

# Provision of Isoniazid Preventive Therapy: The Experiences of People Living with HIV

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## Abstract

Isoniazid preventive therapy (IPT) is a strategy that has been proposed by the National Department of Health of South Africa and the World Health Organization for people living with HIV (PLWH) to prevent latent tuberculosis (TB) progressing to active TB. This research focused on exploring and describing experiences of PLWH regarding IPT provision in the Ngaka Modiri Molema district in the North West province of South Africa. A qualitative, exploratory, contextual and descriptive research design was used for this study. Semi-structured individual interviews were conducted to collect data from PLWH. The sample size consisted of 14 participants and data saturation was reached at participant 11. A thematic data analysis was employed in this study. The study consisted of 10 female participants and 4 male participants. Three main themes emerged during interviews, namely factors that facilitate IPT provision and uptake, factors that inhibit the adherence of patients to IPT, and strategies to improve provision or adherence. The provision of IPT at a community health centre in Ngaka Modiri Molema district municipality was reported to be satisfactorily although challenges were also marked. IPT must be available at all times to ensure the promotion of PLWH adherence, continuity of care and retention in HIV care. In addition, screening of PLWH for active TB disease before they can be initiated should be a priority. PLWH should be supported and followed up through the directly observed treatment, short-course



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strategy to promote adherence and this can also be facilitated through adherence social clubs.

**Keywords:** experiences; people living with HIV; IPT provision; adherence

## **Introduction and Background**

Tuberculosis (TB) is one of the most challenging diseases globally. TB is regarded as a curable disease, but is still a major cause of morbidity and mortality globally as well as in South Africa. In 2014, an estimated 450 000 new cases of TB had been reported, and 61 per cent of the new cases had both TB and human immunodeficiency virus (HIV) infections (NDoH 2014, 1). TB has a huge impact on the lives of people living with HIV (PLWH). As the HIV infection advances, CD4 lymphocytes become reduced and depleted, and the immune system becomes unable to prevent TB (NDoH 2014, 70). Due to the weakened immune system, PLWH are unable to fight TB infection and they are also prone to develop active TB, which can be fatal and transmitted to other people (WHO 2015, 1). The majority of deaths which occur among PLWH are related to a weakened immune system which leads to the development of opportunistic infections such as TB.

Isoniazid preventive therapy (IPT) is a strategy that has been recommended by the WHO and was adopted by the National Department of Health (NDoH) in South Africa (Akolo et al. 2015, 105) to prevent dormant TB from developing into active TB (NDoH 2010, 2). Since the adoption of IPT, many benefits such as the prevention of TB improved both survival and life expectancies of PLWH. Furthermore, it has also been able to reduce the risk of TB by 33–67 per cent for up to 48 months (WHO 2010, 1). According to a study conducted by Jassel and Bishai (2010, S160), IPT has been found to be a cheaper strategy than the cost of treating TB and could therefore be used and be appropriate in countries that are poor and under-resourced.

Before starting PLWH on IPT, they must be assessed and screened for coughing that lasts for 24 hours or more, fever, weight loss and also drenching night sweats (NDoH 2016a, 94); this is to exclude active TB, to ensure that proper and relevant treatment is given, and to prevent deaths due to TB.

Being asymptomatic and disease-free may convince PLWH that they do not have to take IPT, and whenever they experience IPT side effects that they may discontinue taking it; this quite often leads to poor adherence, culminating in the development of opportunistic infections like TB as well as TB deaths (FHI 2011, 2). Furthermore, when PLWH are faced with challenges like the unavailability of IPT, forgetting to take the drugs, the drugs are not at their places of residence, and stigma, they may be discouraged from taking IPT and this may lead to poor retention in HIV care (Berhe, Demissie, and Tesfaye 2014, 3). Retention in care refers to the ongoing, regular engagement of a patient, from the time the disease is diagnosed, in a continuous comprehensive package

of follow-up assessment, prevention, treatment, care and support services (NDoH 2016b, 6)

PLWH have a heightened risk as well as an increased susceptibility to infections including TB (NDOH 2014, 70). When PLWH are provided with IPT and they are non-adherent, this often leads to poor health outcomes; morbidity and mortality of TB will increase and ultimately lead to increased healthcare costs as the effectiveness of IPT will be compromised (NDoH 2016b, 12).

## **Problem Statement**

IPT has been initiated and is provided in all primary healthcare (PHC) clinics, including community health centres (CHCs) (NDoH 2010, 3). However, PLWH who are on IPT in the Mafikeng subdistrict rarely complete the course of the treatment according to observations made by the researcher. They end up getting active TB as an opportunistic infection which is the leading cause of death in the North West province (NWPDOH 2010, 17). This study, therefore, seeks to explore the experiences of PLWH since no known study has been conducted on patients' experiences of IPT thus far.

## **Purpose of the Study**

The purpose of the study is to explore and describe the experiences of PLWH regarding IPT provision in order to derive strategies to improve IPT uptake in a CHC in the Mafikeng subdistrict.

## **Research Questions**

The study sought to answer the following research questions:

- “What are the experiences of PLWH regarding IPT provision in a CHC in the Mafikeng subdistrict?” and
- “How can IPT be promoted and accepted by PLWH?”

## **Research Design and Methods**

### **Research Design**

A qualitative approach was followed to collect data from the participants. An explorative, contextual and descriptive design was used. The rationale for choosing the design was that it allowed the researcher to explore and describe an in-depth understanding of the participants about the phenomenon under study (Burns and Grove 2009, 5). The study was exploratory as it entailed understanding the meanings individuals ascribe to a social or human problem (Creswell 2014, 4). The study was also contextual as the researcher is focused on a single event, case or specific phenomenon and its structural coherence, and the data were collected from PLWH within one CHC in Mafikeng (Grove, Burns, and Gray 2013, 66). Lastly, the study was descriptive as it

sought to achieve the exploration and description of phenomena in real-life situations (Grove, Burns, and Gray 2013, 49).

