Rights to which Nigeria is a signatory. This poses a threat to the genuine intention behind HIV screening and would subject the prospective couple especially the HIV positive partner to social and emotional crisis. While human rights organizations, religious bodies, government of countries, non-governmental organizations and others have been making their views regarding mandatory pre-marital HIV testing known, little is known as regards the perception of unmarried youths who are key stakeholders. This study was therefore conceptualized to fill this gap by finding out the perceptions of unmarried youths (15-24 years) in Dakar towards mandatory pre-marital HIV testing.

Methods

The study was a descriptive qualitative study in which focus group discussions were utilized to find out the perceptions relating to mandatory pre-marital HIV testing among unmarried youths in Dakar area. The qualitative approach was used to allow for free and participatory expression which would help to get vital information about the issue from the participants. This study was conducted in Dakar at the social Institute of health and Hygiene offering VCT, PMTCT, ART and treatment of opportunistic infection services. HIV testing services are offered. Focus group discussion was utilized for this study using a guide that was developed and translated into Wolof language which is the major language of communication in the study sites. It was then back-translated into French Language to ensure correctness of translation. Research assistants were

trained on data gathering using the focus group guide after which the instrument was pre-tested among male and female unmarried youths in three communities in another city having similar characteristics as Dakar. The scope of the focus group discussion guide included: concerns of youths about HIV/AIDS, awareness of mandatory pre-marital HIV testing and knowledge of religious bodies that request it from intending couples, perceptions towards mandatory premarital HIV testing, views regarding who should be given and who should disclose the results as well as perceptions regarding cancellation of intending wedding by religious bodies. Six Focus Group Discussions (three each for male and female groups) were held in the selected communities. Purposive sampling method was used in the recruitment of participants. There was an average of eight participants in each session and the discussions were conducted in a prearranged venue where there were no distractions to allow for concentration and free expression. An average of 55 minutes was spent on each session.

Data analysis

The discussions were tape-recorded and notes were also taken. The tape recordings were then transcribed, compared with the notes and both were merged. Thereafter the merged transcriptions were studied for the key ideas in the responses which were then summarized into themes and were developed and compared within and between groups. The audio tapes were stored in a secure place with only the researchers having access to it. Prior to entering the research site, permission to carry out the study was obtained from relevant community gate keepers and from parents of the youth concerned. The nature, purpose and process of the study were explained to the participants after which informed consent were obtained. Participants were assured of confidentiality, privacy and anonymity of information provided. It was explained to the participants that the confidentiality of information shared during the focus group discussions could not be guaranteed and as a result all participants were enjoined to treat all shared information during the discussions as confidential and private. Necessary steps such as asking for no names and keeping transcripts and data sources in a secure place were taken to ensure confidentiality. Participants were continuously reminded of their right to withdraw from the study at any time. After each session, the participants were consulted to ensure that study findings reflected their voices and perceptions.

Results

The participants were unmarried male and female youths within the age range of 15-24 years with a mean age of 20.6 ± 2.6 years. The participants were asked about their concerns about HIV/AIDS. Across all the groups, the main concern that emerged was the incurable nature of the disease. Some male participants

in the transitory community however had some misconceptions as they stated that people with HIV/AIDS are no longer human beings and that it signals the end of the world while few in the inner core stated that the fear had made them to resort to using condom anytime they had sex. For many of the female participants in the three communities, their main concern was the fact that the infection could be spread from an infected pregnant woman to her unborn child. As regards knowledge of mandatory pre-marital HIV testing, gender difference was observed in the participants' responses. All the female participants were aware and stated that religious bodies requesting intending couples to go for HIV test before they are joined together in holy matrimony is what is known as mandatory pre-marital HIV testing. They also mentioned some religious bodies that demand it and experiences of some of their acquaintances. However, some of the male participants said they were not even aware of such a thing. According to one of them, *'what I know is that religious bodies harp on the fact that there should be no sex before marriage'* while another said *'I do not know much about it but I know people will not be bold to go for such a test.'* About the perception of mandatory pre-marital HIV testing, the main response that cuts across gender and the three study sites was that mandatory pre-marital HIV testing is good and beneficial. Reasons given included *'it would make the partners to know their status'*; *'it would protect their would-be children/new generation from HIV infection'*; *'it would prevent the further spread of the infection'*; *'it protects the uninfected partner'*; *'it will reduce the number of deaths due to HIV/AIDS'*; *'it is good because it will make spinsters not to engage in premarital sex so that their wedding will not have to be cancelled because they are HIV positive'*. Few of the male participants in the inner core however saw mandatory pre-marital HIV testing as a distraction and unnecessary once intention to marry has been expressed. A female participant also said mandatory premarital HIV testing is not good because if one of the partners tests positive, he/she may not be able to marry again. About perception on what could happen if either of the intending couple tests positive there were two themes that emerged from the responses of participants to this question – that of putting an end to the relationship and the stigma involved. The view by majority across the three sites was that the sero-discordance in the HIV status of the intending couple would signal the end of such relationship. Some of them were also of the view that it will cause shame/stigma since the couple must have been seen together by many people and the knowledge of their intending marriage might have been known. According to a participant, *'all these talk that people should not stigmatize HIV positive people are all lies because people will run away from such a person, they would*

