



Health workers' perspectives on implementation of an integrated medical male circumcision strategy in KwaZulu-Natal, South Africa

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Background: KwaZulu-Natal province began implementation of voluntary medical male circumcision (VMMC) as an integral part of its HIV infection prevention strategy that includes other programmes such as HIV counselling and testing (HCT), screening and treatment of sexually transmitted infections and tuberculosis, and other sexual and reproductive health services. This followed randomised controlled trials that showed up to 60% HIV infection risk reduction amongst circumcised men. Implementation of the strategy occurred despite absence of knowledge of operational barriers and its acceptability to health care workers (HCWs).

Objectives: The study aimed to explore HCWs' perspectives of and barriers to strategy implementation at public sector health facilities to inform implementation policy.

Method: A purposive quota sampling method was used to select HCWs for focus group discussions at three study sites. Participants were asked open-ended questions using an interview schedule based on a literature review to explore acceptability of and perceptions regarding provision of the strategy. Thematic analysis was conducted.

Results: Acceptability of the strategy was high amongst the participants; however, there was limited knowledge of some key concepts of the strategy, personnel role confusion, missed opportunities for client recruitment, and infrastructural constraints. Negative perceptions included beliefs that VMMC would discourage condom use and cause stigma associated with non-circumcision of HIV-positive males, with perceptions of sexual behavioural disinhibition in circumcised men.

Conclusion: There is a need to engage further with stakeholders if implementation of VMMC is to be successful. More training and support needs to be provided to HCWs at public sector facilities.

Agtergrond: Die implementering van vrywillige mediese manlike besnyding (VMMC) is 'n integrale deel van KwaZulu-Natal provinsie se MIV-voorkomingstrategie, wat ander programme soos MIV-berading, siftingstoetse (HCT) en die behandeling van seksuele oordraagbare siektes (STI), asook ander seksuele en reproduksie-gesondheidsdienste (geïntegreerde VMMC) insluit. Dit volg op die resultate van ewekansige gekontroleerde steekproewe wat 'n doeltreffendheid getoon het van tot 60% vermindering in HIV-risiko onder mans wat besny is. Die implementering van die strategie het plaasgevind ten spyte van die afwesigheid van kennis van operasionele struikelblokke of aanvaarding deur gesondheidswerkers (HCWs).

Doelwitte: Die studie is daarop gerig om HCW se perspektiewe en hindernisse vir die implementering van die VMMC program by die openbare sektor se gesondheidsfasiliteite te verken, ten einde die uitvoering van die beleid vas te stel.

Metode: Die doelgerigte kwotasteekproefmetode is gebruik om HCW deelnemers vir fokusgroepbesprekings (FGDs) op drie studieterreine te kies. Deelnemers is oop vrae gevra met behulp van 'n onderhoudskedule gebaseer op 'n literatuuroorsig van die aanvaarbaarheid en persepsies aangaande die voorsiening van die strategie. Tematiese analise is in ooreenstemming met die doelwitte van die studie gedoen.

Resultate: Die aanvaarbaarheid van VMMC was hoog onder die deelnemers, maar 'n paar probleemareas is geïdentifiseer: beperkte kennis van belangrike begrippe van die strategie, personeelrolverwarring, geleentheid vir klientwerwing en infrastruktuurbeperkings. Negatiewe persepsies het ingesluit: oortuigings dat VMMC die gebruik van kondome sou voorkom, die stigma wat verband hou met onbesnede HIV-positiewe mans en die persepsie van onderdrukte seksuele gedrag by mans wat besny is.



Introduction

In 2010 KwaZulu-Natal Province (KZN) in South Africa (SA) commenced implementation of an integrated voluntary medical male circumcision (VMMC) strategy (VMMC combined with other HIV prevention programmes such as HIV counselling and testing (HCT), condom distribution, screening for sexually transmitted infections (STIs) and tuberculosis, HIV infection treatment and other reproductive health services) in public sector facilities. This followed the findings of the three randomised controlled trials in SA, Uganda and Kenya that demonstrated that VMMC can reduce female-to-male sexual transmission of HIV by up to 60% (Auvert *et al.* 2005; Gray *et al.* 2007; Bailey *et al.* 2007). KZN is historically a non-circumcising province, with low circumcision prevalence rates and the highest prevalence of HIV infection in SA (South African National Department of Health 2011). VMMC could be offered as an entry strategy to HIV care for eligible men or as an exit strategy following the provision of other HIV, sexual and reproductive health services.

