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The Open Public Health Journal

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RESEARCH ARTICLE

Views of Adolescent Girls on the Use of Implanon in a Public Primary Health Care Clinic in Limpopo Province, South Africa.

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Abstract:

Background:

Implanon is one of the contraceptives that protects women from falling pregnant for a period of 3 years. Levonorgestrel implants are perfect for adolescents who wish to have lengthy protection against pregnancy and for those who are not consistent in taking Oral Contraceptive Pills (OCP).

Objective:

The objective of the study is to investigate the views of adolescent girls on the use of Implanon as a birth control method.

Methods:

A qualitative explorative and descriptive study was conducted to explore and describe the views of adolescent girls regarding the use of Implanon as a birth control method at a primary health clinic in Limpopo Province. In-depth interviews were conducted with 15 adolescent girls who had previously used the Implanon and voluntarily agreed to participate in the study. Data were analyzed using the Tesch's open coding analysis and the following themes emerged: views of adolescent's girls on the use of Implanon, experiences of adolescent girls while using Implanon, health professionals and the insertion of Implanon and other chronic treatments.

Results:

The study reveals that the lack of trained health professionals, competency in performing Implanon insertion and poor counseling skills by health professionals prompted fear amongst the adolescent girls, which contributed to the low uptake of adolescent girls of the Implanon contraceptive.

Conclusion:

There is a need for more training of health professionals on counseling skills, insertion, and removal of Implanon. Furthermore, awareness campaigns or dialogues must be hosted annually to engage the public to talk about Implanon.

Keywords: Views, Adolescent, Implanon, Health care professionals, Primary health care, Birth control method.

Article History	Received: Feburary 09, 2019	Revised: April 25, 2019	Accepted: May 09, 2019

1. INTRODUCTION

Unplanned pregnancies arise in 82% of pregnant adolescents aged between 15 and19 and 60% of pregnant young ladies aged between 20 and 24 [1, 2]. One effective way of reducing unplanned gestation is to ensure that sexually active adolescents use contraception methods correctly [3]. In addition, various authors indicate that using birth control, especially long-acting methods, such as implants, which are more efficacious and extremely cost-effective, could reduce the massive number of maternal death [3 - 5]. Contraceptive implants are widely known internationally as one of the most effective family planning techniques available [2, 6]. Levo-norgestrel implants are perfect for adolescents who want lengthy protection against falling pregnant, for those who do not want to visit the clinic often or have already had one pregnancy [3]. It is also an excellent contraceptive choice for women who are not consistent with taking Oral Contraceptive Pills (OCP) as prescribed. Furthermore, the implants are much more effective than short-acting alternatives [7, 8]. In addition , implants are reported to be the first line birth control method which holds specific benefits particularly to adolescents and young women. [9,10]. Moreover, the effectiveness of the use of

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condoms in conjunction with progestin implants must be emphasized, for protection against sexually transmitted infections [11].

In Africa and Europe, brief-time contraceptive period methods have been found to be the most common, whereas in Asia and north of the USA, long-term strategies, along with implants, Intrauterine Devices (IUCD) and permanent birth control are mostly used by women [12 - 14]. However, in India, where there are many disadvantaged young girls living in rural areas, access to effective medical methods of birth control, like Implanon, is difficult and, as a result, much less frequently used [14]. In South Africa (SA), Implanon NXT was launched by the Minister of Health, Dr. A. Motswaledi, in Gauteng province in Johannesburg at the Ethafeni clinic in February 2014, aiming to reduce unplanned pregnancies and maternal deaths [15]. Implanon has been available in all provinces and clinics since June 2014 and has an annual target of 320 000 [15]. Furthermore, in SA, Implanon is currently used to provide pregnancy prevention for three years. Research studies suggest that Implanon protection might be effective for five years, even in women with a high body mass index [16, 17]. Even though studies have proved the long-term protection, concern has grown about a sharp decline in the uptake of implants and the rise in the number of women returning for early removal of the implant, principally because of intolerance of the side effects [18]. In addition, a survey carried out by the Department of Health, Statistics South Africa disclosed that only a quarter of women of procreative age were using the implant by 2016 in all provinces, with the injectable contraceptive remaining the most common technique, accounting for 25% of contraceptive coverage [19, 20]. The low uptake in SA is influenced by the negative publicity received by the implant from the general public, health care staff and the media, especially with regard to its side effects [20]. This question is whether the implant is the most fitting and sustainable contraceptive method in South Africa. On the contrary in other countries like Kenya, there is a high uptake of contraceptives implants immediately after delivery by HIV-Infected and uninfected women. [21].