### **Population and Sampling**

The target population included all PLWH in the Mafikeng subdistrict who had been taking IPT for at least 6 weeks. Permission was obtained from the operational manager of the health centre in order to check the participants that were on IPT. After the names were obtained from the facility register for PLWH on antiretroviral therapy (ART), the researchers requested to check PLWH medical records in order to obtain the participants' contact details for recruitment and explanation of the study purpose. The sample size included a total of 14 participants determined by data saturation that was reached at participant 11. The ages of those participants ranged from age 25 to 55, of which 10 were female and 4 were male, and 8 were residing near the clinic (within 5 km) and 6 were staying further than 5 km from the clinic. They were chosen because they were able to provide rich data and a holistic perspective of the phenomenon, and they were regarded as knowledgeable or experts about the issues under study.

### **Data Collection**

PLWH were interviewed face-to-face using an individual in-depth unstructured interview in a private room at a CHC and conducted in a language they were comfortable with. Interviews were audio-recorded and permission to use an audio-tape during the interview was sought from and granted by the participants. The participants were requested to describe their experiences regarding IPT provision at the CHC in the Mafikeng subdistrict. Paraphrasing and probing were used to aid the interviews. Field notes were taken as they assisted the researcher in remembering and exploring expressions of the patients during the interviews.

### **Data Analysis**

Data were transcribed verbatim, read and reread in order to immerse the researchers into the data and make sense of information gathered. The researchers coded data and codes were grouped into subthemes and then themes were developed based on the emerged subthemes.

### **Measures to Ensure Trustworthiness**

To ensure the trustworthiness of the analysis, the researcher followed Lincoln and Guba's (1985, 86–87) criteria for credibility, transferability, dependability and confirmability. Credibility (internal validity) was ensured by having two researchers independently reading and coding the transcribed data. Transferability (external validity) was assured by providing a rich description (Creswell 2014, 201), sharing the results with content experts and conducting a further literature review. Confirmability (objectivity) and dependability (reliability) were assessed by comparing the transcribed data with extensive field notes taken during the interviews.

## Ethical Considerations

The study was granted ethical clearance (NWU 00667-17-A9) from the North-West University and permission to conduct the study was granted by the North West Provincial Department of Health and operational manager of the CHC. After obtaining consent to obtain the patients’ details from their files through the operational manager of the CHC, the participants were called. The researcher explained the purpose of the study to them, obtained their written consent and informed them about their rights and benefits. To guarantee anonymity, no names of participants and the facility were mentioned in the study. To ensure confidentiality all the research data were kept under lock and key. The collected and stored data will be kept for at least seven years and then destroyed.

## Results

The study was conducted at one CHC in the Ngaka Modiri Molema district municipality. A total of 14 participants participated in the study, 4 were male and 10 were female. Their ages ranged from age 25 to 55 and the level of education was grade zero or never attended school to matric (grade 12) level. The language used was known to all the participants as it was Setswana, the language of communication in Mafikeng and one that the participants were comfortable with to express their experiences.

### Experiences of PLWH regarding IPT Provision

Three themes emerged from the analysed data and were inclusive of factors that facilitate IPT provision and uptake, factors that inhibit IPT provision, and strategies to improve IPT provision or adherence.

**Table 1:** The themes, subthemes and categories that emerged from the data analysis

Themes	Subthemes	Categories
1. Factors that facilitate IPT provision and uptake	Organisational factors	1. Availability of IPT
		2. The positive attitude of nurses
		3. Management of IPT side effects
	Patient-related factors	1. PT is useful
		2. Adherence to IPT
		3. Benefits of IPT
2. Factors that inhibit the adherence of patients to IPT	Organisational factors	1. Unavailability of IPT
		2. Ruling out active TB
		3. Long queues and long waiting times
	Patient-related factors	1. Pill burden
		2. Patients followed instructions and did not have knowledge about IPT
		3. Adverse side effects
	Organisational and policy strategies	1. Strengthening the DOTS strategy
		2. Strengthening TB screening at each

Themes	Subthemes	Categories
3. Strategies to improve IPT provision or adherence		visit
		3. Prevention of stigma and discrimination
		4. Use of combination pill
		5. Use of adherence clubs' social clubs
	Patient-related strategies	1. Acceptance of one's own status
		2. Awareness campaigns by PLWH

### Theme 1: Factors that facilitate IPT Provision and Uptake

It was evident from the PLWH that there is adequate provision of IPT in the CHC in Mafikeng. PLWH indicated that after being diagnosed with HIV, they reported having received IPT which protects them from getting TB. Provision of IPT according to the participants assisted in reducing the number of people who were dying of TB.

IPT is given to all people living with HIV and I am taking it once daily and, in the morning, only. (Participant 1, female, 25 years old)

In addition, there are multiple factors that facilitate IPT provision and uptake by patients; these factors were categorised into organisational and patient-related factors.

#### *Subtheme 1: Organisational Factors*

The organisational factors were inclusive of the availability of IPT in the facility, the positive attitude of nurses, and the management of the side effects of IPT.

