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RESEARCH ARTICLE

Nurses' Perceptions About Stock-outs of Essential Medicines at Primary Health Care Facilities in Vhembe District, South Africa

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Abstract:

Background:

The development of generic medicines that are cost-effective and affordable aims to facilitate improved availability of essential medicines to meet the health care needs of the majority of the population. However, these essential generic medicines are not regularly available at the community health centres and clinics.

Aim:

This study aimed to determine the perceptions of professional nurses regarding the status of stock-outs of generic medicines at primary health care health facilities in a selected province of South Africa.

Materials and Methods:

The study was conducted in five primary health care facilities; three clinics and two health centres in Thulamela B municipality of Vhembe District, Limpopo Province.

A qualitative, exploratory, descriptive and contextual research design was used to obtain the perceptions of the participants. Thirteen professional nurses were purposively selected. Data were collected through face-to-face in-depth interviews until data saturation was reached. Data were analysed using Tesch's open coding method.

Results:

Key findings showed that essential medicines were not always available, with the health centres reporting fewer stock-outs than clinics. The perceived major contributors to stock-outs were institutional inefficiency and practices by both health service providers and patients.

Conclusion and Recommendations:

The study concluded that primary health care facilities in rural communities still grapple with poor access to essential medicines due to poor availability. Therefore, the provision of sufficient funding for procurement, and training of inventory management practices were recommended. In addition, community public awareness campaigns to discourage patients' self-medication and multiple consultations should be put in place.

Keywords: Essential medicines, Stock-outs, Perceptions, Primary health care facilities,, Funding for procurement, Inventory management practices.

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1. INTRODUCTION

The availability of essential medicines has been described as one of the eight elements of Primary Health Care (PHC) [1]. Essential medicines are defined by Chen *et al.* [2] as those that satisfy the health needs of the majority of the population, intended to be always available at health facilities in correct dosage forms, and at a price that the community and individuals can afford. Consequently, generic drugs were developed as part of efforts by the World Health Organisation (WHO) to make essential medicines more available and accessible to the populace [1 - 3]. Despite the adoption of the essential medicine concept, its goal of advancing health equity

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by identifying cost-effective drugs for priority conditions is unmet. Quick [1] confirmed that in resource-constrained developing countries, poor availability of essential drugs at health facilities is still experienced [2, 3]. At primary health care facilities, generic medicines are prescribed. Generic drugs are identical to brand name drugs in dosage form, strength, safety, route of administration, quality, performance characteristics and intended use. Generic medicines are efficacious, cost-effective and affordable, compared to the original brands, to meet the health care needs of the majority of population [4, 5]. PHC facilities, community health centers and clinics are the first level of contact for individuals, in the community with the national health system, which brings health care as close as possible to where people live and work. These facilities have been established to ensure that citizens receive health services at the local level [6]. Essential medicines are therefore expected to be available all the time at the clinics and health centres, with the lower level of health care institutions being the closest to the people in the community.

The unavailability of essential medicines is a global challenge, as evidenced by different reports from the United States, Europe and China [2, 7, 8]. Recent essential drug surveys by the WHO/HAI in 39 low and low-to-middle income countries found average availability to be and 56% in the private sector Wangu and Osuga [9] compared to the 80% drug availability benchmark by WHO [10]. In different African countries such as Nigeria, Mozambique and Uganda, limited availability of some essential generic drugs had been reported. A study conducted in Kenya by the Health Action International Africa revealed that essential medicines are available in only 50% of lower-level health facilities (clinics and health centres) [11]. Several factors including inadequate budgetary allocations for drugs procurement, poor stock control in supply chain processes, poor quality drug formulations not containing the minimum required ingredients for effectiveness, poor value for money, uncoordinated government action and local non-availability of quality generic drugs have been stated as contributors to drug stock-outs at the PHC facilities by different authors [12, 13].