Vaginal bleeding is reported as the main reason for the early removal of the implant [22 - 24]. Other major shortcomings include headaches and difficulty in the removal of the implant [22, 25]. Based on the analysis of 11 international clinical trials, a total discontinuation rate of 32.7% was reported in a period of five years [26]. Furthermore, 64% of implants were removed because of abnormal/ unpredictable bleeding [27, 28]. In Nigeria, Implanon was also discontinued due to menstrual abnormalities [29]. Only a few studies examined the continuation rates of the contraceptive implant. In the UK, studies report continuation rates of the implant of between 67% and 78% [27]. In Australia, over 200 reports of unintended pregnancies associated with Implanon, occurred during the first three years' post-marketing [28]. In South Africa, the rate of removal of Implanon NXT was 90% in 2017 and it was due to the side effects especially bleeding and headache [18]. The aim of the current study is to determine the views of adolescent girls regarding the use of Implanon as a birth control method, to understand the reason for the low uptake of Implanon at a primary health care clinic in Limpopo Province.

2. MATERIALS AND METHODS

2.1. Study Design

A qualitative, explorative, descriptive and contextual research design was used to conduct the study. Through explorative design, the researcher was able to explore the views of adolescent girls regarding the use of Implanon as a birth control method. A descriptive design assisted the participants to describe their views about the use of Implanon as a birth control method based on their experiences and culture, in their own settings. One central question was asked: "What are your views regarding the use of Implanon as a birth control method?" This was followed by questions, which emerged from the discussion, and the questions from the interview guide. Participants expressed their views, which are reflected in words, and quotations used to emphasize various aspects that they described.

2.2. Study Setting

The study was conducted at a primary health care clinic in the Mopani District, Limpopo Province. The clinic is found in the Greater Letaba municipality, Mopani District, Limpopo Province. It is 35 km from Tzaneen and 10km from the Kgapane Hospital. It serves 8 villages.

2.3. Population and Sampling

The study population includes all adolescent girls aged between 17 and 24 wanting Implanon as a contraceptive method, as well as those who had the Implanon implant removed earlier than the anticipated period of 3 years. In addition, adolescent girls who were sexually active and who wished to insert Implanon but were afraid were part of the target population. Non-probability purposive sampling was used to select the participants from the Bolobedu clinic who met the criteria. The study sample size was determined by the information from the participants collected during one-on-one interviews.

2.4. Data Collection

Semi-structured, one-on-one interviews, using an interview guide were used to collect data. Semi-structured, one-on-one interviews encouraged the participants to provide information about their views on the use of Implanon and to respond to probes. To accommodate those who cannot speak or understand English, the interview questions were translated from English to Sepedi. Data were audio recorded, field notes and observations were made. Paraphrasing and probe follow-up questions were asked to facilitate and explore the discussions. Data were collected over a period of two weeks and data saturation was reached with participant number 15. Data saturation is when during data collection no new information is emerging [29, 30]. Data were subsequently transcribed. Documented information was linked with the transcribed data to avoid errors.

2.5. Data Analysis

Data were analyzed using Tesch's open coding analysis [31]. It involves reading through the transcriptions of each interview to get the meaning, grouping similar topics together, categorizing and summarising the data and describing them in meaningful terms until the themes and sub-themes emerged.

2.6. Trustworthiness

Trustworthiness was ensured through the following: credibility, transferability, conformability, dependability. Credibility was ensured through prolonged engagement in the study field in order to capture the realities [31]. Dependability, which refers to the consistency of the research findings in qualitative research, was ensured by describing the research method used in the study [31]. Transferability, which refers to whether the findings of the research can be transferred from one specific situation to others, was ensured by using a purposive sampling technique [31]. To ensure conformability, copies of the verbatim scripts, field notes, and protocol were sent to an independent coder for analysis.

3. RESULTS

Themes and sub-themes in Table 1 reflect the views of adolescent girls on the use of Implanon.