The strategy was hastily implemented following its endorsement by KZN traditional and senior political leadership, with minimum preparation of healthcare workers (HCWs) to deal with implementation challenges. In most health facilities HCWs were being exposed to mass implementation of VMMC for the first time. Certain HCW misconceptions about circumcision, such as about impaired sexual performance and enjoyment and the belief that severe pain will follow the procedure, have been found to negatively influence their willingness to recruit prospective clients for VMMC in other studies (Sithole *et al.* 2009; Sabone *et al.* 2013). Success of the strategy depends on the commitment of HCWs, their ability to disseminate accurate and correct information regarding its efficacy and the associated risks. There is a paucity of literature regarding VMMC acceptance, attitudes and perceptions amongst HCWs, particularly in settings where VMMC is not routinely practised, such as KZN.

The study was conducted to explore HCWs' perspectives of and barriers to VMMC strategy implementation at public health sector facilities in order to inform implementation policy.

Methods

Study area and participants

The study was conducted from October to December 2012 at three public sector health facilities in two districts in KZN. Two health facilities were used in Pietermaritzburg (Umgungundlovu district) and one in Durban (Ethekwini district). One facility in Pietermaritzburg was a primary healthcare clinic (PMB clinic) situated in the city centre and the other was a district hospital (PMB hospital) (both in an urban setting). The Durban site (Durban hospital) was a State-aided district hospital in a peri-urban setting in the outer west area of Durban. The institution was a 24-hour facility offering a full spectrum of district and primary healthcare services. The study participants were HCWs working at the outpatient departments that serve as the gateway to HCT and reproductive health services.

Only HCWs who were actively involved in provision of the strategy and working at the designated entry-points for a period of six months or more were included in the study. Categories of HCWs who participated in the study included nursing personnel (professional nurses, enrolled nurses and nursing auxiliaries), counsellors and doctors. At the PMB clinic 36 people met the criteria for inclusion in the study (11 counsellors, 19 nurses and 6 doctors); 42 people at the PMB hospital (7 doctors, 13 counsellors and 22 nurses); and 31 people at the Durban hospital (15 counsellors, 10 nurses and 6 doctors). Table 1 shows the demographic characteristics of the participants selected.

Study design

The study was an interview survey of a qualitative nature. The qualitative approach was preferred as its in-depth and descriptive nature was likely to provide a detailed picture of the subjective experiences of the participants (Ulin 2002).

Sampling

A purposive quota sampling method was used to select HCW participants for the focus group discussions (FGDs) in order to explore their perspectives on provision of the strategy. A group of 15 HCWs per site (five for each stratum) were sampled, resulting in a total sample of 45 participants across the three sites. Informed consent to participate in the FGDs was obtained from participants prior to commencement of the sessions. Each FGD was opened

TABLE 1: Participants' demographic characteristics.

HCW occupational category	Medical facilities			Gender		Race			% of sample
	PMB clinic	PMB hospital	Durban hospital	Male	Female	Black people	Indian	Mixed race	
Counsellors	5	5	5	2	13	15	0	0	33.3
Doctors	5	5	5	13	2	11	4	0	33.3
Nurses: ENA	2	1	1	0	4	4	0	0	8.9
Nurses: EN	2	2	2	0	6	4	1	1	13.3
Nurses: PN	1	2	2	0	5	5	0	0	11.1
Subtotal Nurses	5	5	5	0	15	13	1	1	33.3
Total n	15	15	15	15	30	39	5	1	100
Total %	33.3	33.3	33.3	33.3	66.7	86.7	11.1	2.2	-

HCW, health care workers; PMB, primary healthcare clinic; ENA, enrolled nursing auxiliaries; EN, enrolled nurses; PN, professional nurses.



with a broad study question on the reasons for introduction of VMMC and any issues that the participants felt inhibited their performance. Thereafter the principal investigator asked questions only when a priority area of the topic guide was not being addressed or when clarification was needed. Comments were occasionally made to move the talk to another level or to clarify issues.

