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The provision of health education regarding HIV/AIDS prevention among boys who undergo male circumcision at hospitals in the Vhembe District, Limpopo Province, South Africa

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Abstract

Male circumcision has been practised traditionally as one of the initiation rites that prepare boys for manhood. The Primary focus for this initiation rite was sexuality education. However, concern exists regarding the safety and hygiene of traditional male circumcision. This concern has resulted in boys seeking medical assistance in large numbers at hospitals for medical male circumcision. The World Health Organization (WHO) has recommended male circumcision as an HIV/AIDS prevention strategy. This study aimed to determine the extent of health education pertaining to HIV/AIDS prevention provided to boys undergoing male circumcision in a hospital setting. A descriptive quantitative survey was used. The study applied convenience sampling for selecting 50 males, aged between 12 and 21 years from the Vhavenda ethnic group, who were undergoing male circumcision in hospitals A, B, and C in the Vhembe district. Data were collected through a self-designed standardised questionnaire administered through face-to-face interviews. The results of the study showed that the participants had a basic knowledge regarding HIV/AIDS transmission and prevention and that provision of health education in hospitals was limited, as healthcare practitioners concentrated on the procedure namely male circumcision only. Re-orientation and sensitisation of healthcare providers on the importance of health education for providing more in-depth knowledge about HIV/AIDS and the role of male circumcision in HIV/AIDS prevention were also recommended.

Keywords: HIV/AIDS, male circumcision, sexually transmitted infections, health education, sexuality education.

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Introduction

The number of HIV-infected individuals keeps on increasing, with the result that HIV/AIDS remains a global health challenge. The World Health Organization (WHO) acknowledges that HIV remains a major obstacle against the achievement of the Millennium Developmental Goals (MDGs), now moving into Sustainable Development Goals (SDG's); with a total of 33.4 million people

living with HIV worldwide and 2.7 million people newly infected with HIV in the year 2008 (WHO, 2010).

Various strategies are in place to fight the HIV/AIDS pandemic such as condom usage during sexual intercourse. Male circumcision has been considered as one of the strategies used for HIV prevention. Following a review of the results of three randomized controlled trials and other evidence on male circumcision and HIV prevention, the WHO and the Joint United Nations Program on HIV/AIDS (UNAIDS) recommended male circumcision as “an efficacious intervention for HIV prevention” (WHO & UNAIDS, 2007).

Despite critiques raised by Boyle and Hill (2011) that the recommendation was unjustified, Wamai *et al.* (2012) argued that such a recommendation was based on “quality, consistent and robust evidence”. Furthermore, Auvert *et al.* (2013) confirmed the recommendation through a cross sectional survey which enlightened a significant reduction of HIV incidence among circumcised men in comparison to uncircumcised men.

In South Africa, some of the ethnic groups such as Vhavenda and Xhosa people have been practising male circumcision traditionally as one of the initiation practices that prepare boys for manhood. Malisha *et al.* (2008), citing Oomen (2002), indicate that male circumcision forms a significant part of the initiation process and that it is strongly associated with the transition from childhood to manhood. In addition, Mangena *et al.* (2011) argue that male circumcision not only entails cutting of the foreskin but also involved sexuality education and that it serves as an opportunity to educate young men on life skills that relates to manhood.

However, there is concern regarding safety and hygiene in traditional male circumcision. For instance, *Plus News* (2007) revealed that in 2007, 12 initiates died and more than 20 illegal traditional surgeons were arrested in the Eastern Cape Province in South Africa. In addition, *City Press* (27 January 2013) revealed that one initiate lost his penis during traditional circumcision and that another had died. Owing to fear of traditional circumcision parents send their boys to hospitals for safe medical male circumcision procedures. In affirmation of this new trend Bailey *et al.* (2008) and Wambura *et al.* (2011) have shown that indeed families are shifting from traditional to medical male circumcision.

Despite the fear, traditional initiation schools are still viewed as having an influence on sexuality education. A study carried out by Malisha *et al.* (2008) revealed an opportunity for developing traditional initiation schools into a medium of sexuality education and communication about risk to complement HIV/AIDS awareness programmes. Ladzani and Sengani (2011) indicate that the matter of sex education has never been a problem in traditional initiation

schools; since from childhood to adulthood, the initiation schools are about sexuality education. Ladzani and Sengani (2011) furthermore show that HIV/AIDS education is taking place in initiation schools.

