


# Registered nurses' perceptions regarding nurse-led antiretroviral therapy initiation in Hhohho region, Swaziland

**A.H. Mavhandu-Mudzusi<sup>1</sup> RN, RM, Bcur, Bcur (Hons), BPsy (hons) MCur, PhD, P.T. Sandy<sup>2</sup> RMN, BSc (Hons), PGDipED, PGCertED, MSc, PhD  & A. Hettema<sup>3</sup> RN, MPH**

**1** Professor, **2** Professor, **3** Post-graduate student, Department of Health Studies, University of South Africa, Pretoria, South Africa

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**Background:** Swaziland has the highest HIV prevalence globally. It faces a critical shortage of health workers for addressing the HIV pandemic. To curb this human resource challenge, Swaziland adopted a nurse-driven model for antiretroviral therapy delivery in line with the recommendations of the World Health Organization on task shifting.

**Objective:** The study explored the perceptions of registered nurses on the nurse-led antiretroviral therapy initiation programme in the Hhohho region of Swaziland (NARTIS).

**Design:** The study utilized a phenomenological design, specifically a phenomenographic design.

**Setting:** The study was conducted in ten health facilities in the Hhohho region of Swaziland. These facilities comprised eight clinics, a hospital and a health centre.

**Participants:** These were registered nurses, trained and certified in the nurse-led antiretroviral therapy initiation programme. The nurses also had experience of working in a nurse-led antiretroviral therapy initiation programme. Eighteen (18) nurses were purposively selected and recruited to participate in the study.

**Methods:** Data were collected through open and deep individual interviews guided by a semi-structured interview schedule. The audio-recorded interviews were transcribed and analysed thematically using Sjöström and Dahlgren's approach to data analysis.

**Results:** Three major themes emerged from the study data: nurses' emotional reactions to the implementation of the NARTIS programme, and influences and overcoming barriers to the programme.

**Conclusions:** The study findings have generated insights into this program which is useful for the provision of care to people living with HIV/AIDS in Swaziland. But nurses need support to ensure effective implementation.

**Implication for nursing and health policy:** The study findings have implications for both the practice of the NARTIS programme and health policy development. The development of a health policy that alleviates the

*Correspondence address:* Azwihangwisi Helen Mavhandu-Mudzusi, Department of Health Studies, University of South Africa, Muckleneuk Ridge, Pretoria 0003, South Africa; Tel: +27122492055; Fax: +27866151792; E-mail: mmudza@unisa.ac.za.

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barriers to the NARTIS programme can enhance nurses' role and make care provision to people living with HIV/AIDS more effective.

*Keywords:* Developing Countries, Health System Reform, HIV/AIDS, Nurse-Led Antiretroviral Therapy Initiation, Nursing Shortage, Phenomenography, Primary Care, Swaziland

## Introduction

This study reports on the perceptions of registered nurses (RNs) on the NARTIS programme in the Hhohho region of Swaziland. Swaziland is one of the countries in the world that is heavily affected by the HIV/AIDS pandemic and has the highest HIV prevalence globally (Central Statistical Office [CSO] 2008). The Swaziland Demographic and Health Survey of 2006–2007 noted that 26% of its adult population (15–49 years old) and 41% of pregnant women were living with HIV (CSO 2008). Despite this, only a small number of health professionals are available in Swaziland to meet the health needs of its population. Noting this, Swaziland is considered to experience a critical shortage of health workers, as only ten physicians, 56 general nurses and 64 midwives per 100 000 of its population are available to provide health services (Ministry of Health 2012). These figures are far below the minimum of 23 health workers per 1000 population required for effective health service delivery (Interagency Task Team on Human Resources for Health 2012). Acknowledging this, the World Health Organization (WHO) (2008) recommended the use of task shifting to overcome this human resource challenge.