think they could be infected if they stay near or allow the person to touch the'. Similarly, some of the male participants stated that the family of the uninfected partner will never allow the relationship to continue even if the uninfected partner loves his/her infected partner to the point of wanting to marry him/her in spite of the status. Few of the female participants in the peripheral area were however of the view that if they really love each other, they would go ahead to marry despite the positive status of one of them while another female participant said *'in my church, if the uninfected partner insists on marrying the HIV positive partner, the church will still join them together but they only want the couples to be aware of their status'*.

Perceptions on religious organizations that refuse to conduct marriage for discordant partners

There were gender differences in the responses to this question. While all the male participants supported the decision of some religious organizations not to conduct marriage for intending couples when one of them is positive, almost all the female participants said such a decision was wrong and that it is not the right of such religious organizations to decide for the intending couple. Those who spoke in support of the decision of the religious bodies added that through such decisions 'other unmarried people will learn a lesson and will abstain from premarital sex'. Other reasons for their perception included 'joining discordant couples together is ungodly'; 'joining discordant couples together in wedlock will set a bad example and encourage promiscuity among the members of such religious bodies'; 'it will prevent the spread of the infection to the incoming generation'. A male participant said *'we have seen a situation where an intending couple still went ahead to marry after test had shown that they were both 'AS' but they had sicklers as children, so it is good that religious bodies should refuse to conduct a wedding in which either of the couples tests positive for HIV'*. The participants that opposed such decision were of the opinion that it was not the business of the religious organizations to refuse conducting the wedding once the partners are aware of each others' status, love each other and want to marry each other.

Perception on who should be given the results

Diverse opinions were expressed in relation to this. Majority of the participants said both partners should be given their results right there at the testing centre. Reasons behind this perception included the fact that both partners came together for the test, the need to prevent any confusion or foul play and that the man may go to hide the results if given the two, were their reasons for their response. Some of the male and female participants would want the two results to be given to the man. The main reason they gave was that the woman might not be able to control her emotions if she is the one that tests positive. According to a female

participant, *'the woman can even die there if she is given her result and tests positive but the man can control his emotion.'* *'Women are delicate and do not have strong minds'* said a female participant while one of the male participants said the man will show the woman the result after collecting it from the doctor before they now go together to their religious leader. A few of the participants were of the view that the results should first be given to the religious leader of the partners concerned without the partners seeing it. Their reason was that it was the religious leader that made them go for the test. Another male participant added that the man or the woman might tear the result angrily if given the result and that the family may also start to stigmatize if given the results where one of them is positive. *'The pastor/imam is the best person to be given the result because they can keep secrets.'*

Perception on who should disclose the results

Many of the participants were of the view that the religious leader should disclose the result to the couple. Reasons given for the preference of the religious leader in disclosing the result include *'people respect the men of God more'*; *'they can use the word of God to soothe the nerves of the couple'*; *'they are the ones that mandated the couples to do the test'*; *'they know how to do it better'*; *'they can best counsel the uninfected partner on what to and what not to do, especially so that he/she will not be telling everybody about the status of the former partner'*; *'they can use the word of God to disclose the result unlike the doctor who can say it anyhow'*. Few said the doctor should disclose the result. Those who said the doctor should be the one that should disclose the results to the couple gave reasons such as *'he is the one that conducted the test'* and *'he knows the problem they have and would be able to tell the partner who is HIV positive the drugs he/she will be using and the food he/she will be eating.'* According to a male participant, *'nobody can be trusted in life, even the pastor or imam could leak out the secret. The doctor should first call the infected partner and disclose the result to him/her before calling on the uninfected partner. He should however not disclose the result of one to the other but tell them to ask each other.'* A sharp reaction came from another male participant who said calling them separately would lead to suspicion and confusion and that the result should be disclosed to both of them at the same time. In addition, the response from yet another male participant was that the result should not first get to the pastor/imam but that the couple should be told their results before leaving the testing centre.