There is, however, a lack of evidence from the literature regarding education on the prevention of HIV/AIDS during male circumcision in hospitals in Vhembe district, Limpopo Province. This study was carried out to determine if health education is taking place during male circumcision in these hospitals.

Problem statement

Male circumcision has been practised traditionally through initiation schools that prepare boys for manhood. Although traditional male circumcision is still in existence, increasing concerns surround the safety and hygiene of traditional male circumcision. Boys are seeking medical assistance in large numbers at hospitals for medical male circumcision. Ramkisoan *et al.* (2010), observe a decline in the number of men being circumcised at initiation schools and an increase in those approaching health centres for safer medical male circumcision.

A vacuum in medical male circumcision has been identified insofar as the educational role played by traditional male circumcision. Mulaudzi (2007) argues that the shift from traditional practices to medical practices leaves a vacuum that has not yet been filled. This argument shows that there are best practices that could be learned from traditional male circumcision such as: the health-related value of circumcision; sexuality education and premarital counselling. Lebeso (2010), citing Mbungua (2006), acknowledges that education in sexual behaviour happens when young boys and girls are initiated, because the mentors of the initiate are mandated to give comprehensive to the initiates.

Although boys may view male circumcision as prevention and not use condoms, it is through education that they will learn that male circumcision and the use of condoms afford them full protection from HIV/AIDS and sexually transmitted infections (STIs). There is, therefore, a need to determine if health education takes place during male circumcision in hospitals in the Vhembe district of the Limpopo Province. This study aimed to determine the extent of health education pertaining to HIV/AIDS provided to boys undergoing medical male circumcision at hospitals in the Vhembe District, Limpopo Province. The following were the specific objectives of the study: To determine the knowledge and attitude regarding HIV/AIDS and its prevention; to determine the attitudes regarding male circumcision and its role in HIV/AIDS prevention and lastly, to assess the knowledge and attitudes regarding STIs and prevention among boys undergoing medical male circumcision.

Concept clarification

Health education

For the purpose of this study, health education is about teaching boys who are undergoing medical male circumcision the role of circumcision in the prevention of HIV/AIDS and other STIs. Such education should equip the boys with knowledge regarding HIV/AIDS and STI prevention as well as the role of male circumcision in preventing HIV/AIDS and other STIs.

Sexuality education

This entails education given to young boys and girls regarding sexual development, which includes sexual and reproductive health, HIV/AIDS and STI prevention and prevention of teenage pregnancy.

Male circumcision

Two types of male circumcision are discussed in this study; i.e. medical and traditional male circumcision. Medical male circumcision is a surgical removal of the foreskin of the penis carried out in a clinical setting under aseptic techniques by a trained medical practitioner and with proper instrumentation (Bailey *et al.* 2008).

Traditional male circumcision is circumcision done in a non-clinical setting by a traditional provider with no formal medical training. It is an initiation ritual and a rite of passage into manhood (Wicken *et al.* 2010).

Methodology

The study took a descriptive quantitative approach and was carried out through a survey.

Research setting

The Vhembe district comprises seven public hospitals and of these, six hospitals offer medical male circumcision services. The study was conducted in three public hospitals (A, B, C) from the Vhembe District where the Vhavenda ethnic group is among the largest group receiving healthcare services.

Research population and sampling

The population for the study was all the boys who were undergoing medical male circumcision at hospitals in the Vhembe district during the period of the last week of June and the first week of July 2013. Total medical male

circumcisions conducted in hospitals A, B, and C during the period of data collection amount to 873, and of this number 548 were boys from the age of 12 years and above.

In the Vhavenda culture the average age for male circumcision is 12 years (Ewing *et al.*, 2011). In light of this assertion, convenience sampling was used to randomly select a sample of 50 boys aged 12 to 21 years old who: were undergoing medical male circumcision; who met the eligibility criterion of being boys who belong to the Vhavenda ethnic group; lived in Venda; spoke Tshivenda; and had been groomed according to the Vhavenda culture.

