

# Exploration of NIMART-trained nurses' experiences in the implementation of integrated management of HIV and NCDs in Limpopo Province, South Africa

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## Abstract

**Introduction:** Integrated management of human immunodeficiency virus (HIV) and non-communicable diseases (NCDs) strives to merge the management of NCDs into existing executive approaches of communicable diseases to increase utilization of primary healthcare services by people living with HIV. This study describes and explores experiences of NIMART nurses in the implementation of integrated management of HIV and NCDs in Limpopo Province, South Africa.

**Material and methods:** Twenty eight participants were purposely selected from rural primary health-care facilities in Limpopo Province. Data were collected through four online focus group discussions and analyzed using ATLAS.ti program.

**Results:** The study established that the structure of clinics was unpleasant, the training of nurses was inadequate, the supply of medication and equipment was inconsistent, and there was a lack of external and internal support to implement HIV and NCDs services. There was a dire shortage of staff and imbalance of management of HIV and NCDs. Further training is suggested to strengthen the implementation of integrated management of HIV and NCDs in Limpopo Province, South Africa.

**Conclusions:** Although much has been done in the implementation of integrated management of HIV and NCDs in South Africa, there is a need for the Department of Health to eliminate the challenges identified in the present study. Continuous professional development could lead to enhanced clinical competencies and quality of care in primary health care (PHC) facilities.

HIV AIDS Rev 2023; 22, 3: 217-225  
DOI: <https://doi.org/10.5114/hivar.2023.131570>

**Key words:** exploration, experiences, integrated management, HIV, NCDs, NIMART.

## Introduction

Integrated chronic disease management (ICDM) is a model that seeks to combine the management of non-communicable diseases (NCDs) into the existing management approach of communicable diseases in order to increase the utilization of primary healthcare services by pa-

tients. Furthermore, multimorbidity is identified in most sub-Saharan countries [1, 2]. Integrated management of HIV and NCDs is considered a game-changer for improved clinical outcomes since people living with HIV (PLHIV) are at risk of developing NCDs [2].

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**Article history:**  
Received: 08.07.2021  
Received in revised form: 02.08.2021  
Accepted: 09.08.2021  
Available online: 15.09.2023



In South Africa, more than 7 million people are living with HIV. Since the implementation of large antiretroviral therapy (ART), most South Africans live longer than before. However, there is still a high prevalence of HIV, including an increasing number of PLHIV facing the dual burden of HIV and NCDs [2-4]. Harker [5] indicated that the presence of NCDs complicates HIV-specific care and treatment, while the presence of HIV disrupts the management of NCDs. Furthermore, HIV and antiretroviral therapy (ART) may both contribute to the development of some NCDs and occurrence of HIV-NCD comorbidities, as it has been observed in many countries [2, 5, 6].

Guidelines for integrated management of HIV and NCDs as outlined by the World Health Organization (WHO) and the South African Department of Health require that every HIV-positive patient should be screened for hypertension and diabetes, amongst other NCDs [7-9]. Integrated clinical services management offers a patient-centered approach, through which patients access quality treatment from one primary healthcare (PHC) facility [2, 10-12].

In most of sub-Saharan countries or low middle-income countries (LMIC), the UNAIDS targets 90-90-90 have made a tremendous achievement. However, there is still an increase of NCDs, particularly in semi-urban or rural areas, including the Limpopo Province in South Africa. PLHIV are virally suppressed due to simplified treatment guidelines; however, they continue to die as there is poor management of NCDs. It was also estimated that by 2025, NCDs mortality rate could exceed HIV mortality rate [3, 13, 14].

In response to implementing integrated management of HIV and NCDs, the South African Department of Health made a call that all PHC facilities should start implementing integrated management of HIV and NCDs. A program integrating clinical service management (ICSM), now known as 'ideal clinic', was implemented in 2014 [15]. A need was identified for redirection, including re-organization of facility arrangement, training of personnel, and support by program managers for nurses to gain confidence in the provision of integrated care for HIV, diabetes, and hypertension in South Africa.

According to the South African ICSM system, a pre-implementation preparedness and health services re-organization, including introduction of guidelines and policies and training of professional nurses, was completed [11, 15, 16]. In addition, nurses require a new set of skills and competencies for professional nurses implementing integrated management of HIV and NCDs in PHC facilities. Despite the preparation made by the South African Department of Health, there are still discrepancies in the implementation of integrated management of HIV and NCDs. Therefore, this study strove to describe and explore the experiences of nurse-initiated management of ART (NIMART), focusing on how trained nurses implement the integrated management of HIV and NCDs in Limpopo Province, South Africa.