Task shifting is considered an effective strategy for dealing with shortages of human resources in HIV treatment and care (Callaghan et al. 2010). The WHO (2008) defined it as a rational skill-based redistribution of tasks among health professionals, which may involve the re-allocation of some tasks that are often carried out by highly qualified health workers to less qualified health workers. The rationale for this is to ensure a more efficient use of available human resources for quality health service delivery. An example of task shifting is the nurse-led antiretroviral therapy initiation programme (NARTIS programme) initiation programme for patients living with HIV in Swaziland. Simply, the task of initiating antiretroviral therapy (ART) is shifted from doctors to nurses in Swaziland.

## Background

The NARTIS programme plays a critical role in the provision of care to people living with HIV in Swaziland. RNs assume a leading role on this programme, and this may include initiating patients on ART and screening patients for liver and kidney function. Thus, RNs on this programme are required to possess specific skills and knowledge of initiating patients on

ART (WHO, 2008). In Swaziland, RNs can only participate in the NARTIS programme following successful completion of a 5-day standardized national training programme and a 5-day clinical placement on ART initiation under the supervision of an experienced medical doctor. The rationale for this is to ensure that the RNs are equipped with the required competencies for ART initiation. Examples of these competencies include promotion and monitoring of adherence to treatment, and understanding the different types of ART and their side effects. The facilitators of the 5-day training programme are doctors and RNs trained and experienced in nurse-led ART initiation.

The Swaziland's Ministry of Health adopted the NARTIS programme, and this resulted in an improved ART coverage from 59% in 2009 to 91.1% in 2012 (Ministry of Health of the Kingdom of Swaziland 2013a,b). The improved ART coverage is attributable to the placement of RNs, trained in the NARTIS programme, at the nurse-led primary health clinics across Swaziland (Ivers et al. 2011). Such an approach to placement promotes universal access to HIV/AIDS care, as it allows RNs to timely initiate patients on ART. Thus, patients no longer have to wait on the doctors, who only visit the primary health clinics once a month, to be initiated on ART.

The nurse-led ART initiation programmes have added more responsibilities (such as screening for tuberculosis) on RNs (Colvin et al. 2010). An increase in responsibilities can have a negative affect on nurses' job satisfaction (Bodilenyane 2012). In contrast, George et al. (2010) note that the nurse-led ART initiation programmes often enhance nurses' job satisfaction despite the added responsibilities. The NARTIS programme was piloted in Swaziland at primary health clinics in 2011. The outcome indicates that this programme improves nurses' job satisfaction and enables them to access patients, including those in hard-to-reach areas. Anecdotally, nurses frequently question the effectiveness of this programme. In spite of this discrepancy, nurse-led ART initiation is a neglected area of research, and this is particularly the case in the continent of Africa. To date, there is no published research study on the NARTIS programme in Swaziland despite concerns about its effectiveness. It is envisaged that an understanding the RNs' perceptions of this programme could enhance its effectiveness, as such understanding may indicate how patients could be best supported. Hence, this study

explored the perceptions of RNs on the NARTIS programme in the Hhohho region of Swaziland.

### Design

This study adopted a phenomenographic design. This strand of phenomenology requires researchers to explore and discuss variations in participants' experiences and understanding of phenomena (Struksnes et al. 2012). Thus, researchers adopting a phenomenographic design seek to identify the multiple experiences and the understanding that a particular group of people have of a particular phenomenon. Hence, the outcomes of a phenomenographic research study are joint products of interactions between participants and their experiences of their external world. These products, which capture the meanings of the participants' multiple experiences and their understanding of phenomena, are referred to as conceptions or thematic categories (Langdridge 2007).

### Population and sampling

The study settings were ten health facilities in the Hhohho region of Swaziland. These facilities comprised eight clinics, a hospital and a health centre. These health facilities had in total 178 RNs who were trained and certified in the NARTIS programme. This nursing staff group constituted the population of interest of the study.