This was the best sample to represent the population of boys of ages 12-21 years who were undergoing medical male circumcision. Meyer *et al.* (2004), recommends the use of larger samples so as to increase the accuracy and credibility of the data; however, discourage the use of sample sizes of less than 30 participants as they are statistically difficult to work with. Nonetheless, the actual sample size during the period of data collection was 50, representing 83% of the overall population boys who were undergoing medical male circumcision.

Convenience sampling was again used to select three hospitals that offer medical male circumcision from the Vhembe district, and were identified as hospitals A, B and C. The hospitals were selected based on the rationale that they were based where most of the Vhavenda ethnic group were staying and accessing their health care services.

Data collection

A self-designed standardised questionnaire with structured closed-ended questions was the main form of data collection, which applied the Likert scale method. It was divided into five sections: Section A covered the participants' demographics while Section B addressed questions on their knowledge of HIV to determine whether they received HIV/AIDS education. Section C focused on the importance of circumcision and its role in HIV/AIDS prevention. Section D covered knowledge on sexually transmitted infections whilst Section E dealt with determining whether educational materials regarding HIV/AIDS, STIs and male circumcision were given out to the participants. This article however, focuses on section A until section D of the questionnaire.

The questionnaire was administered by means of face-to-face interviews. An interview was carried out with each respondent in each hospital's OPD consultation room while the participants were waiting to go to theatre. They had signed the consent form for the medical male circumcision procedure, as well as informed consent for participating in the study.

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The participants were asked questions and the researcher documented their responses on the questionnaire. The questionnaire was interpreted and translated from English to Tshivenda to enable the participants to gain full understanding of its contents. The aim of the questionnaire was to determine whether the boys had received any education at the hospital regarding male circumcision and HIV/AIDS prevention. It has been noted from the literature that in discussing HIV/AIDS prevention, STIs also form part of the discussion. For this reason the questionnaire also addressed the issue of STIs in one of the sections.

Quality control (reliability / validity)

To ensure reliability and validity, the questionnaire was tested through a pilot study with the pilot comprising a total of six participants who met the eligibility criteria. The same set of questions and same order of questioning was used for all the respondents to ensure quality. Furthermore, a panel of experts from the Department of Nursing Science at the University of Pretoria was involved in the process of reviewing the proposal for the study, as well as the questionnaire.

Data management and analysis

Data was first verified and then analysed using appropriate statistical procedures. STATISTICA and Microsoft Excel were used to conduct a comprehensive statistical analysis. Descriptive statistics were used in describing and summarising data. Data were analysed through cross tabulations, measures of central tendency.

Ethical considerations

Permission to conduct the study was requested from the Ethics Committee of the Faculty of Health Sciences, University of Pretoria. Having obtained the clearance certificate, permission was also requested and granted from the Limpopo Department of Health, the Vhembe district authorities as well as the hospital superintendents. The study adhered to the following ethical principles as articulated by the Belmont Report: The principles are beneficence, respect for human dignity and justice (Polit & Beck, 2008).

Consent was obtained from boys who were 18 to 21 years. Furthermore, consent was sought from parents of boys aged 12 to 18 years and these boys' consent obtained through the assent form.

Results

The results (n=50) of this study are based on the following sections of the questionnaire: demography; knowledge and attitudes regarding HIV/AIDS and

prevention; knowledge and attitudes regarding male circumcision and its role in HIV/AIDS prevention; and, lastly, knowledge and attitudes regarding STIs and prevention.

The questionnaire measured the magnitude of the participant's knowledge by asking them the extent to which they agreed or disagreed with the assertions given. However, for the presentation of the results in this article, the level of agreement was measured by combining both 'agree' and 'strongly agree'. Similarly, level of disagreement was measured by combining both 'disagree' and 'strongly disagree'.

Demography

From the number of respondents of 50 which is the study sample, a significant 78% of the participants were in the age group 12 to 14 years, with the majority (58%) in grades 5 to 7. The 15 to 17 year age group accounted for only 18% of the total, while the age group 18 to 20 years accounted for only 4%. None were over 21 years of age. A significant 92% resided in rural areas while only 8% were within the urban areas of Vhembe district.