In the Republic of South Africa, the health system structure has the primary, secondary and tertiary levels of care [14].The community health centres and clinics are the lowest tier of the public health system in the District and they are out-patient facilities. The community health centres generally are larger in terms of infrastructure, human and other resources. They are expected to also serve the community clinics in their community. The health centres are open twenty-four hours, unlike the clinics which are open for at least eight hours a day, five days a week. The scope of services rendered by these PHC facilities is immunization, mother and child care services, antenatal and include postnatal care, including family planning, sexually transmitted infections care, treatment of minor ailments and curative services, mental health, treatment of communicable and chronic diseases, oral health, rehabilitative services and provision of essential medicines. The South African government has put in efforts to improve the availability of medicines, patient access to essential medicines and to assist with decongesting public clinics, especially for patients on chronic medication. Worthy of mention are two pivotal efforts which are the establishment of the Office of Health Standard Compliance and the implementation of the Centralised Chronic Medication Dispensing and Distribution (CCMDD) [15, 16]. The Office of Health Standards Compliance initiative is a step to overcome drug stock-outs in all provinces across the nation [15]. This office is charged with the responsibility of inspecting public health facilities for six basic health standards which are: medicine stock-outs, waiting times, cleanliness, infection control, the attitude of staff, safety and security of staff and patients. This initiative buttresses the reality of drug stock-outs at health facilities across the country. The CCMDD program, on the other hand, is aimed at reducing patient waiting times at health facilities and is currently being implemented in the 11 NHI pilot districts of the country [16]. An expected outcome of the implementation of this program is that chronic stable patients in the public sector will no longer have to travel long distances or wait long hours for their medication.

At the PHC facilities, the end-to-end ordering process of medicine from the medical supplies depot through the hospital pharmacy and lastly to health facilities is presented below, as summarised by the Public Service Commission [17].

1. The PHC facilities place orders through the District or referral hospitals.

2. The district and referral hospitals submit the consolidated orders, including theirs, to the Medical Supplies Depot (MSD) for processing.

3. The MSD delivers such orders directly to the clinics.

This ordering schedule summarised above has implications for the current study. Despite government efforts and programs in South Africa to ensure consistent essential drug availability at the health facilities, many districts in the RSA have reported that health facilities do not have essential drugs in stock. Survey results from different districts and provinces in the country indicated that drug stock-outs at the health facilities was a perennial challenge especially at the lower level facilities, clinics and health centres [17 - 20] Since 2014, Vhembe District has been serving as a pilot district for the National Health Insurance (NHI) plan in the RSA as part of phase 1 of the NHI implementation. As a pilot district, the CCMDD program is also implemented at the health facilities to ensure consistent essential generic drug availability as one of health care delivery indices.

1.1. The Purpose of the Study

This study aimed to determine nurses' perceptions about the status of essential medicine stock-outs at public health care facilities in Vhembe District, South Africa.

2. THE STUDY OBJECTIVES

The study objectives were to explore and describe the perceived factors contributing to stock-outs of essential medicine at primary health care facilities in Thulamela B Municipality, Vhembe District, Limpopo Province. For the purpose of this study, essential medicines referred to the first-line treatment for chronic non-communicable conditions,

communicable disease, human immunodeficiency virus and acquired immune deficiency syndrome (HIV/AIDS) and vaccines.

3. METHODOLOGY

3.1. Study Design

Based on the purpose of the study, a qualitative, exploratory, descriptive and contextual research design was used in order to allow the participants to share their views and first-hand experiences about the topic [21]. Participants were interviewed in their natural setting, where the dispensing and ordering activities took place daily [21, 22]. This research design adopts a flexible questioning approach that produces quality information as it allows for a deeper understanding of the subject matter until data saturation is reached.

3.2. Study Setting

The study was carried out in the Thulamela B Municipality which is located in Vhembe District, a large, mainly rural (76%) district, situated at the northern part of the Limpopo Province. Thulamela Municipality is divided into; Thulamela A (Malamulele area), based in the Eastern part of the district and Thulamela B (Thohoyandou area). The focus of this study was Thulamela B Municipality which is further divided into 3 local areas, namely; Sibasa, Shayandima and William Eddie local areas. There are 24 clinics and 2 health centres under Thulamela B municipality and they are provincially owned.

3.3. Target Population and Sample

The population comprised all professional nurses working at the 26 PHC facilities (24 clinics and 2 community health centres) in the Thulamela Municipality during the period of data collection. Non-probability, purposive and convenience sampling was used to sample PHC facilities and participants from the population. Five PHC facilities were purposively selected based on the three local areas (Sibasa, Shayandima and William Eddie) in Thulamela Municipality B based on the highest and lowest headcount for the month of May - August 2015 (Table **1**). The justification for the use of headcount was based on the assumption that there is a need to verify if PHC facilities with high patient headcount will experience more medicine stock-outs compared to the PHC facilities with a low patient headcount. The 5 selected facilities were 3 clinics and 2 Community Health Centres (CHCs) as highlighted in Table **1**.