Following ethical clearance and managerial permission, potential participants were approached in the following way. One of the authors met with each of the nurse-led initiation teams of the ten health facilities in order to explain the study's aim, its inclusion criteria and respond to queries. Each RN was given an information sheet and a letter of invitation. The information sheet contained the researcher's contact details, and RNs who were prepared to participate were asked to make contact. Consequently, 120 RNs made contact with the researcher and thus formed a volunteer sample pool from which individuals were purposively selected for participation based on the following inclusion criteria:

- RNs trained and certified in the NARTIS programme;
- RNs working in the NARTIS programme in the Hhohho region.
- RNs with over 3 months' experience of working in the NARTIS programme
- RNs willing to share their experiences of the NARTIS programme.

Eighteen RNs were identified and recruited, ten of whom were females and eight were males. All of them agreed to be interviewed. The participants had an average of 5-years

experience of working as a RN, and an average of one and a half years of experience of working in a nurse-led antiretroviral therapy initiation programme.

### Ethical considerations

Ethical approval of the study was obtained from the Health Studies Research and Ethics Committee of the University of South Africa, and the Swaziland Scientific and Ethics Committee. Permission to conduct the study was obtained from the Regional HIV coordinator of the study sites. The main ethical considerations were in the areas of consent, confidentiality and anonymity. Written informed consent was obtained, and participants were free to withdraw at any time. The 18 RNs recruited participated throughout the study. All data were stored securely in accordance with the privacy and data collection laws. As regards anonymity, at the point of transcription names were substituted for code numbers, and in all reports, including this study, great care was taken to change any information by which a participant or health facilities could be identified.

### Data collection

Data were collected from July to August 2014 by the author, who is a female RN, working at Swaziland Ministry of Health as a master trainer (trainer for NARTIS trainers) and monitor for NARTIS programme. Data collection took the form of individual interviews, guided by a semi-structured interview schedule. Data collection was preceded by piloting of the interview schedule with two RN involved NARTIS who were not part of recruited participants, after which recruitment commenced and continued until category saturation was achieved. All interviews were conducted in private rooms of the health facilities where participants worked. The questioning approach commenced with an open question: What are your experiences of working in the NARTIS programme? Prompts and probes were used to enable participants to talk freely. All interviews were audio-recorded, and notes were taken during each interview. On average, each of the interviews lasted for 45–60 min.

### Data analysis

Data collection and analysis were conducted in parallel in order that the selection of participants could be guided by the data already yielded. The audio-recorded data were transcribed verbatim and analysed manually by author one and author two, while author three acted as an independent coder. The notes and transcripts were analysed manually using Sjöström & Dahlgren's (2002) seven-step approach to analysis (see Table 1).

**Table 1** Sjöström & Dahlgren's (2002) seven-step approach to analysis

- 1 *Familiarization*: Read transcripts several times to increase familiarity of material
- 2 *Compilation*: Search transcripts for statements that correspond to the aim of the study
- 3 *Comparison*: Analyse identified statements for similarities and differences. Group statements with similar content together
- 4 *Grouping*: Examine identified statements for meanings. Group statements with similar meanings together (formation of thematic categories)
- 5 *Articulation*: Re-examine or repeat analysis of thematic categories to enhance meaning. This stage informs the formation or identification of descriptive categories, main themes
- 6 *Labelling*: Label the descriptive categories to reflect their meanings
- 7 *Contrasting*: Compare descriptive categories for similarities and differences to ensure that each has a unique character

**Table 2** Characteristics of participants and health facilities

Types of study settings	No of health facilities	No of participants	Sex	
			M	F
Clinic	8	10	4	6
Hospital	1	4	2	2
Health centre	1	4	2	2

### Trustworthiness of the study

This study adopted the framework of trustworthiness postulated by Guba & Lincoln (1994). It has five criteria: credibility, dependability, confirmability, transferability and authenticity (Polit & Beck 2012). Credibility refers to strategies researchers will employ to ensure believability of study findings. Dependability on the hand refers to the use of approaches to ensure that the study findings are replicable. Confirmability is about ensuring that the findings of a study represent participants' narratives. These criteria were assured here by the use of an interview schedule, note-taking, audio recording, verbatim transcription, member checking and a step-by-step analysis of study data. The criterion of authenticity requires researchers to provide detail descriptions of participants' lived experiences and feelings in relation to a phenomenon studied. Transferability refers to the degree to which the results of a study can be applied in other settings similar to the study area. These criteria were assured by writing a manuscript with detailed descriptions of the methods and context of the study, and participants' varied lived experiences of the NARTIS programme.