Knowledge and attitude regarding HIV/AIDS and prevention

Another focus of the study was to assess the participants' knowledge and attitude regarding HIV/AIDS and its prevention. Participants were asked if they had ever been taught about HIV/AIDS. They were asked to provide further information on where they had received such education.

To assess knowledge and attitude regarding HIV/AIDS and prevention, participants were asked if they agreed or disagreed with the following statements: unprotected sex causes HIV; exposure to the blood of an infected person causes HIV; walking with an HIV-positive person can cause one to get the infection; and, lastly, condoms give protection against HIV.

About 64% of participants acknowledged having received HIV/AIDS education and from these 62% had received the education at school while only 2% had received it from Love Life, which is a non-governmental organisation (NGO). Nonetheless, about 36% indicated that they had never received such education.

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Table 1 shows the responses of participants on the level of knowledge and attitude regarding HIV/AIDS. When participants were asked whether unprotected sex causes HIV, about 78% agreed whilst 22% thought otherwise. From these participants, 58% who agreed that unprotected sex causes HIV had received education on HIV/AIDS while only 20% who agreed never received such education. Furthermore, from the 22% who disagreed that unprotected sex causes HIV; only 6% had received education on HIV/AIDS whilst 16% were never taught about HIV/AIDS. On the question of exposure to blood of an infected person causing HIV, about 88% agreed with this while only 12% thought otherwise. Of those who agreed, 62% acknowledged to have received HIV/AIDS education and only 26% did not receive such education. Furthermore, the 12% who disagreed had never been taught about HIV/AIDS. The participants' opinions about walking with an HIV-positive person causing one to get the infection showed a significant 86% disagreement, while only 14% thought otherwise. About 60% of those who disagreed had received HIV/AIDS education while only 26% of those had never received such education.

Table 1: Responses of participants on the level of knowledge and attitude regarding HIV/AIDS

	Taught about HIV/AIDS (%)		
	Yes	No	Total
Unprotected sex causes HIV(%)			
<i>Strongly Agree</i>	28.00	4.00	32.00
<i>Agree</i>	30.00	16.00	46.00
<i>Disagree</i>	6.00	6.00	12.00
<i>Strongly disagree</i>	0.00	10.00	10.00
Exposure to blood of an infected person causes HIV(%)			
<i>Strongly Agree</i>	22.00	2.00	24.00
<i>Agree</i>	40.00	24.00	64.00
<i>Disagree</i>	2.00	4.00	6.00
<i>Strongly disagree</i>	0.00	6.00	6.00
Walking with an HIV positive person can cause one to get the infection (%)			
<i>Strongly Agree</i>	0.00	0.00	0.00
<i>Agree</i>	4.00	10.00	14.00
<i>Disagree</i>	36.00	24.00	60.00
<i>Strongly disagree</i>	24.00	2.00	26.00
Condoms give protection to HIV (%)			
<i>Strongly Agree</i>	18.00	4.00	22.00
<i>Agree</i>	44.00	24.00	68.00
<i>Disagree</i>	0.00	2.00	2.00
<i>Strongly disagree</i>	2.00	6.00	8.00

Additionally, only 10% of those who agreed had never been taught about HIV/AIDS. A significant 90% agreed that condoms give protection against HIV/AIDS, although the remaining 10% thought otherwise. About 62% of those who agreed had received education on HIV/AIDS whereas 28% had never received such education.

Knowledge and attitude regarding male circumcision and its role in HIV/AIDS prevention

Another focus of the study was to assess the participants' knowledge and attitude regarding male circumcision and its role in HIV/AIDS prevention. Participants were asked if male circumcision was another means of HIV/AIDS prevention and if it should be performed in a hospital setting. They were furthermore asked if all males should be circumcised and if men who were circumcised should use condoms for full protection against HIV. Table 2 indicates the responses of participants on their level of knowledge and attitude regarding male circumcision and its role in HIV/AIDS prevention. It is shown that 64% agreed that male circumcision was another means for HIV/AIDS prevention, while only 36% disagreed. From those who agreed, about 44% had received HIV/AIDS education from school and the remaining 18% had never been taught about HIV/AIDS. Also, from those who disagreed, about 18% had received education from school about HIV/AIDS while the other 18% had never received such education. When participants were asked whether male circumcision should be performed in a hospital setting; a significant 88% agreed, compared to only 12% who disagreed. Furthermore, of those who agreed that circumcision should be performed in a hospital setting, about 52% had received HIV/AIDS education from school while the other 32% had never received such education. Likewise, on the question of whether all males should be circumcised, a significant 88% agreed while only 14% disagreed. Of those who agreed, about 60% had received education from school whereas about 24% had never received such education.