## Material and methods

### Study design and setting

An exploratory-descriptive research design was conducted to describe and explore the experiences of NIMART nurses in the implementation of integrated management of HIV and NCDs. The study was conducted in Vhembe District in Limpopo Province. Most areas in Vhembe District are regarded as rural, with a population of 1,387,625 million people (25% of Limpopo Province). Vhembe District has 5 municipalities, with 125 fixed PHC facilities (clinics and CHCs), which provide HIV and NCDs services, and it is one of the National Health Insurance (NHI) pilot sites [17]. There are 659 professional nurses (PNs), out of which 320 are NIMART-trained, and 130 trained in adult primary care (APC) [18]. The reason for choosing Vhembe District is its' difference from other three districts in Limpopo, which is the unavailability of support from donor-funded organizations. In other words, the Vhembe District is implementing integrated HIV and NCDs services on its' own, without a support of donor community. This implementation is, however, guided by the Departmental HIV and NCDs policies. We selected only participants who were trained on NIMART and APC. Nurses were selected to participate if they provided integrated management of HIV and NCDs in the selected facilities. The facility managers assisted the researchers in identifying the research participants (nurses). The facility managers acted as gatekeepers and mediators for this study. They essentially informed the participants about the details of the study. Four focus group discussions (FGDs) were conducted with 28 participants, with seven to ten participants in each FGD. The number of nurses was determined by their availability during the FGD day as the researchers did not want to interfere with the flow of services at the facility. In Vhembe District, nurses work on shifts, and therefore only those who were off duty participated in the study.

### Data collection

An online focus group discussion (FGD) was used to collect data from the PNs. The rationale behind online FGDs was to address COVID-19 regulations. Data was collected by trained research assistants, in addition to the researcher who was always present during the discussions. The central question guiding the interview was: "What are NIMART nurses' views and experiences in the implementation of integrated management of HIV and NCDs at a PHC level?". This was followed by other probing questions regarding competencies, challenges, prospects, and support related to the implementation of integrated management of HIV and NCDs. Participants were allowed to use different private venues, which were convenient to express their experiences. In addition, the researcher encouraged participants to use venues with good internet connectivity. Nurses were grouped according to their served municipality, and they were interviewed in English because all participants, research assistants, and

the researcher were comfortable in the language. Four FGDs comprising of seven to ten participants were held and lasted between an hour to one hour and thirty minutes. FGD was recorded online and notes were taken by both the research assistants and the researcher. Data saturation was reached during the fourth FGD.

### Data analysis

This study used ATLAS.ti program, and followed basic steps of notice-collect-think (NCT) to analyze data. Furthermore, the basic steps enabled the researcher to work in a systematic manner instead of declaring the software to be the method itself [17]. Data collection and analysis occurred simultaneously. The researcher started by noticing aspects of the data that led to a label and what was noticed in the form of codes [17]. This coding was divided into descriptive-level and conceptual-level analysis. During descriptive phase, the researcher read and re-read transcripts and field notes; then, identified patterns in the data and started coding and verifying codes. In conceptualization phase, ATLAS.ti program was used to link and classify similar data together into categories and themes. The researcher followed criteria for ensuring credibility, transferability, dependability, and confirmability [18].

To ensure credibility, two researchers independently read and coded the transcribed FGDs. Transferability was ensured by using purposive sampling to select PNs who participated in the study, providing and sharing the results with content experts, and conducting a further literature review. Confirmability was assured by comparing the transcribed focus group sessions, with extensive notes taken by research assistants who were non-participating note-takers during FGDs. Dependability was enhanced by maintaining an audit trail of all copies of notes, transcribed and recorded data for future use.

### Ethical approval and consent for participation

Ethical clearance was obtained from the North-West University health research ethics committee (NWU-00957-19-S1). Permission was sought from the Limpopo Department of Health. Confidentiality was maintained to protect participants' identities.

All NIMART-trained nurses provided written informed consent before participating in the study.