### Results

Participants were recruited from the three categories of the study settings as illustrated in Table 2. The participants had over 1 year of experience of supporting people with HIV/AIDS on the NARTIS programme, and over 4 years of experience of working as an RN. The participants provided a detailed descriptive account of their unique experiences of this programme. Three major themes emerged from the participants' narratives: (a) implementation of the NARTIS programme: emotional reactions; (b) influences on the NARTIS programme; and (c) overcoming barriers to the NARTIS programme.

The initials 'C', 'H', 'HC', which stand for clinic, hospital and health centre, respectively, are used at the end of each excerpt to identify their source. These initials are followed by a number and another initial, for example, '2M', with '2' indicating the sequence of the individual interviews and 'M' indicating the sex of the participant.

### Implementation of the NARTIS programme: emotional reactions

Some participants noted that the training in the NARTIS programme made them to feel prepared to initiate patients on ART. They emphasized that the facilitation methods utilized, such as role play and group discussions that go beyond information-giving and engage the whole person, prepared them for initiating patients on ARTs.

Although scary for the first time, I have initiated a number of patients on my own. It was not easy with the first patient, but with the knowledge and skills acquired from the training, I was able to do it effectively (C1M).

Although participants reported RNs' general feelings of preparedness, they noted that the RNs new to the NARTIS programme usually demonstrated a lack of confidence in initiating patients on ART. The lack of confidence was mainly expressed by reported feelings of anxiety. In participants' view, this is a normal reaction of people when exposed to a new task.

I was terrified when I started to initiate ART. This was mainly because there was no one to seek advice from if difficulties arose (C10F).

A few participants talked about feelings of enhanced confidence in ART initiation following prolonged periods (i.e. 6 months and above) of experience in the NARTIS programme. In part, they attributed this to the regular participation in reflective discussions of real clinical scenarios on ART initiation.

My confidence in ART initiation has increased over the years. This is because of the support I received from others, and the experience that I have accrued over the years (C4M).

Participants recounted that working in partnership with RNs experienced in the NARTIS programme is an effective support system. The support system they referred to here was peer support. This means that the initiation of patients on ARTs is no longer the responsibility of an individual RN, but it is instead a collective responsibility of RNs.

I always felt supported by my colleagues. One of my colleagues approved the combinations of drugs I used during my first ART initiation (H11F).

Participants reported that the potency of peer support could be linked to the prompt advice on the care of patients living with HIV/AIDS the RN might receive from their colleagues.

### **Influences on the NARTIS programme**

The study data revealed two sets of factors that might influence the implementation of the NARTIS programme: positive and negative factors.

#### *Influences on the NARTIS programme: positive factors*

##### Positive patient experiences

Participants reported that patients often share their experiences of how they are cared for on the NARTIS programme. They claimed that the patients' positive experiences contributed to the growing number of patients accessing the care and treatment services of this programme.

Patients share their positive experiences. As a result, the number of patients on the programme increased because of its range of good services (H11F).

Some participants narrated that the proximity to the NARTIS programme also contributed to the increasing number of patients seeking care at this programme.

The numbers kept rising because the services are close to our homes. So we do not have to go to the hospital anymore (H14M).

##### Availability of resources at the NARTIS programme

Participants considered the point of care CD4 testing machine a critical resource for successful nurse-led ART initiation. They highlighted that the initiation of patients on ART should be guided by their respective CD4 cell count test results.

If patients were tested HIV positive, we conduct a CD4 cell count test on them. If they were eligible, we then initiate ART (HC15M).

Participants reported that most of the NARTIS programmes had in their respective premises a point of care CD4 testing machine, which helped them to make timely evidence-based decisions for ART initiations.

Participants frequently talked about the role of expert patients in the NARTIS programme. They reported that the expert patients helped them to conduct CD4 cell count tests and monitor patients for side effects of ART.