Table 2: Responses of participants on the level of knowledge and attitude regarding male circumcision and its role in HIV/AIDS prevention

		Where HIV/AIDS education is received (%)					Total
		None	Hospital	School	Home	Others	
Circumcision is another method of HIV/AIDS prevention (%)	<i>Strongly Agree</i>	-	-	6.00	-	-	6.00
	<i>Agree</i>	18.00	-	38.00	-	2.00	58.00
	<i>Disagree</i>	14.00	-	12.00	-	-	26.00
	<i>Strongly disagree</i>	4.00	-	6.00	-	-	10.00
Circumcision should be performed at a hospital setting (%)	<i>Strongly Agree</i>	10.00	-	14.00	-	-	24.00
	<i>Agree</i>	24.00	-	38.00	-	2.00	64.00
	<i>Disagree</i>	2.00	-	6.00	-	-	8.00
	<i>Strongly disagree</i>	-	-	4.00	-	-	4.00
All males should be circumcised (%)	<i>Strongly Agree</i>	6.00	-	28.00	-	-	34.00
	<i>Agree</i>	18.00	-	32.00	-	2.00	52.00
	<i>Disagree</i>	10.00	-	2.00	-	-	12.00
	<i>Strongly disagree</i>	2.00	-	-	-	-	2.00
Men who are circumcised should use condoms for full protection from HIV (%)	<i>Strongly Agree</i>	2.00	-	26.00	-	-	28.00
	<i>Agree</i>	28.00	-	36.00	-	-	64.00
	<i>Disagree</i>	4.00	-	-	-	-	4.00
	<i>Strongly disagree</i>	2.00	-	-	-	2.00	4.00

In addition, the last question on this section asked the participants if men who were circumcised should use condoms for full protection against HIV. Interestingly, 92% agreed. Of importance again is that almost 62% of those who agreed had received education on HIV/AIDS from school.

Knowledge and attitude regarding STIs and prevention

Another focus of the study was to assess the participants' knowledge and attitude regarding STIs and their prevention. Participants were asked if they had been taught about STIs and were asked where they had received this education. About 66% claimed to have received STI education and of these almost 62% had received education on STIs from school, while 4% claimed to have received such education from the hospital. However, about 34% claimed to have never had any STI education. To assess knowledge of STIs, the study focused on the main signs and symptoms of STIs and the types of STIs. Table 3 shows the responses of participants on knowledge and attitude toward the main signs and symptoms of STIs. Participants were asked if the main signs and symptoms of STIs were penile or vaginal discharge, burning urine and genital ulcers. About 70% of the participants agreed that penile or vaginal discharge was one of the main signs and symptoms of STIs compared to 30% who disagreed. Of those who agreed, almost 44% had received STI education from schools while about 24% had never received such education. Of importance to note as well is that 78% of the participants agreed that burning urine was one of the main signs and a symptom of STIs. However, from those who agreed to this assertion, about 50% received STI education from schools whilst only 26% had never received such education. Interestingly, about 86% of the participants also agreed that genital ulcers were also one of the main signs and symptoms of STIs. Of those who agreed, about 54% had received STI education from school whereas about 30% had never received such education.

Table 3: Responses of participants on knowledge and attitude toward the main signs and symptoms of STIs

		Main signs and symptoms of STIs											
		Penile or vaginal discharge (%)				Burning urine (%)				Genital ulcer (%)			
		SA	A	D	SD	SA	A	D	SD	SA	A	D	SD
Where STI education was received	None	4.00	20.00	10.00	-	6.00	20.00	8.00	-	10.00	20.00	4.00	-
	Hospitals	-	2.00	2.00	-	-	2.00	2.00	-	-	2.00	2.00	-
	Schools	6.00	38.00	16.00	2.00	14.00	36.00	10.00	2.00	16.00	38.00	8.00	-
	Total	10.00	60.00	28.00	2.00	20.00	58.00	20.00	2.00	26.00	60.00	14.00	-

SA – Strongly agree, A – Agree, D – Disagree, SD – Strongly disagree.