Table 1. A summary of the themes and sub-themes that reflect the views of adolescent girls on the use of Implanon

Themes	Sub-themes
1. Experiences of adolescent girls of the use of Implanon.	1.1. Knowledge *versus* myths related to Implanon. 1.2. Description of the perceived benefits of Implanon. 1.3. An outline of Girls fears and reasons for early removal of the Implanon implant 1.4. The description of Implanon and (Antiretroviral) ARV's result in drug interaction side-effects
2. Facts related to health professionals and parents in relation to the insertion of Implanon	2.1. Lack of proper counseling prior to Implanon Insertion. 2.2. Training of nurses on the insertion and removal of Implanon. 2.3. Health professionals and parents blamed for early removal of Implanon.

Theme1: Experiences of Adolescent Girls of the use of Implanon

From the transcription and analysis of the interviews, it became clear that there is a number of experiences faced by adolescent girls during the use of Implanon.

Sub-theme: 1.1 Knowledge Versus myths Related to Implanon

The following reflections indicate that some participants knew little about Implanon and that they needed an explanation on the way Implanon works. The following extracts from the participants support the statement above:

A participant asked: "*What is Implanon? Is it a needle or something that they put in the arm? Oh, I see, I heard that is not good at all, most of the people will tell you if it can be lost inside your body. I will never use it because I do not want problems.* "

Another participant said, "*Yes I know Implanon, that birth control that protects for 3 years but I will never advise anyone to use it because I heard that is bad and me too I will never use it, even if the sun can rise where the sunset I will never.*"

Sub-theme 1.2: Description of the Perceived Benefits of Implanon

Those who inserted Implanon seem to enjoy it as they no longer had to visit the clinic frequently and they could plan for their future because it protected them from falling pregnant for up to 3 years. They thought it was good to use Implanon because it meant that, as young girls, they could complete school. They also realized that it could reduce teenage pregnancies.

Participants said: "*For me, Implanon it works good, it has reduced my time to go to the clinic often and plus I was forgetting the return date*."

Another participant on Implanon, and with 2 children, aged 1 and 3, said: "*Implanon is a way for people like us who has a lot of children at a young age, it will help us to plan for our future."*

Further, another participant answered: "*Implanon is good because we will be able to complete school without having a baby. If you know what you want in life Implanon is the way.*"

Sub-theme: 1.3 An outline of Girls' Fears and Reasons for Early Removal of Implanon

Most of the girls were afraid of having Implanon inserted because they were afraid that it might get lost in their bodies or that it might damage their arms. In addition, there are rumors that Implanon that you can fall pregnant while on Implanon and that the arm fitted with Implanon will swell when doing house chores. Moreover, those who had the Implanon removed early also specified that fear and irregular menses, weight loss, severe headaches, and weight gain were reasons for early removal.

One participant said: "*Joh, I removed Implanon because I could feel in my arm that it was broken into two pieces and I was afraid that it will no longer work properly."*

Another participant said: *"I removed Implanon because I was seeing periods always, and I also gained a lot of weight, joh, it was making me have a headache."*

Another participant added: *"I regret using Implanon look at me, how I am since I started using this thing I lost weight and I am becoming like a living ghost and I always see my periods even when it was not due, I hate that so-called Implanon."*

Sub-theme 1.4: Description of Implanon and ARV (Antiretroviral) is Resulting in Drug Interaction Side Effects

The findings indicate that there are some are

disappointments because Implanon does not accommodate those who are on ARV's. There is also an incidence of pregnancy reported by one of the participants on ARV's and using Implanon. This is one of the reasons many young girls are afraid to insert Implanon.

To quote a participant: "*Am very much disappointed in Implanon, I inserted it with love but after some weeks of insertion we were called back to the clinic and I was told that because am on ARV's I should use a condom consistently if I don't, I have to go to the hospital to be inserted something called IUD which I don't even know about, I can't imagine the pain of removing Implanon and the pain of inserting another device again."*

Another participant said: "I *want to insert Implanon but the problem is that am taking fixed-dose combination antiretroviral, am afraid I will fall pregnant because I was told that if you are on ARV you cannot choose Implanon for contraceptive*."

Theme 2: Facts Related to Health Professionals and Parents in Relation to the Insertion of Implanon

From the transcription and analysis of the interviews, it became clear that there are a variety of experiences faced by adolescent girls during the use of Implanon.