## Results

### Demographic profile of participants

The average age of the PNs was 34 years, ranging from 25 to 55 years. Twenty-four were females and four were males. Twenty (80%) PNs were recruited from clinics and eight from CHCs. Majority of the participants ( $n = 17$ ) (68%) held a four-year diploma or degree in nursing, seven (28%) had a one-year diploma in general nursing, and four (16%) held

a postgraduate nursing degree. Sixteen (64%) participants reported working in a PHC setting for more than 1-5 years, while twelve (48%) indicated working experience in a PHC setting for more than 5 years. All PNs reported working in a rural setting. All 25 (100%) participants were trained on NIMART; however, only 14 (56%) professional nurses were trained on APC guidelines.

### Emergent themes

Four themes emerged from FGD analysis: (1) challenges in implementing integrated management of HIV and NCDs; (2) competency related to the implementation of integrated management of HIV and NCDs; (3) prospects in implementation of integrated management of NCDs; and (4) suggestions for professional implementation of integrated HIV and NCDs, as shown in Table 1.

### Challenges in implementing the integrated management of HIV and NCDs

Participants reported several challenges in the implementation of integrated management of HIV and NCDs, such as lack of support from management, shortage of training for nurses, human resources challenges, poor infrastructure, and lack of medical consumables.

#### Lack of support from management

The participants reported that lack of support from management demotivated nurses from excelling in patient management. Lack of support negatively affects the implementation of HIV and NCDs services.

"I have observed poor support from HIV program managers, as it leads to poor management of these conditions. Poor updates on the program in terms of guidelines, policies, and progress/ indicators; yes, you find that the managers do not come to see if we are doing well." (PN 4, FGD4).

#### Lack of training for nurses

The participants reported a lack of training in nursing profession as a weakness in the provision of efficient HIV and NCDs patient care. The gaps included the how-to complete the required registers.

"Lack of trained staff to render integrated chronic services." (PN 3, FGD1).

"Sometimes there is no proper training on how to complete the registers." (PN 1, FG2).

#### Human resources challenges

The nurses in this study confirmed a human resources challenge in the implementation of integrated management of HIV and NCDs.

**Table 1.** Themes, sub-themes, and codes of exploration of NIMART nurses in the implementation of integrated management of HIV and NCDs

Themes	Sub-themes	Codes
Challenges in implementing integrated management of HIV and NCDs	Lack of support from management	
	Lack of training for nurses	
	Human resources challenges	Shortage of nursing personnel Burnout of nursing personnel
		Lack of administrative staff
	Poor infrastructure	
Lack of medical consumables		Unavailability of medication Treatment defaults
		Unavailability of medical equipment
Competency related to implementation of integrated management of HIV and NCDs	Nurses feel competent in managing HIV	
	Imbalance of HIV and NCDs management	
Prospects in implementation of integrated management of NCDs	Patient satisfaction	Patient choose the time to visit clinic/ health center
		Treatment becomes client-centered
		Reduced stigma due to integrated management of HIV and NCDs
	Support from various stakeholders or partners	
	Proper HIV guidelines implementation	
Suggestion for professional implementation of integrated HIV and NCDs	Professional development	A need to study further
		A need for more training

### *Shortage of nursing personnel*

The participants reported a shortage of staff as a serious challenge in the implementation of integrated management of HIV and NCDs. Most of the nurses see patients for a longer time than before integrated management for HIV and NCDs was introduced. Furthermore, the participants indicated that the nurse-patient ratio was too high, and this compromised patient care. Burnout was specifically indicated as a serious challenge arising from this dire shortage of personnel.

“Number two is a shortage of personnel that can make it slower to manage each client.” (PN 2, FGD1).

“Staff versus patient ratio is small, meaning, high nurse-patient ratio or we are seeing a lot of patients than we are supposed to.” (PN 4, FGD3).

“This program increases overload for us, I mean clinician, we have to do a lot, and there is a lot of recording, registers, and it is frustrating.” (PN 2, FGD1).

“Shortage of staff. Increased workload, means we are supposed to see one patient for plus or minus 30 minutes.” (PN 5, FGD3).

### *Burnout among nursing personnel*

The participants reported that nurses experience burnout as they consult many patients requiring integrated management of HIV and NCDs.

“Nurses suffer burnout, trying to manage all chronic patients.” (PN 1, FGD1).

### *Lack of administrative staff*

The nurses reported a shortage of administrative staff to assist in clerical duties during the implementation of integrated management of HIV and NCDs.

“I almost forgot this one... you find that there is no clerk, you have to retrieve files, then see patients; it is time-consuming and you lose interest in managing the patients well.” (PN 7, FGD 3).