The responses of participants on knowledge and attitude toward the types of STIs are addressed by Table 4. The participants were asked if the types of STIs included gonorrhoea, syphilis and genital herpes. About 52% of the participants agreed that gonorrhoea was one of the types of STIs whereas about 48%

disagreed. Of those who agreed, about 32% received education on STIs while 18% had not. Furthermore, of those who disagreed, about 30% had received education on STIs whereas only 14% had never been taught about STIs. Regarding syphilis as one of the types of STIs about 62% agreed with this assertion while only 38% disagreed. Of those who agreed, about 42% had received education on STIs whereas only 16% had not. Even for those who disagreed, about 20% had received STI education whereas only 18% had not. Lastly, on the question of genital herpes as one of the types of STIs; interestingly, a significant 84% agreed to this assertion whilst only 16% disagreed to this. And of those who agreed, about 52% received STI education whereas only 30% had not.

Table 4: Responses of participants on knowledge and attitude toward the types of STIs

Types of STIs											
Gonorrhoea (%)				Syphilis (%)				Genital Herpes (%)			
SA	A	D	SD	SA	A	D	SD	SA	A	D	SD
4.00	16.00	14.00	-	2.00	14.00	18.00	-	6.00	24.00	2.00	2.00
-	-	2.00	2.00	-	4.00	-	-	2.00	-	2.00	-
10.00	22.00	24.00	6.00	8.00	34.00	20.00	-	22.00	30.00	10.00	-
14.00	38.00	40.00	8.00	10.00	52.00	38.00	-	30.00	54.00	14.00	2.00

SA – Strongly agree, A – Agree, D – Disagree, SD – Strongly disagree.

Discussion

Approximately 92% of the participants came from rural areas, which are areas commonly known to practise traditional male circumcision. This finding is in agreement with the findings of Wambura *et al.* (2011) regarding the acceptability of medical male circumcision in communities that practise traditional male circumcision. Although the Culture and Health Programme (CHP) survey Ewing *et al.* (2011) found the average age for male circumcision among the Vhavenda ethnic group to be 12 years, the current study has shown that the preferred age for medical male circumcision among the Vhavenda ethnic group is 12 to 14 years. This age group makes up 78% of the participants in the study. Furthermore the majority of participants in the current study were in grades 5 to 7 (intermediate phase) and which could suggest that the intermediate phase is the best phase for teaching sexuality education and HIV/AIDS prevention as the children are starting to develop their sexual debut.

Knowledge and attitude regarding HIV/AIDS and prevention

The data in this study reveal that HIV/AIDS education is provided mostly at schools in the Vhembe district and it is of concern to find that no education has taken place at hospitals. Nonetheless, from the findings of this study it is evident

that most of the participants have shown to have knowledge of HIV/AIDS transmission and condom use as a preventative measure (Table 1). These findings concur with those of Odusanya and Bankole (2006) whose findings demonstrate that the participants have knowledge on the mode of HIV transmission and precautionary measures against HIV.

Knowledge and attitude regarding male circumcision and its role in HIV/AIDS prevention

Male circumcision has been practiced among various ethnic groups as an important rite to adulthood with the Vhavenda being one of those groups. However, as safety concerns rise, medical male circumcision has become a frequent choice (Wilcken 2010). This is also revealed in the current study where a significant number of participants agreed that all males should be circumcised and that circumcision should be performed in a hospital setting (Table 2). The results of this study are indicative of the participants' awareness of the role of male circumcision in HIV/AIDS prevention and their being informed about the use of condoms for full protection against HIV/AIDS and STIs.

Of concern, though, is that some of the participants did not agree to male circumcision as a method of HIV/AIDS prevention, which is indicative of a need to reinforce the recommendation by the WHO regarding male circumcision as a method of HIV/AIDS prevention. It is important to determine interventions that will reach out to people who do not believe in circumcision as one means to prevent HIV/AIDS in order to contribute to the curbing of the HIV pandemic. In addition, Carbery, Zhu, Gust, Chen, Kretsinger and Kilmarx (2012) and the WHO (2009) suggest a need for supplementary staff training to those who offer medical male circumcision to ensure that staff is able to educate and counsel the clients with relevant information about male circumcision.