Sub-theme 2.1: Lack of Proper Counseling Prior to Implanon Insertion

The study findings reveal that counselling prior to the insertion of Implanon seems to be poor.

A participant said:" Girls who removed Implanon before 3 years did not get full information on the first day on how the Implanon works and what will happen later."

Another participant added: "If I was informed well about this Implanon I couldn't have agreed when the nurses advised me to insert. Before I removed the Implanon I used to bleed almost every week and I couldn't even have sex with my partner."

Sub-theme 2.2: Training of Nurses on the Insertion and Removal of Implanon

Poor quality training of nurses on the insertion and removal of Implanon plays a role in the low uptake of Implanon insertion. Some participants reported that they wanted to insert Implanon but every time when they went to the clinic the nurses said, they were not trained to insert it.

One participant says: "*It's not like I don't want to use Implanon, I went to the clinic several times but some nurses said that they are not trained to insert so they don't want to do mistakes."*

Many participants who had had Implanon inserted wanted to have it removed but nurses refused to remove it, saying that they were not trained in its removal.

One participant is quoted, saying: *"This thing is not working mmhhm nurses should just stop inserting because they are still coming to remove before 3 years, there are problems here especially with nurses, I don't think they know how to insert the Implanon."*

Another young girl added: "*This Implanon is not working they must just stop it because sometimes nurses in this clinic refuse to assist us they will tell you that they don't know how to insert the Implanon."*

Sub-theme 2.3: Health Professionals and Parents Blamed for Early Removal of Implanon

The findings reveal that teenagers do not have a choice of the type of contraception they want to use. Health professionals and parents play a role in the removal of Implanon and some participants had it removed because they were forced to insert Implanon by their parents.

To quote one participant: *"I didn't want Implanon I inserted it because my mother forced me to used it, mmhhm so I used it to please my mom and then I went back to remove it without her knowing."*

Additionally, another participant said: "N*urses should just stop choosing contraceptives for us. I was told that as the quote, "I am inserting you Implanon you are still young and I want you to finish school." So I didn't have a chance to say no because she was going to say am disrespecting her."*

4. DISCUSSION

The discussion based on the findings of the study is centered on the following four themes:

4.1. Experiences of Adolescent Girls of the Use of Implanon

The study reveals that adolescents experience several side effects when they are on Implanon. These include weight gain, irregular menses, and some complains of weight loss. The study also found that the side effects differ from individual to individual, with irregular bleeding being the most common side effect mentioned. These findings are supported by different studies, which report that most women discontinued Implanon because of emotional liability, weight gain, depression, acne. However, while some discontinue Implanon because of the side effects, some discontinued for no apparent reason [32 - 34]. Lack of effective treatment of irregular bleeding has been outlined as the primary justification for the early removal of Implanon amongst adolescents [35]. Nevertheless, the study carried out by Patel indicates that girls who experience hemorrhage patterns discontinue the implant partly because they were not properly counselled prior to and post insertion [35].

The study also reveals the knowledge gap about Implanon and how it works. Moreover, the lack of knowledge contributes to the low uptake of adolescent girls of Implanon. The study of Elsenburg *et al.* reveals that women using short-acting contraceptives, such as pills, knew little about the use and effectiveness of the long-acting contraceptives [36]. In contrast, some adolescents knew about the use of Implanon. They describe Implanon as one of the most effective contraception methods as it means that they do not have to visit clinics frequently because it protects them from falling pregnant for up to 3 years. Additionally, they said Implanon enables them to plan for their future and finish their schooling

without worrying about an unplanned pregnancy. Similar results in a literature review study reveal that women like the implant as it has long-term benefits for family planning for them as individuals and their families [37].

The adolescent girls who might like to use Implanon were afraid because of the myths and the presumed experiences of the previous users. They alleged that they had heard that Implanon might get lost in their bodies which might result in an unplanned pregnancy, regarding and that the arm might swell while doing household chores. Similar to the current findings, previous studies also reveal that there are rumors and misconceptions specifically on the side-effects and effectiveness of Implanon in preventing pregnancy [38 - 42] Merck, the manufacturer of Nexplanon, notes that reported pregnancies amongst implant users have been primarily due to unrecognized pregnancies at the time of insertion or failure to insert the device properly [35]. In a similar context to this study, an informal investigation conducted by the Bhekisisa Centre for Health Journalism in SA, Mpumalanga reports that it was rumoured that poor outcomes of the use of Implanon could also be because of poor training of nurses, which has led to severe reactions of girls using new contraceptive devices [43,44]. Furthermore, it also documents that in Mpumalanga Vukuzahke clinic nurses are no longer inserting Implanon but only removing them [45]. Consequently, the reported pregnancies could be associated with the following factors, which might contraindicate Implanon use: epilepsy, infectious diseases, such as pulmonary tuberculosis, antiretroviral medication, poor screening and different lifestyle factors like abuse and alcohol consumption [46].