At the PHC facilities, due to the scarcity and the absence of sufficient medical doctors, pharmacists and Pharmacy Assistants (PAs), as well as professional nurses carried out the following tasks; consultation, prescription, dispensing and ordering medications for use. Sampling of participants was purposively done. A total of 20 professional nurses from the selected five PHC facilities were envisaged, however, the sample size was 13 as determined by data saturation, where no new information was obtained. Each PHC facility had a minimum of 6 professional nurses; only professional nurses who were on duty during data collection were included in the study. The inclusion criteria were registered professional nurses working at selected PHC facility, consulting and dispensing medicine and with at least two years of working experience.

3.4. Data Collection

Data were collected over a 10-day period in the month of June 2016. In-depth interviews using a semi-structured guide were conducted by the same interviewer, who was the principal researcher. The interview guide was written in English, with a central opening question and probing questions. The central opening question was - *How would you describe the availability of essential medicines at your primary health care facility?*

The follow-up analysis focussed on essential medicines kept, factors affecting the availability of these essential medicines, duration of stock out, the procedure of ordering of medicines at the facility, any standard ordering procedure and processes of inventory control management carried out in a facility, training on inventory control and medicine management conducted, any supervisory visits from the district hospital and or district office, suggestions to reduce medicine stock-outs and improve consistent availability of essential medicines at the primary health care facility. The interviews were conducted in English and held during lunch in the nurses' lounge and lasted about 30 - 45 minutes per participant. Data saturation was reached at the point when there was no new information provided by the participants during the interview. The interviews were audio-recorded and transcribed by the principal researcher. The project supervisors (MS and JT) who are experienced qualitative researchers checked the transcripts to ascertain the accuracy of data. The duration of work experience ascertained that the participants will be knowledgeable about the phenomena studied.

3.5. Data Analysis

Tesch's open coding method was used to analyse the data. The interviews were transcribed by the principal researcher and analysis was carried out by selecting one interview transcript at a time, making a list of topics, clustering together similar topics, abbreviating the topics as codes, looking for the most descriptive wording, making the final decision, grouping data belonging together into categories and creating themes while also recoding existing data [22]. The co-supervisor (JT) served as an independent coder hence she was provided with an organized set of transcribed data to help identify categories, themes and sub-themes. Discussions were held by the researcher and her supervisors to reach a consensus about these. The themes and sub-themes generated from the collected data were analysed and presented in a report (Table 2).

3.6. Trustworthiness

The criteria for ensuring trustworthiness were observed [23]. Credibility was ensured by prolonged engagement with the participants, by visiting the PHC facilities prior to the conduct of the interviews. The scheduled visits enabled the researchers to become familiar with the participants during the interaction and the interviews. This assisted in building a trusting relationship with the participants. The researchers had contact with the participants during the appointment making

session and data collection. Field notes were taken during the interviews to record findings, hence providing a suitable record and a voice recorder was used. Transferability was ensured by the provision of a detailed description of research methodology. Member checking was also conducted by engaging the participants after the interview to confirm the responses provided during the interview, to validate the truth and confirm the results.

3.7. Ethical Issues

The University of Venda Ethics Committee provided the ethical clearance (SHS/16/PH/10/1304) to conduct the study. Permission from the Limpopo Provincial Department of Health (Ref 4/2/2) and approval from the Vhembe District Department of Health (Ref S5/2/5) were obtained. The five (5) facility managers were contacted for permission and to make appointments that facilitated meetings with the participants. The interviewees were informed about the study purpose and objectives stated in an information sheet. Informed consent was obtained in writing from participants after the content of the information sheet was provided prior to conducting interviews. Permission was obtained from the interviewees to use a voice recorder during the interviews. The participants were informed that participation was voluntary and that the confidentiality of their information would be ensured. Numerical codes were used instead of participants' names and alphabets were used for the PHC facilities to ensure confidentiality and anonymity; therefore, the identity of the participants and health facilities were kept confidential.

4. RESULTS

The findings are presented based on emergent themes and sub-themes.