##### Availability of IPT

The availability of IPT in the facility was confirmed by PLWH as an important factor, especially in the promotion of adherence to IPT. Certain participants indicated that IPT was available at the CHC. They further alluded to the fact that owing to its availability it encourages them to come and collect it on a monthly basis. A PLWH indicated that:

When it is my return [review or follow-up] date to go to the clinic for collection of IPT, it had always been available, and I have never encountered any problems regarding its [IPT] availability. (Participant 2, female, 28 years old)

##### The positive attitude of nurses

A positive attitude also promotes dignified and respectful care to PLWH and serves as motivation for patients' adherence. PLWH expressed that they feel that they are accepted by nurses, educated about the reasons for taking IPT and are given support when they encounter any side effects, and that they adhered to IPT irrespective of its side effects. PLWH further emphasised that they are happy and grateful for the services they receive. A patient indicated that:

I am happy for the treatment, care, education and support we get from our nurses as it really helps us to adhere to treatment. (Participant 8, female, 43 years old)

Another patient added:

I am grateful of the way nurses talk to me, they really care for me and they treat me with dignity and respect. I am also happy about the treatment, education and support I get from them. (Participant 4, female, 45 years old)

These credits revealed that nurses indeed can be sources of motivation and support if their attitudes and behaviours positively affirm the PLWHs' expectations of dignified and respectful healthcare services.

### Management of IPT Side Effects

Some of the side effects which were indicated by the participants included mild side effects like pins and needles, mild rash, and nausea. Even though the participants had side effects they were very short-lived and manageable. The participants were still motivated to take IPT despite the side effects because they were given information before IPT initiation. However, it was not all the PLWH who were able to manage their side effects as others suffered adversely. It was revealed by a PLWH that:

I had pins and needles in my hands and feet, and I went to the clinic and they gave me another pill which made me feel better. (Participant 5, female, 32 years old)

Another participant added:

I continued taking IPT because I was educated by the nurses that I will feel dizzy, tired and have pins and needles in my hands and feet. I was informed that side effects will be temporary that is why I did not get worried. (Participant 6, female, 39 years old)

### *Subtheme 2: Patient-related Factors*

The provision and uptake of IPT were also promoted and facilitated by patient-related factors that included that IPT is useful, benefits of IPT and adherence to IPT.

#### IPT is Useful

PLWH viewed IPT as a useful preventive therapy as they had accepted it and they were also willing and ready to continue with the IPT intervention as it improved their health. Viewing IPT as being useful by PLWH encouraged patients to continue taking it because they had gained awareness of its usefulness, and this led to increased and sustained IPT adherence. Besides being a very useful tablet, it prevents active TB disease and it also improved their health status. One PLWH expressed that:

As a caregiver and a participant, I work daily with TB patients on a daily basis. Some have symptoms of tuberculosis but here I am I do not have TB thanks to IPT. HIV does not kill people, but people mostly die due to TB. (Participant 7, male, 43 years old)

### Adherence to IPT

Adherence to IPT is the responsibility of participants as well as the healthcare workers. The participants who were educated about IPT and the risk of developing TB before starting the treatment were revealed to have adhered better than those who were never given information. Since IPT is given for a duration of six to nine months, the participants confirmed that they adhered to IPT as they were taking it once in the morning and collected it only once per month at the clinics.

I am only taking it once in the morning and I am collecting it on a monthly basis. (Participant 8, female, 43 years old)

I will be taking it for six months and I am happy about that. (Participant 9, female, 42 years old)

### Benefits of IPT

PLWH verbalised that IPT offers them great benefits as it reduces pill burden thus instead of taking antiretroviral drugs (ARVs) and TB drugs they end up only taking ARVs and IPT. This is evident as IPT was reported to improve the health status of PLWH as TB is an opportunistic infection and a most common cause of death among PLWH. Hence, they find IPT very beneficial to prevent the progression of latent TB to active TB. These perceived benefits motivate PLWH to continue taking IPT, which promotes adherence to treatment and ultimately improves life expectancy. This was highlighted by the PLWH:

Taking IPT has improved my health status and I will end up not taking both the TB treatment and ARVs. (Participant 10, female, 40 years old)

I was coughing and had lack of appetite before I started IPT. After being given IPT the cough became suppressed, my appetite improved, and I started to gain weight. Thanks to IPT. (Participant 11, male, 33 years old) [NB: The participant was ruled out for active TB as the coughing was diagnosed as an upper respiratory tract infection]

## **Theme 2: Factors that Inhibit Adherence of Patients to IPT**

There are multiple factors that were reported to inhibit the adherence of patients to IPT. The factors that inhibit the adherence of patients to IPT were categorised into two subthemes, namely organisational and patient-related factors.

### *Subtheme 1: Organisational Factors*

There is always a challenge of drug unavailability in South African clinics. A few PLWH indicated that IPT was not available at times, highlighting the inconvenience,



frustrations and increased clinic visits which in combination culminate in non-adherence to IPT.

If IPT is not available when I come for my follow up treatment, I was given another date for collection and it gives me a lot of work. (Participant 14, female, 32 years old)

### Long Queues and Long Waiting Times

The emergence of TB/HIV and the implementation of other health programmes have brought challenges in PHC facilities. Clinics are invariably full of patients coupled with staff shortages. PLWH indicated that there are always long queues in the CHC, and they spent about four hours before they can receive assistance from the nurses. This has led to PLWH not adhering to their IPT as they have to wait for long periods and they then decided to stop the IPT on their own.

I am receiving IPT for the second time now. The first time I stopped [was] due to long queues and long waiting times. A person has to spend 3 to 4 hours before getting assistance. I have stopped due to the same reasons mentioned above. (Participant 1, female, 25 years old)

I wait for plus-minus four hours before I can be assisted by nurses. That is why I ended up stopping it. (Participant 2, female, 28 years old)

### *Subtheme 2: Patient-related Factors*

Some of the PLWH had reported that screening for active TB was not done before the provision of IPT and that they developed TB while on IPT, regardless of their reporting to the nurses of the symptoms thereof. This promotes the possibility that PLWH who have active TB could have been given IPT instead of the full TB regimen and this could also lead to the incorrect treatment being given, or the reactivation of active TB as well as IPT resistance.