Data collection

An FGD guide comprising unstructured, open-ended questions was developed to conduct the interviews based on an extensive literature review on VMMC implementation knowledge and acceptability by HCWs and possible misconceptions in other settings. The guide consisted of questions ranging from the role played by VMMC in reducing the risk of contracting HIV infection, the risks and benefits of VMMC, timing of VMMC procedures, relationship between VMMC and HCT, and other implementation barriers and enablers that affect HCWs, for example: 'What role does male circumcision play in reducing the risk of contracting HIV?' and 'What do you think is the relationship between HIV testing and VMMC?'. The FGD guide allowed the participants freedom to answer from a variety of dimensions, with further probing by the interviewer on emerging themes using a continuous validation process.

The FGDs were conducted in IsiZulu and English by the principal investigator with assistance from three trained postgraduate students. Each FGD session lasted for 1–2 hours, depending on the length of responses from participants and the time constraints of busy doctors. Five doctors were unable to attend single FGD sessions due to personnel shortages and clinic workloads; therefore several visits were made to conduct individual interviews with them on an appointment basis. This arrangement ensured the full participation of doctors and allowed for more flexibility, clarity on issues and detail of the responses, thereby increasing the quality and dependability of data gathered. The interviews were tape-recorded with the permission of the participants and transcribed verbatim for data analysis. Written notes were also taken during the sessions as a back-up.

Data analysis

Data analysis of the transcripts was done using thematic analysis (Strauss & Corbin 1996; Hardon *et al.* 2001) guided by the interview schedule in accordance with the aim of the study. A summary of all of the main themes was finally done, supported by appropriate verbatim quotations where relevant.

Results

The age of the participants ranged from 19 to 53 years; they included both males (32.4%) and females (67.6%). The complete range of HCWs was represented at all sites. Generally all groups of participants were keen to discuss the issue of VMMC implementation at their facilities.

Several themes that described factors influencing HCWs' perceptions of and barriers to implementation of the strategy emerged from the FGDs and individual interviews. These were organised into three categories, namely conceptual knowledge factors; sociocultural factors; and infrastructural and health systems factors.

Conceptual knowledge factors

Unavailability of implementation guidelines emerged as a main barrier to the capacity of HCWs to implement the strategy. Participants at all sites repeatedly revealed that although they were familiar with the concept of VMMC, they were unable to promote some critical aspects of this intervention, particularly the need for an HIV test for those wishing to be circumcised due to the lack of operational guidance. Some HCWs had been trained on the principles of the strategy but there were no documents available to all workers for reference purposes. Said one counsellor from the Durban hospital: 'We seek information to give to clients on our own, and most of the information is obtained from Google. Information about the Tara Klamp device is even worse; people ask us but we have no idea what to tell them.' (The Tara Klamp® is a disposable plastic circumcision device that is clamped over the foreskin of a man's penis for several days until the foreskin dies and falls off or is removed.)

Participants also expressed reservations regarding the target groups for training programmes, the limited availability of such trainings and the impact of such trainings, as there was no cascading of knowledge obtained. Said one counsellor from the PMB clinic:

'Some nurses attended the training at [health] district [office], but they came back and continued with their work and nothing has changed. Nobody came back to train [those of] us who never attended training.' (Counsellor, PMB clinic)

Participants indicated that implementation of the strategy was essential and that VMMC provided partial protection against HIV infection. Although there was some knowledge of the VMMC efficacy of up to 60% HIV risk reduction, the meaning of this efficacy was poorly understood by most participants. This was viewed as problematic, as the concept was regarded as an important 'selling point' of VMMC to potential clients. Said one nurse from the VMMC clinic at the Durban hospital:

'It is a bit confusing to explain to clients [the up to 60%VMMC efficacy]; we just tell them that they have less chances [of acquiring HIV] and that they must still use a condom.' (Nurse, VMMC)