### **Poor infrastructure**

The nurses reported that their working environment is not conducive as the space is overcrowded with patients who visit the facilities. This view of poor infrastructure was highlighted in the following views:

“In my facility, there is a lack of space to accommodate all the chronic patients in one room.” (PN 2, FGD4).

“The structure of the clinic is small for the population covered.” (PN 3, FGD3).

### **Lack of medical consumables**

In this study, the participants complained that facilities do not have some medical equipment essential during

the implementation of integrated management of HIV and NCDs, including shortage of certain medication.

#### *Unavailability of medical equipment*

Another challenge, which was reported by the participants was the unavailability of medical equipment required in the integrated management of HIV and NCDs. Properly diagnosing NCDs requires that a facility ought to have equipment, such as tape and height measure. The following was expressed by one participant:

“Ummh, as much as the program demands that you do all the vital [procedures], sometimes you have to measure BMI and you find that there is no height measure, so you cannot see if the patient is obese.” (PN 2, FGD4).

#### *Unavailability of medication*

The participants reported that at times, there is a shortage of medication, which frustrates the nurses during the implementation of integrated management of HIV and NCDs.

“If there is a lack of medication, I consider it a weakness.” (PN 3, FGD2).

“Sometimes there is no treatment, or you find that patients are coming on the wrong dates, files get mixed up.” (PN 3, FGD4).

#### *Treatment defaults*

Most of the nurses spoke about patients defaulting on treatment as one of the threats to the integrated management of HIV and NCDs. They recounted incidents where there was no treatment supply at the facility and how HIV patients were treated differently:

“My problem is most of the HIV patients are defaulting [on] treatment because they were used to specialized care.” (PN 5, FGD3).

“These lead to increase in the number of defaulters and [we] end up having an increased number of patients to be managed in facilities, with the issue of poor treatment supply and poor-quality care we end up failing our patients.” (PN 3, FGD 1).

### **Competency related to the implementation of integrated management of HIV and NCDs**

The participants confirmed in this study that there was competency related to the implementation of integrated HIV and NCDs. The participants indicated that they feel competent in managing HIV, however, there is an imbalance in managing HIV and NCDs.

#### *Nurses feel competent in the management*

The participants highlighted that they are competent in the management of HIV and NCDs as there are policies and guidelines, which are easy to follow. In addition, managing both HIV and NCDs provide a higher level of competency.

“I am competent to implement the integrated management of HIV and NCDs because I have all the policies and guidelines for implementation, and they are straightforward.” (PN 1, FGD 1).

“I am NIMART-trained and I understand, and I am competent in managing HIV and NCDs in my facility. And [I am] also PC101- and APC-trained.” (PN 2, FGD 3).

“I think managing HIV and NCDs enhances the health-care provider [with some] level of competency.” (PN 5, FGD 1).

#### *Imbalance in the management of HIV and NCDs*

The nurses reported that there was an imbalance in the implementation of HIV and NCDs as most of them identified that HIV is given priority as opposed to NCDs. Professional nurses echoed the following sentiments:

“To answer the question, yes, I am strong in managing HIV and a little bit in managing NCDs.” (PN 1, FGD2).

“I think HIV has been given [more] priority, so I am so competent in initiating ART, but with other chronic diseases, it must be given to doctors.” (PN 4, FGD1).

### **Prospects in the implementation of integrated management of NCDs**

Several prospects were reported by the participants in this study. Participants reported that patients are satisfied with the services provided in facilities, support they receive from other stakeholders, and then the proper implementation of HIV guidelines.

#### **Patient satisfaction**

In relation to patient satisfaction, the participants indicated that a patient chooses a time of visiting at the facility, and reduced stigma and services are client-centered.

#### *Patients choose the time of visiting clinic/health center*

The participants indicated that the implementation of integrated management of HIV and NCDs provide a convenient time for patients to visit PHC facilities.

“Patients chose their own time to come to the facility, as such, it is difficult for them to default appointments.” (PN 2, FGD3).

#### *Treatment becomes client-centered*

In terms of patient-centered approach, the nurses reported the implementation of integrated management of HIV and NCDs as a new strategy with a patient-centered approach. One male nurse stated the following:

“This is new things for us, I have identified much, but in my view, it provides a client-centered approach, in which care is integrated.” (PN 6, FGD2).

### *Reduced stigma due to integrated management of HIV and NCDs*

Almost every participant conceded that the integrated management of HIV and NCDs has resulted in a reduction in patients stigmatization towards HIV and other NCDs. One participant said:

“I think I have realized that there is a reduction of stigma mainly to HIV-positives, as they will get the medication in one room with all other patients with chronic diseases.” (PN 2, FGD1).