Nurse-led ART initiation is a real team effort. Without the expert patients, it would be difficult to initiate effectively (HC16M).

According to participants, expert patients are those with HIV/AIDS trained in ART initiation. Some participants stressed the involvement of these patients in the NARTIS programme would enable nurses to develop a better understanding of the health needs of people living with HIV/AIDS. Such an understanding, participants asserted, would be enhanced if nurses have access to mentors as an additional support system. So, they recommended for nurses to be provided with mobile telephones to contact their respective mentors if they need to clarify issues related to ART initiation.

We have mentors, and we have their mobile telephone numbers and we can call them at any time to talk about ART initiation matters (H12F).

Participants believed that the provision of a national nursing guidance, like the scope of nursing of Swaziland, would contribute to promoting the success of the NARTIS programme. They recounted that this scope of nursing has been revised to allow nurses to prescribe ART for HIV-positive patients if they met the eligibility criteria. They added that it promotes individualization of patient care and consistency in the practice of nurse-led ART initiation.

I feel confident because there are guidelines and a clear scope of nursing. Whenever you are not sure, you can consult these standards (C2M).

#### *Influences on the NARTIS programme: negative factors*

##### Limited knowledge

All participants considered nurse-led initiation a highly skilled activity that involves caring and working with people living with HIV/AIDS. Yet participants reported that some nurses working in the NARTIS programme lack knowledge in some aspects of the programme.

Limitation in knowledge, for example, in the area of complications, can delay or deter nurses from initiating ART, especially for paediatrics (C5M).

##### NARTIS programme: stressful environments

Participants noted that the NARTIS programme is a stressful work environment. They attributed this assertion to the heavy workload involved and emphasised that constant exposure to



such environments could lead to stress, burnout and subsequent poor performance. Participants reported that the number of nurses in the NARTIS programme was not adequate to share the burden of care.

The workload is always heavy. The number of RNs is not adequate, and this has a negative impact on preparing patients for ART initiation (C6F).

Most participants stressed that the nurse rotation scheme compounds the problem of the limited number of RNs. According to participants, nurse rotation relates to the movement of RNs from one health facility to another purportedly based on need. In participants' opinions, such an approach often depletes some health resources of RNs experienced in ART initiation.

When they do the rotation, they will just move all the nurses trained and experienced in ART initiation (C9F).

#### Difficulties with transportation

Participants reported that the majority of the health facilities have transports to collect blood samples once or twice a week for laboratory baseline investigations. They added that this frequency of collecting blood samples could lead to delays in ART initiation and create problems with retention of patients.

Blood samples can only be collected on Mondays and Wednesdays. We do not have access to transportation services on every day of the week. This sometimes delays ART initiation (H13M).

In addition to the frequency of blood sample collection, some participants recounted other problems related to transportation.

The driver of the transport informed me last Wednesday that he was unable to collect the blood samples because of lack of petrol (HC17F).

Most participants reported that many nurses were not comfortable to initiate patients on ART in the absence of baseline liver and kidney function test results, and baseline CD4 cell count test results. They highlighted that the absence of these results could delay ART initiation, and patients are more likely to be lost to follow-up when ART initiations are delayed.

#### Consultation rooms and self-stigma

There was consensus among participants that most of the health facilities did not have adequate number of consultation rooms to conduct interviews and other nurse-led ART initiation clinical activities.

We have many patients, and we do not have the right number of consultation rooms to promptly see all of them.

When 3 nurses are on duty, only 2 will have access to the consultation rooms at any point in time (C3M).

Participants described the inadequate number of consultations as a deterrent to prompt ART initiation. Added to this, participants talked about issues related to stigma particularly that related to patients feeling stigmatised (self or internalized-stigma). They reported that patients often expressed worries about seeking help from health facilities that provide HIV care because of fear of being seen by others.

Patients do not want to be seen in the ART room. They also do not want to be seen to enter health facilities that offer services for people with HIV and AIDS (C7F).