Some participants felt that the main target for VMMC should be infants and young children and not young adults. This was because most of the implementation barriers, such as the need to observe sexual abstinence after VMMC, amongst others, were not an issue at young ages. However, participants expressed limited knowledge about mechanisms to communicate neonatal medical male circumcision (NMMC) to their clients, as one nurse at the Durban hospital stated:



'VMMC at neonatal stages is better and has less complications than when someone is older. One also needs to do more convincing to the adults. The problem is that the government is not giving direction [*guidelines*], so we never know what to tell clients.' (Nurse, Durban hospital)

Sociocultural factors influencing HCWs' attitudes to implementation of the strategy

Some HCWs expressed reservations about promoting the VMMC intervention to clients and partners as they believed that men would discontinue the use of condoms once they were circumcised. Most HCWs indicated that there was a general perception that sexual experience was better once one was circumcised. As this male nurse from the Durban hospital stated:

'Already my brother wants to be circumcised, because his friends told him how good sex is without the foreskin. He won't use a condom because he wants the experience.' (Male nurse, Durban hospital)

HCWs who were in support of implementation of VMMC were of the view that it was better to promote VMMC as it offered some protection, given the fact that men are reluctant to use barrier methods in general, including condoms. Said this nurse at the PMB clinic: 'Perhaps it is better for all males to be circumcised, as they don't use condoms anyway.'

Amongst the HCWs whose cultural experiences involved traditional circumcision (TC), there was a tendency to equate the benefits of VMMC to TC. Some felt that TC should be strengthened by incorporating some health aspects into TC, and hence there would be no need for VMMC. Said one nurse from the Durban hospital:

'I am from the Eastern Cape, and this thing is done in the mountains; as long as it is done properly by medically trained traditional surgeons, there is no problem.' (Nurse, Durban hospital)

VMMC was regarded as superior to TC, mainly because it was perceived to be hygienic and safe, and TC was regarded as incomplete circumcision. As one doctor at the Durban hospital put it: 'Some patients who were traditionally circumcised present here partially circumcised. The process is never fully completed.'

HCWs indicated that exclusion of HIV-positive men from VMMC amounted to discrimination and resulted in the increased stigmatisation of HIV-positive people. This exclusion resulted in negative attitudes towards the offering of the strategy to clients, as HCWs did not feel comfortable about rejecting HIV-positive people for VMMC. Not all participants were aware of the government policy regarding circumcision of HIV-positive men, and some did not understand why it was not done at their institutions. Said one doctor from the Durban hospital:

'Yes, they should be circumcised as VMMC reduces their chances of re-infection. It is a known thing that people will still

not use condoms even after counselling, therefore all must be circumcised.' (Doctor, Durban hospital)

Infrastructural and health systems factors

Some human resources-related themes negatively impacting on particularly the efficient integration of the prevention programmes that are components of the strategy emerged. These included constraints posed by specific staff job descriptions that did not incorporate new tasks such as HCT and VMMC counselling for nurses whose traditional duties excluded these functions. Said one nurse from the Durban hospital: 'It is not in the nurse job description that we must do HCT.'

The inadequate training of staff and confusing roles of different staff categories in provision of the strategy in its totality were also evident. Said one counsellor from the PMB hospital:

'The outpatient department is not a suitable place for HCT as most nurses there feel it's not their job, only for counsellors. They [*nurses*] focus on medical procedures only. They never talk about VMMC and have never been trained ... Eventually everything reverts back to the counsellors.'

The frequency of staff rotations, staff turnover and the perception that VMMC has introduced an additional workload was a perception expressed in all FGDs. One counsellor from the PMB hospital said: 'By the time we get used to a system, we are then asked to go to the wards.'

The physical space constraints at clinics inhibit the mass counselling of patients, resulting in few clients being offered VMMC. This appears to disproportionately affect the outpatient department areas at most health facilities. As one nurse at the PMB hospital put it: 'There is no space for VMMC counselling at the outpatient department, we do our work in the open – there is no privacy.'