Another one added:

“In my facility, I have noted that patients are no longer [stigmatized] and we have low defaulter rate”.

Another male PN stated:

“I have noted that we are getting rid of stigma, as all clients will be [in] the same queue.” (PN 4, FGD 4).

### **Support from various stakeholders**

The participants also viewed support from stakeholders as an opportunity, in which the implementation of integrated management of HIV and NCDs program can influence. The support from program managers and another donor-funded organizations is important.

“We receive support from operational managers, HAST coordinators, doctors, and previously we had NGOs.” (PN 3, FGD1).

Another participant said:

“I have support from my facility manager, but I remember we had FPD before, they used to come and teach us new things.” (PN 3, FGD1).

### **Proper implementation of HIV and NCDs policies and guidelines**

Those nurses who were trained on both NIMART and APC reported that they implement the integrated management of HIV and NCDs successfully and systematically. This view was verbalized in the following way:

“In our facility, guidelines and policies are followed since we have patients’ files, we do audit whereby we see that guidelines are followed.” (PN 4, FGD2).

### **Suggestions for proper implementation of integrated management of HIV and NCDs**

The participants in this study indicated that continuous professional development is needed in the implementation of integrated management of HIV and NCDs.

### **Professional development**

The nurses indicated that proper implementation of integrated management of HIV and NCDs requires training and furthering studies.

### *A need for more training*

It was shown that training of nurses on integrated management of HIV and NCDs remains an essential requirement to enhance the competency of nurses in providing adequate patient care. The following statements were highlighted by the participants:

“I need refresher courses to get some updates, to have a forum or something just to have all relevant stakeholders like HIV or other programs, in-service training, or presentation during NIMART training.” (PN 2, FGD3).

“I still need training, so that I can be competent and reduce mistakes in filling the forms or files. Until I get the training, I will then say I am competent. These people will make you do things, even SANC, says we must do what we were trained on. I have old training. I need updates.” (PN 4, FGD 2).

“Training will ease the processes. I need training. I need to be heard not just being left alone in the facility.” (PN 1, FGD1).

### *A need to study further*

The participants suggested that furthering studies among nurses could improve the integrated management of HIV and NCDs in PHC facilities. One of the participants said:

“I need to study more, then I can be more competent in managing both conditions. The newly qualified [staff] are better they google.” (PN 7, FGD1).

## **Discussion**

The findings of this study verified that integrated management of HIV and NCDs requires clinical competency and provision of policies and guidelines for the nurses to provide comprehensive clinical outcomes for patients they serve. The Department of Health is responsible for policy development to guide the implementation in PHC facilities and to set out the in-service training to be followed by the district to enhance the clinical competencies. Furthermore, the guidelines and policies are disseminated to PHC facilities for nurses’ reference during the implementation of integrated management of HIV and NCDs. It was also established that integrated management of HIV and NCDs reduces stigma, which HIV patients experienced with previous horizontal management of HIV.

Our findings are consistent with those of previous studies, which demonstrated that provision of clinical management support is required, including guiding tools, and should be a priority in the facility service re-organization [11, 15]. Moreover, a study confirmed that pre-implementation studies for integrated management of HIV and NCDs are useful in informing nurses on new guidelines and assess acceptability [17, 18]. Clinical competency of nurses in the management of HIV and NCDs corroborates findings in several studies. It is confirmed that nurses could offer patient care for as long as they are trained. However, they need further professional guidance in relation to new topics

introduced or management of complications to curb the imbalance between HIV and NCDs management. Therefore, a need for extensive training on NCDs guidelines was identified [19-23].

Consistent with other studies, patients experience a sense of confidence when all chronic conditions are managed simultaneously without separating whether the condition is communicable or non-communicable [24]. In another study, it has been demonstrated that stigma was increased due to programs according to conditions, especially HIV [23, 24]. Challenges in this study included lack of support from the management, shortage of training, lack of medication and equipment, poor infrastructure, and shortage of staff. Management of NCDs alone requires a self-assisted management approach [6, 25], which calls for a support for those nurses in the provision of integrated management of HIV and NCDs. Support and supervision of nurses by program managers are required for quality patient care [26]. In this study, a lack of support was identified by the nurses, impeding the entire implementation process.