Before being given IPT, I was not asked any screening questions, I developed tuberculosis a month after being started on IPT. (Participant 10, female, 40 years old)

I reported to the nurses about my night sweats and nothing was done about it. The next time I went to the private practitioner he diagnosed me as having TB by taking chest X-ray which indicated that I had pulmonary tuberculosis. (Participant 14, female, 32 years old)

It was revealed that PLWH are faced with pill burden issues as they do not only take IPT and ARVs but are also faced with other non-communicable diseases such as hypertension and diabetes mellitus. According to the participants, they felt discouraged as they reported that there were too many treatments for one person to cope with.

I had to take medications for hypertension, diabetes plus IPT. To me, they are a lot of medications. (Participant 3, male, 50 years old)

### Patients following Instructions without IPT Knowledge

Most PLWH indicated that they are taking IPT only because it was recommended by nurses and they did not even know why they were taking it. Some felt since they are not having active TB, they do not see the need for IPT.

I am only taking it because I have been told to take it. (Participant 6, female, 39 years old)

I was not told for how long I will be taking it and I am only taking it because I have been told to take it. (Participant 11, male, 33 years old)

I do not know the reason for taking that tablet as I do not have TB and I am healthy. (Participant 8, female, 43 years old)

### Adverse Side Effects

Most PLWH reported that they experienced adverse side-effects that were attended to at the CHC facility. Some participants reported side effects that were never managed and they ended up consulting private general practitioners.

Immediately after starting IPT, I started to vomit, feeling dizzy, have darker skin complexion, lack of energy and mental confusion. The doctor recommended only the diet for the dizziness but all other problems that I had were not attended. (Participant 9 female, 42 years old)

Other participants added,

I had itching of the skin; my head was spinning, and I had diarrhoea which I never had before. I went to the facility told the nurses, but nothing was done and then I decided to stop IPT. Since then I am not having the above-mentioned problems. (Participant 10, female, 40 years old)

I was taking IPT and as a result of side effects, I have decided to stop it and I am not prepared to take it any longer. (Participant 13, male, 28 years old)

## **Theme 3: Strategies to Improve Provision or Adherence**

Strategies have been suggested by the participants to improve the provision of IPT to further promote adherence; this included organisational and policy strategies and patient-related strategies.

### *Subtheme 1: Organisational and Policy Strategies*

#### Strengthening the Directly Observed Treatment Short-Course (DOTS) Strategy

PLWH verbalised that DOTS should be followed as it is, in order to reduce the defaulter rate and to prevent resistance to IPT. The participants further verbalised that there is a

need to receive support through family members, community workers and significant others to ensure that IPT is taken and for motivation so that successful completion of therapy can be achieved.

DOTS supporters just like in TB should be used to motivate PLWH. (Participant 5, female, 32 years old)

PLWH who have been given IPT, the relatives should ensure that one is taking it. (Participant 3, male 50 years)

### Strengthening TB Screening at each Visit through Screening PLWH to Rule out Active TB

Screening PLWH to rule out active TB disease was reported as of vital importance. This will ensure that PLWH receive appropriate and relevant treatment. Some of the PLWH indicated they were not asked the four screening questions before being initiated on IPT and others had even developed TB. The participants also verbalised that they were not screened at every visit. They were only asked about any problems they had, and given their IPT and a follow-up date of when to come back.

They should be asked at every visit whether they are on IPT or have been on it. If they are not on the pill or had never been on it they should be screened for TB symptoms and if they do not have features of TB they need to be started immediately on it. (Participant 1, female, 25 years old)

I was not screened at every visit. (Participant 7, male, 43 years old)

### Prevention of Stigma and Discrimination

In trying to avoid stigma, PLWH highlighted that there should not be different queues in the health centre as this may increase negative labelling of PLWH. Community members know which consultation room is used specifically for PLWH.

Different queues should be avoided at the clinic because people can notice that we are collecting treatment for HIV. (Participant 2, female, 28 years old)

### Another PLWH added

And only one queue should be made for everybody so that people can stop labelling us. (Participant 5, female, 32 years old)

### Use of a Combination Pill

The participants expressed that the use of a combination pill of ART and isoniazid will benefit them as they will only be taking one pill instead of many tablets.

Combination pill [ART and isoniazid] can be made through the government so that an individual can just take one pill instead of many. (Participant 11, male, 33 years old)

A combination pill [ART and isoniazid] will be effective as one does not have to take too many pills. (Participant 13, male, 28 years old)

### Use of Adherence Clubs

PLWH suggested the use of adherence clubs to be used for both ART and IPT as this can reduce the length of the queues in the facility.

Adherence social clubs can be utilised where people can go and collect their medications without having to follow long queues. (Participant 6, female, 39 years old)

### *Subtheme 2: Patient-related Strategies*

#### Awareness Campaigns by PLWH

It is of vital importance for healthcare teams and PLWH to conduct awareness campaigns in order to impart knowledge to those who do not have the knowledge regarding IPT and to bring them on board. PLWH verbalised that they need to conduct awareness campaigns.

Health talks should be given at clinics about the importance of taking IPT and everybody must be educated about the importance of IPT. (Participant 9, female, 42 years old)

#### Acceptance of One's own Status

Accepting one's HIV status was a motivational factor, especially regarding IPT adherence, and it was easy for PLWH to accept IPT just like they had accepted ARVs. The participants who disclosed their HIV status indicated that they had accepted also to take IPT.