Knowledge and attitude regarding STIs and prevention

The literature has emphasised the link between HIV and STIs, which explains the inclusion of STIs when health education pertaining to HIV/AIDS prevention is given (CDC 2007; WHO 2013). Similar to the findings about HIV/AIDS education set out above, most of the education on STIs has been found to occur at schools, with just minimal education shown to have taken place at the hospital (Tables 3 &4). This finding of minimal STI education in hospitals for boys who undergo male circumcision is critical as it affirms an argument raised by Mulaudzi (2007) regarding a vacuum that is yet to be filled as a result of a shift from traditional to medical practices. Nonetheless, the WHO (2009) and Mangena *et al.* (2011) acknowledge the importance of the educational role played by traditional male circumcision, which is lacking in medical male circumcision.

Although the findings of this study show that the participants had some knowledge regarding the signs and symptoms of STIs as well as the types of STIs, the main concern is those participants who were not familiar with the signs and symptoms of STIs as well as the various types of such STIs. The literature (Mulaudzi 2007; Ladzani & Sengani 2011; Khau 2012) has already shown a limitation with regard to education of this nature where both health workers and teachers are challenged by their cultural distinctiveness. This assertion advocates for a curriculum that is of culture congruent care and that will contribute to the prevention of HIV/AIDS and STIs.

Limitations of the study

The study included boys who belong to the Vhavenda ethnic group; however, there were boys who were of other ethnic groups who were excluded from the study. Time was a constraining factor in completing the questionnaire through face-to-face interviews before the procedure of medical male circumcision. This process was expected to be hurried in order to match the pace of the medical male circumcision process. This is a limitation as it might have compromised the quality of data collected. Furthermore, the data could only be collected prior to the participants being sent to theatre and not post-surgery as stipulated by the vhavenda tradition that after recovery initiates are immediately taken home by their guardians.

Recommendations

The collaboration of healthcare workers with primary and high school teachers on the provision of education on HIV/AIDS prevention could result in more positive outcomes achieved, which might result in a reduction of the burden of the HIV pandemic (WHO 2009). There is a need for reorientation, sensitisation

and training of healthcare providers on the importance of health education regarding HIV/AIDS, STIs and the role of male circumcision in HIV/AIDS prevention, which is critical to the reduction of the HIV/AIDS burden. Of importance to note, however, is the consideration of culture-congruent care with regard to the provision of health education regarding HIV/AIDS prevention to boys who undergo medical male circumcision. Furthermore, effective collaboration amongst the health care providers and the teachers could also help in curbing the HIV/AIDS pandemic.

Recommendations for further studies

The findings of this study suggest a need to determine the challenges from health care providers with regard to the provision of health education on HIV/AIDS among boys who undergo medical male circumcision. The fact that none of the participants received health education about HIV/AIDS prevention from the hospitals points to a need for further studies on the factors contributing towards the failure to provide health education on HIV/AIDS prevention to boys undergoing medical male circumcision in hospitals.

Furthermore, the fact that young people are largely affected by the burden of STIs and HIV/AIDS cannot be ignored; however, it is a critical group as already shown by literature. Of concern is that there is limited South African literature pertaining to young people from the age of 12 years that addresses the burden of STIs, which suggests the need for further studies in this regard.

This study covered only the Vhembe district in Limpopo Province as a target population. There is a need to expand the study to cover all other provinces to assess whether there is provision of health education on HIV/AIDS to boys undergoing medical male circumcision. The study also looked at boys between the ages of 12 and 21 years. There are boys under the age of 12 and men above the age 21 years who undergo male circumcision and it would be interesting to know their knowledge and attitude regarding male circumcision, STIs and HIV/AIDS.

Conclusion

The findings of this study suggest that there are best practices about sexuality education that can be learnt from traditional male circumcision, which serve as important tools for HIV/AIDS prevention activities and even promote more acceptance of medical male circumcision. Thus, a great deal can be learnt from traditional male circumcision despite the safety concerns raised in the literature.

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