Participants also felt that the medical outpatient departments do not represent a suitable environment to recruit adult men, as most patients in these settings are sick and only interested in getting medical care. Said one counsellor at the PMB clinic:

'Most patients who come here are very sick. They only want to be attended by doctors and get their medicines, so some are uncomfortable if you now tell them about testing and circumcision.' (Counsellor, PMB clinic)

Ethical considerations

Ethical clearance to conduct this study was obtained from the University of KwaZulu-Natal Biomedical Research Ethics Committee (reference No. BF035/010) and the Department of Health, KwaZulu-Natal. Approval was also granted by the health institutions where the study was conducted.

Trustworthiness

The credibility and dependability of the data was ensured through adoption of the following initiatives:



- Use of recognised, appropriate data collection methods and participants who were experienced in their field and therefore able to provide accurate information on their experiences and barriers to practice. Despite purposive sampling, the inclusion criteria for participants made it possible for any eligible HCW to participate in the study, thereby eliminating researcher bias in selection of participants.
- Early familiarisation with the culture of participating sites before commencing data collection.
- Triangulation via use of different methods, different cadres of HCWs and sites to ensure verification of individual viewpoints and experiences.
- Iterative questioning during data collection, where matters previously raised by participants were revisited during the interview sessions, often through rephrased questions to uncover inconsistent information. Any discrepant data were discarded.
- The honesty of information given by participants was ensured through allowing them to accept or refuse to participate, thereby ensuring that only those who were genuinely willing to take part in the study and prepared to give data freely were enrolled.
- The study results were subsequently compared with those of other studies to establish congruency of findings; and
- The investigator and assistants (psychology postgraduate students) were qualified professionals with experience in qualitative inquiry, therefore ensuring quality data collection and interpretation.

The guidelines for implementation of the strategy are the same for all health institutions in SA. Therefore the findings may be transferable to other similar situations in SA or to facilities with characteristics similar to those described in this study.

Discussion

Poor operational guidance contributes to the development of misconceptions about some aspects of the VMMC strategy and inadequate recruitment of eligible clients. This is despite the high acceptability of and support for implementation of the strategy amongst the HCWs, a finding that is consistent with other studies (Scott, Weiss & Viljoen 2005; Lagarde *et al.* 2003; Auvert *et al.* 2008; Weiss *et al.* 2008).

The influence of HCWs' knowledge deficiencies on the efficient implementation of the strategy was evident from the differences in the explanation of some aspects of the strategy, such as the VMMC efficacy, that many HCWs use to entice prospective clients to VMMC services. This highlights the need for dissemination of standardised messages from the health authorities in order to prevent miscommunication of the strategy. HCWs had to resort to the use of external media sources to update their knowledge on some key aspects of the strategy. This practice may pose the risk of inappropriate messages being disseminated to clients and possible malpractices based on untested information (Christensen & Griffiths 2003).

Another knowledge gap amongst the HCWs was regarding the concept of provider-initiated HCT. Historically in KZN HCT was offered to patients at health facilities on a voluntary basis (voluntary counselling and testing). This approach was changed to the provider-initiated counselling and testing (PICT) strategy, where HCWs were expected to proactively offer HCT to all clients in order to increase case-finding of HIV-positive clients who were eligible for care and treatment services, and thereby increase uptake of such services (World Health Organization/Joint United Nations Programme on HIV/AIDS 2007). PICT was implemented together with VMMC, but implementation guidelines were not issued to them and there had been limited introductory training for some HCWs. The inadequate training and non-availability of guidelines resulted in situations where staff roles in HCT provision were unclear, and some HCWs were unsure of the need to conduct HCT for all clients. Poor knowledge of the reasons for HCT for VMMC clients amongst HCWs has been observed in other studies (Sabone *et al.* 2013).

The HCWs regarded the targeting of VMMC services to young adult males as inappropriate, as it resulted in additional responsibilities beyond the surgical procedure itself. These include the need to conduct HCT and review visits after circumcision. The belief that focusing on the intensification of NMMC would be most beneficial as it would reduce the need for resources and prevent the need for HCW involvement in the ongoing follow-up and possible treatment of circumcised men, is a finding common in other studies (Plank *et al.* 2013). NMMC is also associated with fewer medical risks than adult VMMC (SA National Department of Health 2010) and has the additional benefits of cost-effectiveness, elimination of the mandatory sexual abstinence period post-circumcision, and results in no loss of school days as is the case with adults (Young *et al.* 2012; South African National Department of Health 2011).