The main reason for me to take IPT was that, I am aware that I have HIV, have accepted the status and that IPT is provided to all PLWH in order to prevent TB. (Participant 8, female, 43 years old)

## **Discussion**

The study findings reported both challenges and benefits with regard to IPT provision as well as the strategies to promote IPT provision and uptake. IPT needs to be available at all times in the facilities so that PLWH are motivated to come back for their follow-up visits; this will lead to improved utilisation of healthcare services to improve their life expectancy as well as their chances of survival. When the immune system is improved, opportunistic infections, as well as TB-related deaths, are reduced. Thus, the improved immune system leads to a reduction in opportunistic infections as well as reduced death rates. A similar study indicated that, as a result of improvement of the immune system, opportunistic infections as well as TB-related deaths are reduced or prevented (Goswami et al. 2012, 1).

According to Kuwawenaruwa et al. (2020, 2), when medicines are available at healthcare facilities, patients honour the dates of their appointments for their follow-up medications, they develop trust and display a positive attitude to the healthcare system as it gives them what they need. Consequently, adherence to medication is promoted and improved. Operational managers of the PHC and CHC facilities have a vital role in ensuring the availability of medicines at all times. By ensuring the availability of medicines throughout, the lives of PLWH will be spared, their health status will be improved, and in turn, increased healthcare costs associated with non-adherence can be prevented (Jimmy and Jose 2011, 156).

Furthermore, positive attitudes of nurses are enablers of patient treatment. The positive attitude of nurses is necessary as it encourages patients to continue taking medications as prescribed (Ndou, Maputle, and Risenga 2016, 3). When professional nurses display a positive attitude to patients, PLWH will be retained in HIV care. Retaining PLWH in HIV care is an advantage for them as they can be attended to immediately when they become sick and many deaths can be prevented (Magnus et al. 2013, 297).

The perceived usefulness of IPT motivated PLWH to comply with and honour follow-up visits, improved adherence to IPT and improved retention in HIV care. IPT was reported to be useful given its importance in preventing the progression of infection to primary complex in recently infected asymptomatic individuals. Additionally, it is also used to prevent the development of active TB in PLWH (NDoH 2014, 100; WHO 2012, 23).

PLWH reported that they had adhered to IPT as a result of its availability at facilities, and the positive attitude displayed by professional nurses to them, and some PLWH were educated and counselled before being initiated on IPT. Mindachew et al. (2011, 5–6) and Shayo et al. (2015, 1) highlighted that PLWH need to be provided with information regarding IPT to promote and enhance their self-motivation, participation and co-operation with treatment. Providing such health information to PLWH ensures their full understanding of the reasons for taking IPT, benefits thereof while at the same time it encourages adherence to preventive therapy and promotes retention in HIV care.

It was also evident that IPT was reported by most PLWH as giving them protection against having active TB and this motivated PLWH to continue taking it. Owing to the perceived benefits, most of PLWH reported good adherence, IPT also promoted retention in HIV care and the health status of PLWH improved. IPT benefits PLWH as it suppresses dormant TB and prevents development to active TB disease (Golub et al. 2015, 643). Furthermore, the suppression of dormant TB leads to improved chances of survival; deaths which are likely to occur as a result of TB become reduced (Golub et al. 2015, 643). This is a clear indication that when PLWH perceive IPT as being beneficial to them, they are likely to adhere to it owing to the perceived benefits which include improvement of their health status; ultimately more lives would be spared, and this can lead to reduced costs incurred by the department of health.

There are many factors that were reported in this study. Firstly, it is difficult and challenging for PLWH to complete the full course of IPT when they do not find it in their facilities when they need it (Okoli and Roets 2016, 1080). Furthermore, patients become frustrated, disgruntled, and lose hope and faith in the healthcare system, and this ultimately and potentially leads to poor adherence. There was a report of a lack of TB screening among PLWH that can be due to long queues, and prolonged waiting times as some patients had to wait for more than four hours before they could be assisted. This can also lead to PLWH having active TB while on IPT. Furthermore, the shortage of professional nurses in rural settings has been reported as a challenge (Williams, Peter, and Goon 2015, 343). This results in the failure of nurses to screen PLWH before initiating them on IPT owing to the increased workload caused by the shortage of staff and disproportional nurse-patient ratios.

Patients that use the public healthcare facilities in South Africa have a challenge of long waiting times for services to be rendered (NDoH 2015, 7). It is not surprising in this study when some of the PLWH waited for more than four hours before they could be assisted, and this frustrated them. In addition, the pill burden was also found to be a challenge in IPT provision. Some of the patients were on other chronic medications inclusive of asthma, diabetes mellitus and hypertension. These patients had to take treatment for their chronic conditions with the inclusion of ART as well as IPT. The administering of many drugs at the same time resulted in patients not adhering to IPT owing to unpleasant side effects which encouraged them to stop taking IPT on their own. The findings of this study are in agreement with the study findings by Swaminathan, Padmapriyadarsini and Nareden (2010, 1377) which indicated that since the discovery of HIV and AIDS, challenges like pill burden, non-adherence to medications as well as drug interactions have been encountered by PLWH.

When PLWH are offered IPT without being provided with the necessary information about its purpose and duration, they do not become convinced that it is important to take it (William, Peter, and Goon 2015, 338). The lack of IPT knowledge was reported to lead to poor adherence by PLWH; they may develop opportunistic infections like TB as a result of a suppressed immune system and ultimately increased deaths will occur if the PLWH are not treated for TB (Rutherford et al. 2012, 4). In addition, providing treatment to patients without adequate education is a challenge as patients tend to be not convinced of the need to take treatment and this may lead to poor adherence; the condition of the patients may become advanced and deterioration may occur (Jimmy and Jose 2011, 156). Poor adherence to IPT may also lead to overstretching and depletion of the healthcare budget because of treating patients who are continuously ill due to opportunistic infections.