Participants on ARV's were disappointed because health professionals informed them that the Implanon would not suit them. One participant also believed she had conceived a few weeks after the insertion of Implanon because of the use of ARVs. According to the clinical guidelines in South Africa, Implanon is a progestogen that has several interactions with certain drugs especially in women who are HIV positive. Although the use of condoms is crucial, antiretroviral therapy can lead to drug interactions and modify the efficacy of hormonal contraception. Implants should be used with caution in patients on Efavirenz [47]. Research in South Africa confirms that nurses have strong preferences about the methods that are appropriate for women, especially those who are HIV-positive, unmarried, and/ or young [48, 49]. However, in the study carried out on the interactions between hormonal contraception and antiretroviral therapy, even though there were several case reports of contraceptive disappointments from women taking Efavirenz, there were no actual data indicating low efficacy of the implant while co-administrated with HAART [50]. Furthermore, it was recommended that pending the proven data for a good understanding of the interaction of medications. Implanon should remain accessible to women living with HIV. Health care professionals should counsel HIV-positive women wishing to use Implanon as a contraceptive about the importance of dual contraception [51, 52]. In contrast, in Kenya, information from roughly 25 000 HIV-positive women using the implant and EFV primarily based ART had three times the possibility of becoming pregnant than women using nevirapine-based ART [44]. Authors in combined information from seven African countries who found minimized effectiveness among women using EFV-based ART and the implant [53] have supported this.

4.2. Factors Related to Health Professionals and Parents in Relation to the Insertion of Implanon

The study results indicate that adolescents experience challenges concerning informed consent and confidentiality from health care professionals. This was evidenced by adolescent girls who stated that they did not have freedom of choice as to the kind of contraception method they wanted to use. They stated that their parents and health care professionals were the ones who chose contraceptives for them. In South Africa, the Children's Act [54] outlines that contraception may be supplied to children on request, without parent permission; from the age of 12 and further that, they are also entitled to confidentiality. Adolescents should utilize contraceptive implants confidentially to prevent parental interference and to improve adherence rates [55, 56].

The world movement that supports the rights of women and girls to choose freely for themselves about how many children they want to have, states that it is of great importance to defending the human rights for women and girls [57]. Additionally, the movement further emphasizes that there should be policies and mechanisms to confirm informed selection from a broad range of high quality, safe, effective, acceptable and reasonable contraceptive methods; fairness and the assurance that women and girls are enlightened and not coerced in any way [58]. However, arguments have been raised that young girls are still growing and developing and may not really be able to know clearly and make educated calls about something as important as contraception. They may also be unaware of the potential consequences of their actions. They should be able to debate the issue in an honest way with a parent before making a decision [59].

Poor quality training of nurses on the insertion and removal of Implanon plays a role in the low uptake of Implanon insertion. Participants reported that they did want to have Implanon inserted but every time when they went to the clinic health care professionals turned them away saying they were not trained to insert Implanon. In a qualitative study on understanding the low uptake of long-acting reversible contraception by young women in Australia, it was found that health care professionals had difficulty in accessing long-acting reversible training and, for those who received training, there was little support or follow-up. This made it difficult for them to maintain competency in inserting the long-acting reversible contraception [60]. In South Africa, the Deputy Director of the Department of Health has openly admitted that Implanon education provided to the health professionals might not be adequate, resulting in counselling services which might not be up to standard [45].