4.1. Participants' Socio-demographic Information

Eight of the participants were from clinics, while the other five were from health centres. The ages of the participants ranged from 29 - 58 years, the median age group was 39 - 48 years (n=6) and the majority of participants were females (92%, n=12). All had a basic professional nursing degree (B.Cur). A third had additional post-basic qualifications (39%, n=5), of which, about a quarter had Post basic Diploma in Health Assessment, Treatment and Care and possessed dispensing certificate which allowed them to prescribe drugs (23%, n=3) while a few had Post-basic Diploma in Education and Administration (15%, n=2) despite holding supervisory positions at work. More than half of the participants had working experience ranging between 10 - 19 years (69%, n=9) while more than three-quarters held supervisory positions at work (85%, n=11).

4.2. Theme 1: Status of Medicine Stock-outs

This theme summarises the participants' experiences on the status and duration of stock-outs and the medicines which were out-of-stock at the time when this research was conducted. Participants described a varying level of medicine stock-outs, experienced at the PHC facilities with the health centres having better availability compared to the clinics.

> 'Hmmm…this facility is much better than other clinics in having treatments, because the patients are coming from surrounding villages, far away from Vhembe, like Elim, Nzhelele, Vhumbedzi, Mutale areas coming and we question them; they tell us that they visit our facility because there are no treatments in clinics close to them'. (Participant 4, Health centre)

Furthermore, all the participants from the clinics concurred that first-line drugs for chronic ailments like high blood pressure and diabetes were not always available and the stock-out period ranged from a few days to several weeks.

> 'Enalapril has been unavailable for 2 weeks now in this clinic and even hydrochloro-thiazide tablets in 4 weeks'. (Participant 10, Clinic).

This was supported by another participant from another local area (Shayandima).

> 'We have not had hydrochlorothiazide tablets for 2 months now'. (Participant 2, Clinic)

At the time of conducting this research, the out-of-stock drugs included Hydrochlorothiazide tablets, Enalapril tablets, Rifafour tablets, Metformin tablets, Actrapid injection, BCG vaccine, Hexazim vaccine, antibiotics such as amoxicillin capsules and Gelusil tablets. These are essential drugs for chronic conditions in addition to antibiotics and vaccines.

One of the participants said with emphasis:

> 'We have not had Metformin tablets for diabetes and hydrochlorothiazide for high blood pressure in this clinic for about four weeks'. (Participant 5, Clinic)

4.3. Theme 2: Structure Related Factors

Structural factors that relate to procedures within the organizational structure contributing to the unavailability of essential generic drugs at the PHC facilities were described by the participants. They reported activities such as inappropriate selection, insufficient funding and inadequate distribution as contributory factors. The factors ranged from management and administrative concerns, supplier-distribution constraints, institution-based challenges to the shortage of human resources. The comments from the participants are highlighted Structure Related Factors below.

> 'I don't think phasing out of some medicines is a wise decision because they do not involve us, like Gliclazide tablets; we just found that the medicines are no longer available when we

ordered from the depot'. (Participant 1, Clinic).

Another participant commented as follows regarding funding:

'You see because the financial year starts in April, we are having medicines now because this is June but soon before the end of the year, the medicines will not be there again and you wonder if there is sufficient money for procuring these treatments'. (Participant 11, Clinic)

The distribution and transportation challenges were also highlighted:

'I think that the depot does not have enough vehicles to deliver orders on time because the orders take long before they are supplied" (Participant 8, Clinic).

'A lack of a dedicated van for each facility affects picking up of orders from the hospital, even when you phone the hospital they tell you that your order is ready but there is no transport to deliver it to your facility'. (Participant 6, Health centre)

Dissatisfaction arising from insufficient number of pharmacy assistants to assist with ordering at the clinics was expressed:

'There insufficient manpower contributed to poor ordering of drugs from the medical depot through the district hospital, more-especially because orders are compiled manually at the clinics, eish we suffer a lot. We never order on time'. (Participant 13, Clinic).

Participant further said

"You find that the person ordering is ignorant and not order properly. Some treatments are not in the facility yet the person ordering does not request from the hospital pharmacy in the medicine order form"…Participant 13, Clinic).