The findings of the study are in line with the guidelines of the Department of Health (NDoH 2014, 43) which indicated that IPT has minor and less serious side effects which could be managed at facility level by reassuring patients or treating them according to the symptoms that they have. Grant et al. (2010, S35) further support that IPT side

effects are less serious. However, this study also revealed that other participants developed adverse side effects like hypersensitivity rash, vomiting, darker skin complexion and reported them to the respective nurses who did nothing to assist them. Adverse side effects need to be managed and attended to as soon as they are reported by PLWH as they have the ability to lead to poor IPT adherence and the development of opportunistic infections (Adams et al. 2014, 9). Furthermore, side effects can discourage them from adhering to prescribed medications including preventive therapy (Makunjola, Tadesse, and Booth 2014, 5). This clearly indicates that adverse side effects can occur among PLWH, even though only a small number of people are affected. Most of these issues can be resolved through the suggested strategies discussed below.

There is a need to strengthen the DOTS strategy to improve adherence to IPT as well as to ensure continuity of care among PLWH. With the DOTS strategy, treatment supporters support the patient while taking treatment (NDoH 2014, 56). The DOTS strategy ensures that patients are supported, monitored and supervised by DOTS supporters as they take their medications. This was in line with Giyose and Tshotsho (2015, 364). Consequently, patients can be monitored closely, compliance will be ensured and there will be early detection of adverse side effects (NDoH 2014, 56).

Screening PLWH before initiation of IPT is also a strategy proposed by the participants in the study. Screening PLWH at each contact with the healthcare system ensures early detection of TB, TB treatment is initiated and started timeously, the transmission of TB from one person to the other is minimised and many deaths which occur as a result of TB are prevented (Turinawe et al. 2016, 2). Failure to screen PLWH on a continuous basis is detrimental to the health of PLWH as active TB may not be detected early, and they can be placed on IPT while they are supposed to be on anti-TB treatment. Therefore, despite long queues, long waiting times and the shortage of staff, intensified TB screening of all PLWH needs to be conducted to improve the health status and life expectancy of PLWH.

In addition, PLWH felt to be prone to stigma and they internalised it. HIV-related stigma and discrimination are a challenge to PLWH. They indicated that they were being sent to the specified labelled rooms (exterior, isolated and distinguished consulting rooms) for their medications which therefore promote labelling by other patients. According to Horter et al. (2017, 57), whenever PLWH experience stigma, they become reluctant to attend healthcare facilities as they are afraid that healthcare workers might breach their confidentiality and that their positive HIV status may be made publicly known. Internalised stigma can be prevented among PLWH by encouraging them to disclose their status in order to be supported on an ongoing basis. Additionally, HIV-related stigma can be prevented through educating people regarding HIV and AIDS, by conducting awareness campaigns to ensure acceptance of the condition, and to allay fears and misconceptions regarding HIV and AIDS (UNAIDS 2012, 19).

It was evident that there is a need for a combination pill (IPT combined with ART) as taking too many pills was a challenge to PLWH. However, it was also advised that in order to ensure success and effectiveness of the IPT programme, adherence to medication must be ensured and promoted. Furthermore, a combination pill will assist PLWH in accepting IPT owing to the reduced side effects and pill burden, and lead to improved retention to care (Manikandan 2012, 199–200). Social adherence clubs for PLWH will enable them to collect their IPT without going to health facilities. This will assist in reducing the influx of patients, long queues, and stigma and discrimination, thereby benefiting PLWH (Venables et al. 2016, 22). This is supported by the South African National Department of Health which advocates that adherence clubs need to be formed where stable patients can be grouped together for a routine check-up and follow-up for prescriptions (NDoH 2016b, 23). The awareness campaigns about IPT, its benefits, side effects, duration of taking treatment, the purpose of taking it provided PLWH and healthcare providers can benefit other PLWH and newly diagnosed patients to adhere to IPT and this will further lead to a heightened sense of self-understanding (Steward et al. 2008, 1234). It is through health education and counselling that patients accept their HIV status and ensure full engagement of PLWH with HIV care, access to social support, and quality counselling. Acceptance of a positive HIV status motivates PLWH to have a positive attitude regarding HIV and AIDS (Horter et al. 2017, 52–59).

## **Limitations of the Study**

The main limitation of the study was that the majority of the participants (10) were women and only 4 were men. This is owing to the observation fact that the majority of men are generally reluctant to seek healthcare services and therefore women are the major healthcare seekers. The study was conducted in one CHC in Mafikeng subdistrict and the data were collected in one facility only, and the findings of the study can therefore not be generalised to other settings.

## **Recommendations**

The study recommends that the IPT programme be incorporated into the training curriculum for undergraduate students to strengthen the integration of TB/HIV programmes and to improve pre-service skills for nurses regarding IPT. Furthermore, regular and continuous in-service training of professional nurses must be conducted to keep them abreast of any changes pertaining to IPT. It is further recommended that continuous support, mentoring, monitoring and evaluation the TB/HIV programme be done to identify IPT challenges and to take corrective action where necessary. IPT must be available at all times to ensure the promotion of PLWH adherence, continuity of care and retention in HIV care. In addition, screening of PLWH for active TB disease before they can be initiated should be a priority. PLWH should be supported and followed up through DOTS to promote adherence and this can also be facilitated through adherence social clubs. Future research on the experiences of professional nurses who provide IPT to PLWH in the Ngaka Modiri Molema district needs to be conducted and there is still a need to fully scale-up the uptake of IPT and to determine the effectiveness of IPT



among PLWH by using quantitative methods to generalise the reported effectiveness from this study.