### Overcoming barriers to the NARTIS programme

#### *Addressing nurses' training needs*

Some participants reported that a few nurses felt inadequately prepared to initiate ART for people with HIV/AIDS. They admitted that this knowledge deficit sometimes resulted in suboptimal care.

There is need to train the nurses on the wards. More nurses need to be trained in how to initiate ART for patients (C8F).

Given the increasing number of HIV-positive patients needing care, participants asserted that all nurses should be trained in the nurse-led ART initiation programme. They added that such an approach to training would make it easier for nurses to share the burden of care of this patient group.

All nurses should be trained in the nurse-led ART initiation and the training should be made a pre-requisite for clinical practice. Expert patients to be part of the facilitators (HC18F).

Participants recounted for the training in ART initiation to focus on specific aspects, like the use of the point-of-care CD4 machine, interpretation of blood test results for liver and kidney function, identification of complications and possible solutions.

Every facility is to be given a point-of-care CD4 machine so we can conduct baseline tests. Nurses should be trained in how to use this machine (C1M).

It would be good for all nurses to be trained in the interpretation of blood test results for liver and kidney function (C5F).

Training nurses in these areas, participants noted, could promote the effectiveness of the NARTIS programme, as patients would be provided with care and treatment based on their individual health needs.

*Alleviating stigma*

Some participants recounted during interviews that the patients' experiences of feelings of being stigmatised by others (enact stigma), and this could deter them from seeking help from health workers.

My colleagues and I believed that when patients are stigmatised and feel stigmatised, they would move away from us (C7F).

Participants narrated that patients find stigmatization, irrespective of its form, upsetting. Thus, nurses often advocate, participants reported, the use of approaches (such as raising awareness of people's right) to alleviate HIV-related stigma.

We need to empower patients to understand their rights. We also need to educate them in how to address their fears, and how to develop a positive perception of themselves (H11F).

We need more consultation rooms so that nurses can refill, commence initiations, and work with patients to alleviate feelings of stigma (C4M).

**Discussions**

The Kingdom of Swaziland has generalized HIV epidemic, with a prevalence exceeding 25%, suggesting that about one in every 20 adults lives with HIV (CSO 2008; WHO 2013). Acknowledging this, it is not surprising to note that the health services of Swaziland generally experience difficulties with adequately meeting the health needs of people living with HIV/AIDS. It is worth noting that the shortage of health workers in Swaziland compounds these difficulties (Ministry of Health of the Kingdom of Swaziland 2012). Hence, the Ministry of Health adopts the NARTIS programme in order to ensure sufficient coverage and effective care provision to people with HIV/AIDS. The NARTIS programme is a form of task shifting, which Callaghan et al. (2010) consider to be effective for addressing human resource challenges in HIV/AIDS care and treatment services. Apart from a pilot study in 2011, the effectiveness of the NARTIS programme has not been explored since its adoption in 2009. Given that nurses are the health professional group with a leading role in the NARTIS programme, an exploration of their perceptions of this programme will enhance understanding of this subject. Hence, this study explored the RNs' perceptions of the NARTIS programme in the Hhohho region of Swaziland.

The study reveals that the NARTIS programme is a worthwhile approach for ensuring the provision of care and treatment to people with HIV/AIDS, including those living in remote areas, a view that McNairy et al. (2012) echo in their study. Thus, participants frequently describe it as an effective approach despite the added responsibilities it creates for

nurses (Bodilenyane 2012; Colvin et al. 2010). The question now arises, what is effective about the NARTIS programme?

Participants recount that nurses are generally satisfied with their roles and responsibilities in the NARTIS programme, and often report increasing confidence in executing the same with increasing experience in ART initiation. While this outcome is similar to that in George et al.'s (2010) study, the degree of satisfaction and confidence participants report here is in part a function of the nature of the training in this programme. It is also in part a function of the ongoing support available for nurses, for example, in the form of mentorship, update training in ART initiation, reflective discussions and availability of expert patients.