In this study knowledge about NMMC was sub-optimal. There is a paucity of literature regarding NMMC conceptual knowledge by HCWs; however, others have found that the knowledge is low in other settings (Young *et al.* 2008). This hinders its intensification at health facilities as clients, particularly women, are not given sufficient information to allow them to make decisions on circumcising their newborns.

Sociocultural factors such as the beliefs about and exposure to TC amongst some HCWs appear to lead to misconceptions that TC has the same benefits as VMMC. Other studies have shown that the support for TC could be a negative and a positive attribute, as it could promote or inhibit VMMC acceptance (Westercamp & Bailey 2007). However, this study shows that such acceptance may be due to false beliefs about the health benefits of the two practices. The beliefs amongst the doctors were clear: that TC was inferior, unsafe, incomplete and unhygienic. Such reservations about TC are supported by findings in other studies that show VMMC to be associated with much less risk of adverse outcomes



(Galdas, Cheater & Marshall 2005; Titus & Moodley 2011). The support for TC appears to be strongest amongst HCWs, who indicated that the practice was part of their upbringing. Other studies have also shown the existence of tensions between medical science and TC over the claim to circumcision knowledge (Sabone *et al.* 2013). Such claims may be a determinant of some HCWs' acceptance of VMMC. Improvements in counselling and communication on issues of TC and its differences from VMMC need to be made through the implementation guidelines in order to ensure accurate messaging by HCWs to clients.

The study found evidence that some HCWs perceived VMMC as likely to promote increased sexual risk-taking behaviours (behavioural disinhibition) amongst circumcised men as they sought to prove the belief about enhanced sexual satisfaction following VMMC. The perceptions of increased sexual satisfaction following VMMC have been investigated in several studies, with varying findings (Masood *et al.* 2005; Schober *et al.* 2009); however, increased sexual performance remains the predominant belief of most men (Fink, Carson & DeVellis 2002). This perception was also observed in the high number of HCWs who believed that circumcised men would discontinue the use of condoms and thereby increase their vulnerability to STIs and HIV infection. Varying degrees of sexual disinhibition following VMMC have been observed in other studies (Grund & Hennink 2012; Herman-Roloff *et al.* 2011). Guidelines on pre-VMMC and post-surgery counselling are important in ensuring minimum sexual disinhibition and addressing HCWs' inadvertent negative feelings about the likelihood of development of such practices.

The study also reveals the presence of resistance to following aspects of the strategy that are regarded by HCWs to be promoting stigma and discrimination against certain clients. This was mainly attributed to the exclusion of HIV-positive males from VMMC practices. None of the HCWs were aware of the official government prescriptions on this issue or the reasons for exclusion of this group of men. The absence of benefits in circumcising HIV-positive men has been reported in the literature (Wawer *et al.* 2009; Tobian *et al.* 2011), but HCWs were generally unwilling to accept such explanations, with some doctors indicating issues such as preventing the re-infection of men as further reasons to circumcise HIV-positive men.

Human resources-related issues account for the large proportion of barriers to the implementation of the VMMC strategy from the HCWs' perspectives. Human resources constraints are a common finding in other studies on barriers to programme implementation (MacFarlane 2005). Amongst the human resources constraints are the restrictions posed by personnel job descriptions, where HCWs tend to adhere to their contract stipulations, many of which exclude provision of VMMC services. The issue of work roles for different cadres is also critical, as doctors and nurses do not regard VMMC counselling as part of their duties. This role tends to be left for the counsellors, who also regard it as an additional

burden on their already heavy workload. These factors highlight the need to incorporate VMMC provision into the staff performance areas, an aspect that may have been overlooked by the health authorities owing to impromptu implementation of the programme. Communication regarding new roles needs to be efficiently communicated with HCWs to enable their commitment (Willis-Hattuck *et al.* 2008).