Adolescent girls who removed the Implanon before 3 years indicated that if they had given insertion proper consideration beforehand, they would have opted for other contraceptives. The results are in line with the study, which was conducted in the rural area of Tigray Region, Northern Ethiopia, exploring the prevalence and predictors of Implanon utilization among

women of reproductive age. The study discovered that most women had inappropriate information about Implanon and recommend that well-being extension workers and other health professionals should offer proper counseling and education about Implanon and other contraceptives [52]. A previous literature review study on the barriers to fertility regulation report that misinformation about contraceptive methods, health issues, language challenges, and health care provider biases are the most common barriers to the initial uptake of Implanon [61]. The SA contraception and fertility planning policy and services outline that women ought to have access to "accurate, unbiased information concerning all offered methods of contraception so that they can make informed decisions subject to meeting relevant medical eligibility criteria and availability [62]. It is extremely important that adolescents in search of contraception are given all of the relevant facts prior to the insertion of an implant, and also that health professionals consider their approach and the environment in which counselling is provided [57]. Furthermore, rich and relevant information will enable clients the time to independently study and reflect on whether or not they wish the implant to be inserted [57, 63]. Considering the high usage of technology of adolescents [64 - 66] it has been documented that health care professionals should consider the use of novel approaches and technologies such as interactive, internet-based sources of information, text message reminders for renewal as well as pamphlets for improving women's understanding on how various methods work. This might improve the method uptake and continue to improve knowledge and compliance.

Of note, a study across many Sub-Saharan African countries emphasizes the importance of competency-based coaching on Implanon. The content should include the side effects, management, and regular necessary refresher courses and mentorship should be considered [67]. Further, it has been documented that these efforts would boost the self-confidence of health professional in the insertion and removal of implants. Furthermore, during follow-up training, it was observed that none of the trained health professionals refused to remove the implants [68, 69].

CONCLUSION

Protecting teens' confidentiality is essential because existing fears around parental disclosure may act as a barrier to reproductive health care. There is still a huge knowledge gap in the understanding of Implanon and its advantages and disadvantages. A lack of sufficiently trained health professionals also has a role to play in the low uptake of adolescent girls of the Implanon contraceptive. Incompetence in performing Implanon insertion and in counseling skills was also identified as one of the causes of fear and complications, such as unwanted pregnancies. There is a need for more training of the health care professionals on the insertion and removal of Implanon and in counseling skills. Follow-up training should also be offered to assess the competence of health care professionals. Health education by health professionals should be intensified, especially on initial visits for family planning. Adequate Information Education Communication (IEC) materials should be issued to clients to help disseminate information on the use of Implanon. The dissemination should be sustained and the information must be in the language the clients understand. Adolescent contraceptive counseling may require attention because of the unique concerns of adolescents about informed consent, confidentiality, and parental involvement. During counseling, health care professionals should include preventive guidance for adolescents and their parents or guardians, concerning potential menstrual changes, adverse effects, as well as non-contraceptive effects, such as management of irregular or abnormal uterine bleeding and the treatment of dysmenorrhea [70]. Awareness campaigns or dialogues must be hosted annually to engage the public in talking about Implanon. Furthermore, there is a need for evaluation of the effective usage of Implanon by the Department of Health in South Africa. The effectiveness of the use of Implanon by HIV positive women needs to be further explored and clear guidelines should be provided. Importantly, double protection should be emphasized by using Implanon and condoms to protect against sexually transmitted infections and pregnancy.

ETHICAL APPROVAL AND CONSENT TO PARTICIPATE

Ethical clearance was obtained from the Turfloop Research and Ethics Committee (TREC/80/2015: PG) and from the Limpopo Provincial Department of Health, Polokwane (Ref 4/2/2).

HUMAN RIGHTS AND ANIMAL RIGHTS

No animals were used in this research. All human research procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation (University of Limpopo and National Standards).

CONSENT FOR PUBLICATION

The researchers obtained informed consent, in writing, from participants before conducting the semi-structured interview sessions. The participants were also informed that the results will be published and that their identity will be protected.

AVAILABILITY OF DATA AND MATERIALS

The data sets used during this study are available on request for the readers from the corresponding authors.

FUNDING

None.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

ACKNOWLEDGEMENTS

The authors would like to thank all the participants for their participation in the study, as well as the Department of Health, Limpopo Province for allowing the researchers to conduct the study.

Rabopape LE is responsible for the conceptualization of the research study, data collection, design, analysis and finalization of the article; Malema RN, supervised the research

project; Muthelo L drafted, conceptualized and wrote up the article and Mothiba TM, also supervisor of the research project, drafted and finalized the article.

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