Participants frequently report that the involvement of expert patients in the implementation process of the NARTIS programme is a potent strategy for improvement. This is because such an approach does promote nurses' understanding of patients' health needs and wants as well as indicates nurses' willingness to work with patients as partners in care. It is implicit from the participants' narratives that the NARTIS programme creates opportunities for partnership working between nurses and expert patients. Thus, strategies that will strengthen such a partnership will improve the effectiveness of this programme. Examples of such strategies include the provision of a point of care CD4 cell count testing machine and the scope of nursing of the Kingdom of Swaziland to health facilities and training both parties in their application. The application of these strategies, participants report, often results in timely decisions for ART initiations, consistency in the nurse-led ART initiation practice and strong nurse-patient relationships (Davies et al. 2013).

Although participants note that NARTIS programme is effective, the study data reveal that it is not devoid of constraints. Some of the health facilities do not have adequate number of consultation rooms to assess patients and establish their eligibility for ART initiation. This outcome is consistent with that in Uebel et al.'s (2013) and Cameron et al.'s (2012) studies of ART initiation. The collection of blood samples for baseline investigations in the laboratories is sometimes delayed because of problems with transportation. Working in the NARTIS programme can be stressful because of the limited number of nurses available at facility level. While these constraints can negatively impact the effectiveness of the NARTIS programme, they serve as a call for nurses to explore approaches to improve its functions.

Participants recognize that the nurse-led ART initiation as a highly skilled activity that involves caring and working with HIV-positive patients. Yet literature sources and outcome of

this study indicate that nurses lack knowledge in some areas of the practice of the nurse-led ART initiation.

Thus, training nurses in this practice will equip nurses with the necessary knowledge and skills on how to initiate patients on ART, promote understanding of the NARTIS programme and consistency in its implementation. Consistency in the implementation of this practice can be further enhanced if training adopts a team approach and involve expert patients as cofacilitators. Involving the latter as facilitators of training will cultivate positive attitudes among nurses, community members and other patients towards HIV/AIDS. The development of positive attitudes such as acceptance of patients as human beings, who are in need of care and compassion, will help in reducing the self-stigma patients' experience.

#### Limitations of the study

The study was only conducted in selected health facilities in the Hhohho region. The nurses in this region may be different from nurses of other regions in the context of their experiences and knowledge of the NARTIS programme. Thus, the richness of the data would have been enhanced if nurse from other regions were involved in the study. However, the findings of the study provide insight into NARTIS programme in terms of its effectiveness and how it can be improved.

#### Conclusions

The NARTIS programme is an effective strategy for providing care and treatment to people living with HIV/AIDS. Its introduction has improved the health of this population in the communities of the Hhohho region. Despite this, there are negative factors, such as limited number of consultation rooms and RNs, and limitation in nurses' knowledge that can sometimes interfere with the effectiveness of the NARTIS programme. The study data reveal approaches to alleviate or address these negative factors. Examples of them include the provision of training to nurses in NARTIS programme, and education of community members and patients on patients' rights. The provision of education on patients' rights may help in alleviating HIV/AIDS-related stigma.

#### Implication for nursing and health policy

The study findings have generated insight into the NARTIS programme and have contributed to the body of knowledge in this area of study. The findings revealed that nurses are not always equipped with the right skills and knowledge required for effective nurse-led ART initiation. The absence of the required skills and knowledge could result in the provision of substandard care and treatment. Hence, nurses on the

NARTIS programme need to be offered ongoing regular educational support in the form of, for example, update training and mentorship. Support for nurses is also needed in the areas of resources, such the provision of additional consultation rooms and point of care CD4 cell count testing machines at facility level. Added to this, the findings of the study, particularly the 'influences of the NARTIS programme' will assist the Swaziland Ministry of Health to develop policies and guidelines to improve the effectiveness of the practice of nurse-led ART initiation in Swaziland.

#### Author contributions

Study design: AH, AHM, PTS

Data collection: AH

Data analysis: AH, AHM, PTS

Study supervision: AHM, PTS

Manuscript writing: AH, AHM, PTS

Critical revisions for important intellectual content: AHM, PTS

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