Perception on what religious organizations should do if either of the partners tests positive

Almost all the participants wanted the religious organizations to see to the needs of the sero-discordant intending couple and particularly the HIV positive partner. Some of the responses include; 'they should

counsel both partners especially the HIV positive one'; 'they should contribute money for the welfare of the infected partner including giving him/her money to buy antiretroviral drugs'; they should pray for both partners especially the infected partner'; 'they should link up the infected partner with organizations that care for people living with HIV'; 'they should not stigmatize but be praying for the partner with the infection'. Some of the male participants said prayers should be intensified for the infected partner because God can through the prayers take control of the situation and heal the person of the HIV infection since *'we have heard of a woman who had HIV and went to the mountain top to pray and fast after which she went back for the test and now tested negative'*. Some other participants also stated that they could still be joined together in marriage. According to one of them, *'there is a way they can still have healthy (HIV negative) children. They can still have sex using condom. So I believe they could still conduct the marriage if there is true love.'* *'They should call the two of them after a while and ask the HIV negative partner of his/her views. If he/she insists on marrying the infected partner, there is nothing they can do because love is a strong thing. So, the religious organization can take them to the doctor /hospital where they can be given counsel on how to live their lives as couples as well as give the HIV positive partner antiretroviral drugs'*. Few of the participants would however want the wedding to be cancelled while the uninfected partner should be counselled to marry another person.

Discussion

The incurability nature of HIV/AIDS unarguably is one of the reasons most people dread the disease. This was also revealed in this study. This also contributes to the discrimination people living with HIV/AIDS experience. With the advent of anti-retroviral therapy, a lot of lives have been saved and many are able to live normal lives. UNAIDS (2008) stated that improved access to antiretroviral therapy is helping to drive a decline in HIV-related mortality. Thus, though the disease has both a long incubation period and is accompanied by a lengthy period of illness, timely commencement of anti-retroviral therapy can boost the immune system and prevent the progression of the disease to full-blown AIDS. Thus there is the need to increase access to anti-retroviral treatment and to promote its availability so that misconceptions that equate HIV with the end of the world may abate. The concerns of the female participants of mother – to – child transmission of HIV are well-founded as around 1000 babies in Dakar are born with HIV every year (UNGASS 2010) and an estimated 360 children are living with HIV most of whom are infected by their mothers (UNAIDS 2010). The perception of the majority of the participants that mandatory pre-marital HIV testing will prevent the spread and protect the

uninfected against the infection is not unconnected with their view that intending marriage could either be cancelled or if the couples choose to go ahead with the wedding, they can take precautionary methods to prevent contacting the infection. This view is in consonance with a report by PlusNews (2008) that the reason behind the intention of several orthodox and Pentecostal churches in Nigeria to promote mandatory premarital HIV testing was to prevent HIV infection, rather than punish those living with the virus. Similarly, a qualitative study conducted in Ghana by Luginanh et al (2005) revealed that the sincere desire to prevent innocent brides and grooms from contracting the deadly virus was the main motivation for imposing mandatory testing church members. However, issues surrounding HIV/AIDS are much more complex as there is a window period in which the virus may not be detected yet despite the fact that the person may have been infected, testing before marriage may therefore not prevent infection within marriage as documented by De Cock et al (2006) who reported that premarital HIV testing is not effective where prevalence is low. The issue of pre-and post-test counselling is also crucial in HIV testing regardless of the results. This was echoed in the study as participants wanted religious organizations to make provision for counselling of the couple especially, the one that is HIV positive. This however seems to be a neglected area as affirmed by Uneke et al (2007) and Akanni et al (2005) in their findings when they suggested that guidelines for the management of test-positive individuals and non-concordant couples and the safeguarding of confidentiality should be developed as well as training and capacity building for religious leaders to appropriately manage social issues associated with HIV/AIDS as it affects their organizations. Luginah et al (2005) found that church-based marriage counsellors reported being ill-equipped to counsel members diagnosed as HIV positive and therefore requested training and support from the government. Similarly, a report by the Open Society Institute [OSI] (2008) indicated that the available information suggests that counselling in the context of mandatory pre-marital HIV testing is inadequate, particularly for people who test HIV positive and that in most cases, counselling focuses primarily on encouraging discordant couples to call off their wedding. The Scripture Union West Africa Capacity Building Project, (SUWA, 2006) also reported that there are no institutionalized methods of HIV counselling and testing in most Churches in Nigeria. In many cases, test results are sent directly to religious bodies that requested the intending couple to undergo the test without the couple having an inkling of what the result is.