The poor organisational management, supervisory constraints to provision of VMMC, high staff turnover and frequent rotations are a common finding in other studies (Leshabari *et al.* 2008). Counsellors tend to be disproportionately affected, owing to their low numbers at health facilities and the need to frequently deal with different patient profiles. The staff rotations at fixed VMMC points tend to be less frequent, as staff are permanently allocated to these points, and hence the uptake of VMMC and HCT services is high at these entry-points.

The perceptions of increased workload and VMMC resulting in service bottlenecks are influenced by the high patient headcounts in relation to personnel at outpatient departments. This calls for the designing of customised VMMC operational plans to suit each clinic's dynamics and client volumes. The addition of more personnel may not necessarily be a requirement for all facilities; rather guidance on the work distribution (leadership) and stewardship is an obvious requirement, as observed in other studies (Coovadia *et al.* 2009; Gupta *et al.* 2008).

Recommendations

This study indicates that the HCWs' self-efficacies for ensuring effective strategy implementation still require strengthening. Some of the initiatives that can be undertaken to improve implementation include the following:

- Immediate dissemination of the implementation guidelines for the strategy, in particular the VMMC and PICT components, and subsequent training of HCWs on the guidelines.
- The implementation guidelines for VMMC need to provide a framework to ensure a targeted communications strategy that addresses issues of misconception amongst HCWs at health facilities. Clear messages are needed to inform HCWs' practices regarding HIV-infected men, so as to standardise approaches and ensure achievement of the intended outcomes of the strategy. The guidelines could also be strengthened by inclusion of previously overlooked aspects such as HIV re-infection of infected men who fail to use condoms.
- Further engagement of HCWs and other stakeholders on task-sharing, in order to facilitate the effective integration of HIV prevention programmes that form part of the strategy.
- Conducting of a situation analysis of each health facility and entry-point that includes the available infrastructure,



human resources and capacity of personnel prior to implementation of the strategy.

- Provision of VMMC services on an outreach basis and increasing group counselling for HCT in settings where infrastructural constraints exist. This will allow involvement of staff cadres that are currently excluded in facilitating consent to HCT privately during one-on-one consultations.
- Regular supervision, monitoring and evaluation of HCWs to improve the effectiveness and quality of the strategy's implementation.

Lastly, attention needs to be paid to the workspace constraints at health institutions that inhibit effective implementation of the VMMC strategy. The inadequate counselling space and mostly open environment where the nursing personnel work limits the participation of nursing staff in the provision of HCT and VMMC services.

Limitations of the study

Most of the participants who were interviewed were black African health workers, owing to the staff demographics at the health institutions. Also, the staff who were interviewed were day staff, and their views may be different from those of people working night shifts and in other departments who were not included in the sample. The doctors' time was limited owing to their scarcity and demanding schedules, and the resultant information may not be sufficient representation of their views. Other boundaries to the study that need to be noted include the fact that the study was conducted at just three facilities in KZN, it was conducted using three cadres of HCWs working at the coalface of VMMC strategy delivery, and the small number of participants using an FGD method for data collection conducted over a period of 3 months in 2102.

Conclusion

The HCWs are influential stakeholders in the public health system and represent the face of health service delivery. Their viewpoints greatly influence individual and community health-seeking behaviours by virtue of messages they disseminate and the knowledge they possess on health interventions. This study has revealed perceptions and implementation barriers that impact on the ability of HCWs in implementation of the strategy and the quality of services provided. Whilst some of the knowledge gaps and sociocultural and infrastructural barriers identified have been observed in other studies, some unique challenges emerged in this study. These include the negative impact of the unavailability of operational guidelines, and the strong feelings about the perceived stigmatisation of HIV-positive men influencing HCWs' performance, amongst others. The human resources organisational barriers to effective integration and uptake of prevention programmes were prominent, and these need to be reviewed to ensure the commitment of frontline health personnel in implementation of the strategy.

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Competing interests

The author declares that he has no financial or personal relationship(s) that may have inappropriately influenced him in writing this article.

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