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## References

- Adams, L. V., E. A. Talbot, K. Odat, H. Blunt, and K. R. Steingart. 2014. "Interventions to Improve Delivery of Isoniazid Preventive Therapy: An Overview of Systematic Reviews." *BMC Infectious Diseases* 14:281. <https://doi.org/10.1186/1471-2334-12-281>.
- Akolo, C., F. Bada, E. Okpokoro, O. Nwanne, S. Iziduh, E. Usoroh, T. Ali, V. Ibeziako, O. Oladimeji, and M. Odo. 2015. "Debunking the Myths Perpetuating Low Implementation of Isoniazid Preventative Therapy amongst Human Immunodeficiency Virus-Infected Persons." *World Journal of Virology* 4 (2): 105–112. <https://doi.org/10.5501/wjv.v4.i2.1051>.
- Berhe, M., M. Demissie, and G. Tesfaye. 2014. "Isoniazid Preventive Therapy Adherence and Associated Factors among HIV Positive Patients in Addis Ababa, Ethiopia." *Advance in Epidemiology* 1–6. <https://doi.org/10.1155/2014/230587>.
- Burns, N., and S. K. Grove. 2009. *The Practice of Nursing Research*. 6th ed. St Louis: Elsevier Saunders.
- Creswell, J. W. 2014. *Research Design*. 4th ed. Thousand Oaks: Sage.
- FHI (Family Health International 360). 2011. "Moving Evidence into Action. Isoniazid Preventive Therapy for the Prevention of Tuberculosis in People living with HIV AIDS." Accessed 27 February 2020. [https://www.fhi360.org/sites/default/files/media/documents/Isoniazid%20Preventive%20Therapy%20for%20the%20Prevention%20of%20Tuberculosis%20in%20People%20Living%20with%20HIV-AIDS%20Fact%20Sheet\\_0.pdf](https://www.fhi360.org/sites/default/files/media/documents/Isoniazid%20Preventive%20Therapy%20for%20the%20Prevention%20of%20Tuberculosis%20in%20People%20Living%20with%20HIV-AIDS%20Fact%20Sheet_0.pdf).
- Giyose, P., and N. Tshotsho. 2015. "Challenges Experienced by Health Care Workers in Implementing the National Multidrug Resistance Tuberculosis Guidelines." *African Journal for Professional Health, Education, Recreation and Dance* Suppl 2 (2): 360–3.
- Golub, J. E., S. C. Cohn, V. Saraceni, S. C. Calvalcante, A. G. Pacheco, L. H. Moulton, and R. E. Chaisson. 2015. "Long Term Protection from Isoniazid Preventive Therapy for Tuberculosis in HIV Infected Patients in a Medium Burden Tuberculosis Setting: The TB/HIV in Rio (THRIO) Study." *Clinical Infectious Diseases* 60 (4): 639–45. <https://doi.org/10.1093/cid/CIU849>.

- Goswami, N., L. B. Godkowski, D. Bissette, T. Ostbyte, J. Saukonon, and J. S. Stout. 2012. "Predictors of Latent Tuberculosis Treatment Initiation and Completion at a US Health Clinic: Prospective Cohort Study." *BMC Public Health*. <https://doi.org/10.1186/1471-2458-12-468>.
- Grant, A. D., K. T. Mngadi, C. L. van Halsema, M. Luttig, K. L. Fielding, and G. J. Churchyard. 2010. "Adverse Events with Isoniazid Preventive Therapy: Experience from a Large Trial." *AIDS* 24 Suppl 5: S29–36. <https://doi.org/10.1097/01.aids.0000391019.10661.66>.
- Grove, S. K., N. Burns, and J. R. Gray. 2013. *The Practice of Nursing Research: Appraisal, Synthesis and Generation of Evidence*. 7th ed. St. Louis: Elsevier.
- Horter, S., Z. Thabethe, V. Dlamini, V. Bernays, B. Stringer, S. Mazibuko, L. Dube, B. Rush, and K. Jobapuntra. 2017. "'Life is so easy on ART once you Accept it': Acceptance, Denial and Linkage to HIV Care in Shiselweni Swaziland." *Social Science and Medicine* 176:52–59. <https://doi.org/10.1016/j.socscimed.2017.01.006>.
- Jassel, M. S., and W. R. Bishai. 2010. "Epidemiology and Challenges to the Elimination of Global Tuberculosis." *Clinical Infectious Diseases* 50 (03): S156–S164. <https://doi.org/10.1086/651486>.
- Jimmy, B., and J. Jose. 2011. "Patient Medication Adherence: Measuring in Daily Practice." *Omran Medical Journal* 26 (3): 155–59. <http://doi.org/10.500/omj2011.38>.
- Kuwawenaruwa, A., K. Wyss, K. Wiedenmayer, E. Metta, and F. Tediosi. 2020. "The Effects of Medicines Availability and Stock-Outs on Household's Utilization of Healthcare Services in Dodoma Region, Tanzania." *Health Policy and Planning*.
- Lincoln, Y. S., and E. G. Guba. 1985. *Naturalistic Inquiry*. Newbury Park: Sage. [https://doi.org/10.1016/0147-1767\(85\)90062-8](https://doi.org/10.1016/0147-1767(85)90062-8).
- Magnus, M., J. Herwehe, R. Murtazza-Rossini, M. Reine, D. Cuffie, D. Gruber, and M. Kaiser. 2013. "Linking and Retaining HIV Patients I Care: The Importance of Provider Attitudes and Behaviors." *AIDS Patient Care and STDS* 27 (5): 297–303. <https://doi.org/101089/apc.2012.0423>.
- Makunjola, T., H. B. Tadesse, and A. Booth. 2014. "Factors Associated with Adherence to Treatment with Isoniazid for the Prevention among People Living with HIV. A Systematic Review of Qualitative Data." *PLOSOne* 9 (2): 1–13. <https://doi.org/10.1371/journal.pone.0087166>.
- Manikandan, S. 2012. "Treating Tuberculosis: Time to Introduce Fixed-Dose Combinations." *Journal of Young Pharmacists* 4 (4): 99–200. <https://doi.org/10.4103/0975-1483.104362>.