The view of the majority that discordance in the HIV status of intending couples puts an end to the proposed marriage has been established in previous reports. The

report by OSI (2010) stated that churches and mosques will often forbid or discourage a marriage between an HIV positive person and an HIV negative partner. Similarly, a review of pre-marital HIV testing in countries like Democratic Republic of Congo (Rennie et al 2008) showed that marriage between sero-discordant couples is forbidden usually by the church while in Ghana and Ethiopia, sero-discordant couples are counselled not to marry. In Nigeria, while some churches especially the Pentecostal ones forbid such marriages, the Anglican and Catholic Churches allow the couples to take the decision and once the couples insist on going ahead with the wedding, the church joins them in matrimony.

The peculiarity of the African traditional society comes into play here as in Nigeria, families of intending couples do have a major say in decisions regarding the marriage and have to be involved in situations like this. This also presents the challenge of confidentiality of results. Some of the male participants also alluded to the fact that the family of the uninfected partner would never allow their child to marry the infected partner. This was demonstrated in one of the narratives during the focus group discussions where an episode of physical assault of a clergyman by the family of a woman for conducting the marriage between the woman who was HIV negative and her male partner who was positive without informing the family of the woman about the HIV positive status of the man despite the fact that he knew the status of the person was enunciated. The stigma that goes along with HIV infection was also highlighted by study participants as they mentioned that when one of the partners tests positive, this will also result in shame apart from the termination of the relationship since the two partners would not be seen together again and this would make people to ask questions as documented by Durojaiye and Balogun (2010) who reported a widespread stigma and discrimination associated with HIV. They were of the view that forcing people to go for HIV testing without first dealing with the stigma and discrimination will only fuel HIV-related stigma rather than reduce it. Fear of stigma may lead people who are at risk of infection to avoid the test by obtaining a fake result, by marrying in an unregistered ceremony, or by opting out of marriage altogether (OSI, 2010).

Almost all of the female participants were against the policy of some religious bodies that refuse to conduct marriage for discordant couples. This could be an indication that such a situation places more burden on the female partner as women are known to be more emotional than men. Various schools of thought have identified the fact that women are more affected by the consequences emanating from HIV/AIDS and particularly mandatory premarital HIV testing. A gender-based analysis of mandatory pre-marital HIV testing by Burns (2010) using some selected countries

where it is practiced revealed that women who tested positive tended to be barred from marriage and evicted from their communities, while men who tested positive were still able to marry and did not risk expulsion from their homes, jobs, or communities. Gender roles, gender inequalities as well as socio-cultural norms have also been identified to work against the women folk even in the issue of mandatory premarital HIV testing as affirmed by Frerichs (1997) who documented that given current gender roles and norms, it will frequently be women who suffer the consequences. While the man regardless of the result may be able to come out of the shock and marry someone else, it may take more time for the woman and this may further be compounded if it is the woman that tests positive. In the study on the mandatory pre-marital HIV testing policy of the Church in Goma, Democratic Republic of Congo, Rennie and Mupenda (2007) stated that the burdens of the church's policy could be minimized by not barring HIV positive persons from marriage. Thus if pre-and post-test could be strengthened, the choice to continue with the wedding should be left with the intending couples.

The issue of disclosure of the results is a very critical one as confidentiality of results is very controversial in HIV/AIDS and indeed in mandatory pre-marital HIV testing. It has remained a sore area which those opposed to mandatory pre-marital HIV testing have consistently highlighted as its major weakness. The issue of confidentiality also reared up in this study as the fact that even the religious leader can leak out the secret was given as the reason for the preference of a medical personnel in the disclosure of the result. Potential loss of confidentiality and the resultant consequences such as stigmatization is one of the major weaknesses of mandatory pre-marital HIV testing. Luginaah et al (2005) opined that there is the danger that without the assurance of confidentiality, young people planning to wed in a church may hesitate to go for counselling and testing fearful of the repercussions that unauthorized disclosure of their status to family members and public will have on their lives. In Dakar's cultural setting where marriage between a couple goes beyond them to include their families poses a challenge to confidentiality of results. In the situation where the parents are aware that the church or mosque where the marriage would be conducted requires HIV testing for intending couples, they definitely would want to know the results. Where the intending wedding is cancelled by the religious organization due to discordance in the HIV status of the couple, this would make the family and loved ones as well as the religious community of the couple suspect a positive HIV status of the couple. These facts are corroborated by (Burns ,2010) and (Rennie and Mupenda ,2007). The need to counsel the discordant couple, avoid stigmatizing the infected partner and connect him or her with organizations that care for people living with HIV was stressed by the

participants. The religious organizations are in a good position to do this by virtue of their calling as reiterated by (Ubuane .,2000) who said that religious bodies can help reduce stigmatization due to the communal love among its members.