4.4. Theme 3: Human Related Factors

Participants mentioned practices by service providers and patients that are contributory to drug stock-outs at the facilities. The practices by service providers mentioned were inadequate training and poor adherence to standard treatment guidelines, poor quantification of orders resulting from the use of estimations instead of standard methods and irrational, inappropriate prescription habits. The clinics reported a lack of use of standard ordering methods while the health centres used the consumption method because of the presence of permanent pharmacists and PAs, hence reported better availability. The statements about poor dissemination of standard treatment guidelines included;

'Like before when we did not know the doses of some antibiotics because there were new guidelines, we turned back the patients saying no treatment but now we know this, after the pharmacist from the hospital came to explain to us' (Participant 12, Clinic)

The lack of the use of standard quantification methods to calculate reorder quantity highlighted:

'There is a formula for ordering but I don't know it, we just estimate and sometimes we order too little or overstock' (Participant 2, Clinic)

'Ha! We are failing to order on time in this clinic because when you are doing your normal work as a nurse, you still have to order treatment from the hospital pharmacy. We use a medicine order form to request medications from the depot and it can take a long time before the pharmacy assistant comes to collect our order forms'. (Participant 9, Clinic)

On the contributory role of patients, multiple consultations and demand for specific treatments at different health facilities by patients were described by the participants. The participants highlighted that despite the use of clinic booklets, patients register in many clinics and obtain the booklet for each, which enable them to consult and get similar drugs even on the same day from multiple PHC facilities. Clinic booklets are given to everyone who consults at the clinic. It contains personal demographic information.

'Some of these patients visit three or four clinics complaining of the same symptoms, using different clinic booklets, you see. These patients are very much cunning'. (Participant 9, Clinic)

The request for specific drugs by patients makes the patients prone to over-use and abuse.

'Patients sometimes request specific medicines and this leads to irrational prescribing especially the magogos (old ladies). They tell you that Brufen works well for the pain in their leg. We have to explain the side effects to them especially for ulcer and asthmatic patients before we give to them if they insist'. (Participant 2, Clinic).

Table 1. PHC facilities headcount in Thulamela B Municipality.

S/N	Sibasa Local Area	PHC Headcount	Shayandima Local Area	PHC Headcount	William Eddie Local Area	PHC Headcount
1	Dzingahe Clinic	8,749	Dzwerani Clinic	10,401	**Damani Clinic**	**5,122**
2	Fondwe Clinic	8,192	Lwamondo Clinic	13,439	Gondeni Clinic	5,814
3	Muragoni Clinic	3,301	Magwedzha Clinic	8,399	Makonde Clinic	10,759
4	Pfanani Clinic	9,635	Muledale Clinic	12,525	Mukula Clinic	8,627
5	Phiphidi Clinic	10,690	**Mulenze Clinic**	**6,791**	Sterkstroom Clinic	10,824
6	Sibasa Clinic	17,688	**Shayandima Clinic**	**14,521**	Thondotshivase Clinic	9,277
7	Tshififi Clinic	7,120	Tshisaulu Clinic	12,030	Tshiombo Clinic	8,034
8	Mbilwi Clinic	4,928	Tswinga Clinic	9,932	Vhufuli Tshitereke Clinic	10,167
9	**Thohoyandou Health Centre**	**31, 374**			**William Eddie Health Centre**	**11,058**

Table 2. Themes and sub-themes as nurses' perceptions about stock-outs of essential medicines.

Themes	Sub-themes
1. Status of medicines stock-outs	1.1 Health centre versus clinics 1.2 Duration of stock-outs 1.3 Medicines with frequent stock-outs
2. Structure related factors	2.1 Management and administrative concerns 2.2 Supplier - distribution constraints 2.3 Institution-based challenges 2.4 Shortage of human resources for health
3. Human related factors	3.1 Service-providers related 3.2 Patient-related

5. DISCUSSION

5.1. Status of Medicine Stock-out

The study findings revealed that medicine stock-outs remained a challenge in the municipality even though the clinics experience more stock-outs than the health centres. This was consistent with study findings from some African countries which revealed that lower units of health care facilities are associated with higher levels of stock-out rates compared to the higher units [24 - 27]. Lower health facilities, closest to the people, ought not to have essential medicine shortages. The current research findings show that the stock-out duration is in the range of 5 - 150 days and this validates previous survey results from developing nations [9, 26, 28]. The protracted stock-out duration worsened patients' conditions and facilitated achieving health for all, a mirage. On the other hand, poor availability of essential generic drugs for chronic conditions such as diabetes and hypertension and child health at PHC facilities remains a great challenge for developing nations despite the increasing burden of chronic diseases in these regions [9, 28, 29]. South Africa was not exempted from essential medicine shortages at the PHC facilities as revealed by this research and other research projects [18 - 20]. Additionally, however this research results served as an indicator of the readiness of the Thulamela B District for the NHI rollout.