- Mindachew, M., W. A. Deribe, F. Tessema, and S. Biadgilign. 2011. "Predictors of Adherence to Isoniazid Preventive Therapy among HIV Positive Adults in Addis Ababa, Ethiopia." *BMC Public Health* 11:916. <https://doi.org/10.1186/1471-2458-11-916>.
- Ndou, T. V., S. M. Maputle, and P. R. Risenga. 2016. "HIV Positive Patient's Perceptions of Care Received at Selected Antiretroviral Therapy Clinic in Vhembe District, South Africa." *African Journal of Primary Health Care and Family Medicine* 8 (2): 1–6. <https://doi.org/10.4102%2Fphcfm.v8i2.926>.
- NDoH (National Department of Health). 2010. *Guidelines for Tuberculosis Preventive Therapy among HIV Infected Individuals in South Africa*. Pretoria: NDoH.
- NDoH (National Department of Health). 2014. *National Tuberculosis Management Guidelines*. Pretoria: NDoH.
- NDoH (National Department of Health). 2015. *National Policy on the Management of Waiting Time in our Patients Departments*. Pretoria: NDoH.
- NDoH (National Department of Health). 2016a. *Managing TB in a New Era of Diagnostics*. Version 3. Pretoria: NDoH.
- NDoH (National Department of Health). 2016b. *Adherence Guidelines for HIV, TB and NCD. Policy and Service Delivery Guidelines for Linkage to Care, Adherence to Treatment and Retention in Care*. Pretoria: NDoH.
- NWPDH (North West Provincial Department of Health). 2010. *Five Year Strategic Plan 2010/11–2014/15*. Mafeking: Provincial Department of Health.
- Okoli, E. I., and L. Roets. 2016. "Health System Challenges: An Obstacle to the Success of Isoniazid Preventive Therapy." *Issues in Public Health* 106 (11): 1079–1081. <https://doi.org/107196/SAMJ106111.10741>.
- Rutherford, M. E., R. Ruslami, W. Maharani, W. Yulita, S. Lovell, R. Crevel, B. Allisjahbana, and P. C. Hill. 2012. "Adherence to Isoniazid Preventive Therapy in Indonesian Children: A Quantitative and Qualitative Investigation." *Journal of Acquired Immune Deficiency Syndrome* 54:71–77. <https://doi.org/10.1186/1756-0500-5-7>.
- Shayo, G., C. Moshiri, S. Aboud, M. Bakari, and F. M. Mugusi. 2015. "Acceptability and Adherence to Isoniazid Preventive Therapy in HIV Infected Patients Clinically Screened for Latent Tuberculosis in Dar es Salaam, Tanzania." *BMC Infectious Diseases* 15 (368): 1–8. <https://doi.org/10.1186/s12879-015-1085-7>.
- Steward, W., G. M. Herek, J. Ramakrishna, S. Bharat, S. Chordy, J. Wrubel, and M. L. Elcstrand. 2008. "HIV Related Stigma: Adapting a Theoretical Framework for Use in India." *Epub* 67 (8): 1225–35. <https://doi.org/10.1016/j.socscimed.2008.05.032>.

- Swaminathan, S., C. Padmapriyadarsini, and G. Nareden. 2010. "HIV Associated Tuberculosis: Clinical Infectious Diseases." 50 (10): 1377–86. <https://doi.org/10.1086/652147>.
- Turinawe, K., G. Vandebriel, D. Lowronce, F. Ukwindi, P. Mutwa, K. Boer, G. Mutembayle, D. Tugizimana, S. Nsanzimana, E. Pevzner, A. Howard, and M. Gazana. 2016. "Operating Characteristics of Tuberculosis Screening Tool for People with HIV in Outpatient Care and Treatment Services, Rwanda." *PLOS ONE* 11 (9): 1–14. <https://doi.org/10.1371/journal.pone.0163462>.
- UNAIDS. 2012. *UNAIDS Guidance Notes*. Geneva: UNAIDS.
- Venables, E., J. K. Edward, S. Bast, W. Etienne, K. Khabela, and H. Byggreave. 2016. "'They just could Pick and Go'. The Acceptability of an Integrated Medication Adherence Club for HIV and Non-Communicable Diseases Patients in Kibera Kenya." *PLOS one* 11 (10). <https://doi.org/10.1371/journal.pone.0164634>.
- WHO (World Health Organization). 2010. *Guidelines for TB Preventive Therapy among HIV Infected Individuals in South Africa*. Geneva: WHO.
- WHO (World Health Organization). 2012. *WHO Policy on Collaborative TB/HIV Activities*. Geneva: WHO.
- WHO (World Health Organization). 2015. *Adverse Events associated with the Use of Isoniazid Preventive Therapy among People Living with HIV. Information Note*. Geneva: WHO.
- Willams, N. C., Z. P. Peter, and D. T. Goon. 2015. "Experiences of HIV Positive Clients Defaulting Isoniazid Preventive Therapy in King William's Town Buffalo City Municipality, Eastern Cape Province, South Africa." *African Journal for Physical Health Education, Recreation and Dance* 21 (22): 328–347.