Conclusion

This qualitative study has explored how the issue of mandatory premarital HIV testing is perceived among unmarried youths. The general perception is that mandatory premarital HIV testing is a good means of curtailing the spread of HIV/AIDS. However majority were of the opinion that discordance in the HIV status of the intending couple as revealed by the test will signal the end of the relationship with gender differences in perception as almost all of the female participants were against the cancellation of the intending wedding by religious bodies. Participants recommended the strengthening of post-test counselling and care for the HIV positive partner. Based on the findings, it is suggested that religious bodies who practice mandatory premarital HIV testing should consider the option of voluntary testing. Organizations working on HIV/AIDS can engage such religious bodies on this through advocacy.

References

1. Akani CI, Erhabor O and Babatunde S.(2005) Premarital HIV testing in couples from faith-based organisations: experience in Port Harcourt, Nigeria. *Niger J Med.* 14(1):39-44. Jan-Mar.
2. Burns K (2010) Mandatory premarital HIV testing: A gender analysis. *pag.aids2010.org/PDF/5752.pdf*
3. De Cock, KM, Bunnell R and Mermin J (2004) Unfinished business-Expanding HIV testing in developing countries. Retrieved July 24, 2007 from <http://content.nejm.org/cgi/content/extract/354/5/440>
4. Durojaye B and Balogun V (2010) Human Rights Implications of Mandatory Premarital HIV Testing in Nigeria. *International Journal of Law, Policy and the Family* 24(2), 245–265
5. Frerichs RR (1997) Early HIV detection, marriage and India. Retrieved August 27, 2007 from www.ucla.edu/Epi/se aids/se aids-8.html
6. Luginaah IN, Yiridoe EK and Taabazuing MM (2005) from mandatory to voluntary testing; balancing human rights, religions and cultural values, and HIV/AIDS prevention in Ghana. *Soc.Sci.Med.*61 (8): 1689-700.
7. National Agency for the Control of AIDS (2011) Fact Sheet: PMTCT in Nigeria 2011. Retrieved from <http://naca.gov.ng/content/view/399/lang.en>
8. Open Society Institute (2010) Mandatory premarital HIV testing: an overview.pdf. Retrieved from <http://aidsdatahub.org/en/whats-new/287-all-data-alerts/572-o>
9. Open Society Institute (2008) Women and HIV Testing: Policies, Practices, and the Impact on Health and Human Rights. Retrieved from <http://www.soros.org/initiatives/focus/law/articles/publications/publications/womenhiv>
10. PlusNews (2008) NIGERIA: "With this HIV test, I thee wed". Global HIV/AIDS news and analysis. Retrieved from <http://www.plusnews.org/Report.aspx?ReportId=81573>
11. Rennie S and Mupenda B (2007) Ethics of mandatory premarital testing in Africa: The case of Goma, Democratic Republic of Congo. Retrieved from www.blackwellsynergy.com
12. Scripture Union West Africa Capacity Building Project (SUWA) (2006) Communiqué. Retrieved October 16, 2008 from <http://www.cabsa.co.za/SCRIPTURE%20UNION%20WEST%20AFRICA-comunique.pdf>
13. Ubuane L, Faleyimu BL, Ajayi P, and Aremo G (2000) HIV testing, positivity and marriage in a religious set up of a Nigerian community. Retrieved May 28, 2007, from gateway.nlm.nih.gov/Meeting Abstracts
14. UNAIDS (2010) UNAIDS Report on the global AIDS epidemic 2010. www.unaids.org/documents/20101123_GlobalReport_em.pdf
15. UNAIDS (2008). Report on the global AIDS epidemic. Retrieved from <http://www.unaids.org/en/HIV data/2008/globalreport/default.asp>
16. UNAIDS/WHO (2004) UNAIDS/WHO policy statement on HIV testing. Retrieved from http://www.who.int/rpc/research_ethics/hivtestingpolicy_en.pdf.pdf
17. Uneke CJ, Alo M and Ogbu O (2007) Mandatory premarital HIV testing in Nigeria: the public health and social implications. *AIDS care.* 19(1): 116-121.
18. UNGASS (2010) 'UNGASS Country Progress Report: Nigeria'
19. UNAIDS/WHO. Epidemiological fact sheets on HIV/AIDS and sexually transmitted infections: update 2009.
20. UNAIDS/WHO Report on the global AIDS Epidemic, May 2010
21. UNAIDS/WHO (2009 February), "UNAIDS guidance note on HIV and sex worker"

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