Studies have confirmed that lack of training contributes to a paucity in competencies of healthcare workers, particularly in the integrated management of HIV and NCDs [12, 27-29]. It is important to note that provision of guidelines and policies is not the solution to proper implementation because of the evidence of poor patient clinical outcomes despite availability of such guidelines and policies [11]. Previous studies reported that lack of equipment and medication demotivated nurses in providing quality patient care [12]. Furthermore, inadequate distribution of pharmaceutical products necessary for the implementation of integrated management of HIV and NCDs is a barrier to public health seekers [30]. It is also evident that political interference also impedes obtaining of healthcare equipment, which is essential to patient care [31].

Additionally, fragmented ordering of medication and equipment also contributes to nurses not placing enough orders in facilities, which led to a disruption of supply chains and depletion of stock. The fracas here exerts a negative impact on the provision of integrated management of HIV and NCDs [32-35]. Shortage of medical consumables and shortage of staff often lead to nurses' burnout [31, 32].

Although there is evidence of progress in the implementation of integrated management of HIV and NCDs, poor infrastructure has been identified as a challenge. Patients are bound to queue in facilities or in a non-conducive environment to receive care. This finding concurs with another study conducted in North-West Province, South Africa [27], where PHC facilities were too small (especially the reception area) to accommodate a large number of patients.

The findings in this study concur with several studies, which state that integrated management of HIV and NCDs offers opportunities for patients to be treated at their convenience with proper interventions, such as collecting blood according to their cohorts and yearly assessment of NCDs. In turn, patients are monitored and empowered to take responsibility for their health. In some instances, patients remind their health providers as they are seen in planned appointments and

are empowered with information [1, 2, 36, 37]. Furthermore, another study showed that healthcare facilitate empowerment through health education and information exchanged during patient-provider interactions. There is no doubt that this promotes patients' health behaviors [38]. In addition, another study suggested that working with different cadres in a health-care facility promotes early diagnosis and referral [39]. In other words, nurses should enhance their skills in offering health education to promote a patient-centered approach.

According to the participants in this study, a need for partnership with stakeholders, such as donor-funded organizations, could enhance the implementation of HIV and NCDs among nurses at PHC levels. This is confirmed by several studies conducted in different districts, which are supported by donor-funded organizations. Progress on the integrated management of HIV and NCDs is continuously reported in the 27 districts, which are PEPFAR supported [2, 40, 41]. Also, most countries have published research on integrated management of HIV and NCDs, and reported that the research was donor-funded [40-45].

The suggestion for training is in line with a South African-integrated clinical services model, which outlines that staff must be trained before implementing newly introduced guidelines and policies [11,15]. Training of existing nurses is an essential element as opposed to hiring new workforce who could compromise access to quality care from the existing nurses [19, 46-49]. The South African Nursing Council urges that every healthcare worker should be capacitated before they can implement a change in guidelines, and training updates should be offered to nurses implementing integrated management of HIV and NCDs [25].

In a study conducted in Thailand, building capacity through continuous professional development, such as enrolling in research courses including PhDs among health professionals, was recognized as a critical component in the effort to restore inequalities in health [50, 51]. Nurses should continuously improve their skills through in-service training or online courses that are provided to enhance their clinical abilities and competencies. This would ultimately improve patient outcomes in the context of integrated management of HIV and NCDs [50-52].

## Limitations of the study

The limitation is that the study was conducted in a district where there is no support of donor-funded organizations. The study only focused on nurses providing integrated management of HIV and NCDs, and was performed with a small sample in one district. Therefore, findings of this study cannot be generalized to other districts or provinces but they can be applied.

## Conclusions

Although, the integrated management of HIV and NCDs is widely recognized in South Africa, in the current study, there are prospects, which the country needs to leverage on.

There are challenges identified that the country needs to guard against. The Department of Health needs to ensure the sustainability of integrated management of HIV and NCDs. Additionally, addressing the training needs of NIMART nurses to strengthen their clinical competency in the implementation of integrated management of HIV and NCDs, should be prioritized. In a country that provides free healthcare services, we found that the structure of clinics was below expected benchmarks, training of nurses was inadequate, supply of medication and equipment was inconsistent. The Department of Health should prioritize the review of ICSM to address the challenges identified in the study.

## Acknowledgement

The authors would like to thank the professional nurses who participated in the study as well as facility managers who recruited them. We appreciate all the participants in this study.

The study was supported by the North-West University and Health and Welfare Seta (HWSETA).

## Conflict of interests

The authors declare no conflict of interest.

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