5.2. Structure Related Factors

The availability of drugs at health facilities was guided through clearly outlined four processes: selection, procurement, distribution and usage of medicine in addition to management support which are inter-related in a cycle known as drug management cycle [30]. These processes formed the core of structural factors revealed by this study. This study showed that insufficient funding, inappropriate drug selection due to insufficient consultation with professional nurses, inadequate distribution and shortage of pharmacy assistants were contributors to drug stock-outs at the health facilities. Selection, funding, procurement and distribution are domiciled within government structures to ensure consistent availability. In congruence, different authors point out that uncoordinated government actions played a dominant role in the continued drug stock-outs experienced at the PHC facilities [2, 9, 30]. Human resources have been enumerated as a key performance driver within public health supply chains [31, 32]. Due to the substantial human resources crisis facing the health sector in South Africa, the primary health care system is mainly nurse-driven [33]. This study established that the presence of a pharmacist and pharmacy assistant at the health centres results in reduced stock-out rates.

5.3. Human Related Factors

Adequate training and supervision are drivers of an effective and efficient health system [30]. Service provider practices revealed by this study were a consequence of inadequate training on STGs, poor quantification methods and inept stock control at the clinics, akin to these findings are reports Nigeria and Uganda [13, 24]. The poor dosing practices shown by this study were not unlikely due to the fact that most of the professional nurses did not possess a dispensing certificate approved by the South African Pharmaceutical Council. Supervisor-related factors included the dissemination of new treatment guidelines without organising workshops

prior to the dissemination, contributing to irrational prescribing by the professional nurses.

Patients in developing countries generally are found not to use drugs appropriately and the tools for promoting the appropriate use of medicines are weak in such countries [34]. This study finding of irrational use of essential drugs by patients was evidenced by "drug shopping" and multiple consultations from one clinic to another. This undoubtedly affected the goal of ensuring the consistent availability of drugs at the PHC facilities. Various studies support these results, stating that patients' shop around, multiple consultations at different clinics and indulge in self-medication [18 - 20, 35] The misuse of drugs by patients are attributable to ignorance, lack of knowledge or insufficient information about the dangers of inappropriate use of prescribed drugs.

5.4. Limitation

The PHC facilities where the study was conducted were situated in rural areas; therefore the findings cannot be generalized to the entire Limpopo Province. However, a detailed description of the study was given, which gives the readers a choice to know about the generalizability of the study findings.

CONCLUSION

The study concluded that the nurses perceive that contributory factors to medicine stock-outs at the PHCs were broadly classed into two categories, namely; structural and human performance-related factors. The structural factors included, though not limited to the reliance on a cascade from depot to hospital to PHC facilities and reliance on nurses for dispensing medicines as opposed to dedicated pharmaceutical personnel, poor inventory control practices, inadequate transportation and multiple consultations by patients contributed to stock-outs at the facilities.

RECOMMENDATIONS

The shortage of medicine at the primary level of care remains a key determinant factor of health care services utilization and services uptaken by the community. An intervention of improved transportation and supply chain strengthening, with training on standard quantification methods for professional nurses to conduct better drug forecasting is recommended. Additionally, community awareness campaigns on the proper use of drugs and dangers of medication overuse are recommended.

Further quantitative study on the assessment of medicine availability in the Vhembe District is recommended as there are few reports of medicine shortage in this district; most stock-out reports from Limpopo Province are from Mopani District.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The University of the Venda Ethics Committee provided the ethical clearance (SHS/16/PH/10/1304) to conduct the study. Permission from the Limpopo Provincial Department of Health (Ref 4/2/2) and approval from the Vhembe District Department of Health (Ref S5/2/5) were obtained.

HUMAN AND ANIMAL RIGHTS

Not applicable.

CONSENT FOR PUBLICATION

Informed consent was obtained from all the participants prior to data collection.

AVAILABILITY OF DATA AND MATERIALS

The data supporting the findings of this research are available within the article.

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CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest, financial or otherwise.

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Declared none.

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