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A qualitative exploration of doctors and nurses experiences on the management of tuberculosis and HIV co-infection in a tuberculosis-HIV high burden community in northern KwaZulu-Natal, South Africa

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Abstract

South Africa is faced with a huge challenge of addressing the high burden of tuberculosis-human immune virus (TB-HIV) co-infection, and this challenge is more pronounced in the province of KwaZulu-Natal which has one of the highest burdens of TB-HIV co-infection in the world. The study explored the experiences of doctors and nurses with regard to the management of tuberculosis and HIV co-infection in a TB-HIV high burden community in northern KwaZulu-Natal, South Africa. The particular focus was to provide insight and to inform policy and programme development for effective management of TB-HIV co-infection in the TB-HIV high burden community of northern KwaZulu-Natal. An interpretivist exploratory qualitative approach was employed through individual semi-structured interviews of 16 participants comprising eight doctors and eight nurses, with a total interview time of 8.95 hours. Purposive sampling was used to select the doctors and nurses from the public and private sector of the TB-HIV high burden community of northern KwaZulu-Natal. Thematic analysis was used to analyse the data. Five key themes emerged from this study and these themes were discussed together with the sub-themes based on the various participant responses. The five key themes were practical experience about the management of TB-HIV co-infection; access to information and training on the management of TB-HIV co-infection; challenges and concerns about the management of TB-HIV co-infection; perception about local beliefs; and knowledge of policies and guidelines. Overall, this study highlights barriers that hamper the effective management of TB-HIV co-infection in northern KwaZulu-Natal. Recommendations of this study point towards an urgent need to scale up the management of TB-HIV co-infection through effective policies, improved capacity and infrastructure, stronger partnerships of all stakeholders, and further research.

Introduction

Globally, TB-HIV co-infections are responsible for approximately 400,000 deaths annually, of which low- and middle-income countries carry almost 95 per cent of the global burden of TB and HIV.[1] Fatalities of TB-HIV co-infection are more pronounced among people of low socio-economic status because of the difficulties of dealing with the situation.[2] TB and HIV co-infection is a deadly duo that remains a major global public health problem, particularly so because TB and HIV potentiate each other through processes that are still not well understood, and this deadly duo is among the main causes of morbidity and mortality worldwide.[3] TB-HIV co-infection is also a major public health problem because the complications of drug interactions and the resurgence of multi-drug resistant TB (MDR-TB) and extensively drug resistant TB (XDR-TB) tend to spiral the TB-HIV co-infection out of control, especially in resource-poor settings.[4,5] The situation is more pronounced among children, largely due to diagnostic difficulties in TB-HIV high-burden societies.[2,6]

The Southern Africa region bears the greatest brunt of TB-HIV co-infection in the African continent as more than 50 per cent of all new TB cases which have exploded to approximately 260 per 100 000 population are co-infected with HIV-1.[7,8] South Africa is among the worst affected countries, as the management of the dual epidemic poses a clinical, socio-economic, and policy challenge.[4,5]

Although in recent years, there have been laudable strides towards addressing the challenge of TB and HIV in South Africa, the South African situation of TB-HIV co-infection can be regarded as a national emergency that requires urgent escalation of the public health response of this double burden of disease.[9] Despite constituting only about 0.7 per cent of the world's total surface area, South Africa contributes approximately 17 per cent of the global burden of HIV, which at approximately 5.6 million people, it is the highest number of people living with HIV in the whole world.[1,9] At the same time, South Africa is reported to have the second highest incidence of TB per capita in the world, which suggests that South Africa carries a high burden of TB.[10] The high burden of TB-HIV co-infection is further complicated by the resurgence of multi drug resistant TB (MDR-TB) and extensively drug resistant TB (XDR-TB) in South Africa.[11]

The South African province of KwaZulu-Natal is reported to have one of the greatest burdens of TB-HIV co-infection in the whole world, and this poses challenges to the affected communities and to health care service providers such as doctors and nurses.[9] In most parts of KwaZulu-Natal, more than 90 per cent of all new cases of TB are co-infected with HIV.[12]

The impact of TB-HIV co-infection in South Africa, particularly in the province of KwaZulu-Natal is to such an extent that it presents diagnostic obstacles and treatment complications.[13] Health care service providers such as doctors and nurses are often expected to bring solutions to the disease burdened communities such as in many parts of KwaZulu-Natal due to the major challenge posed by TB and HIV co-infection.[9]

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The purpose of this study was to explore the experiences of doctors and nurses with regard to the management of TB and HIV co-infection in a TB-HIV high burden community in northern KwaZulu-Natal, South Africa, in order to provide insight and to generate ideas to inform policy and programme development for effective management of TB and HIV co-infection in this region.

Materials and Methods

Study subjects and settings

This study was conducted in one of the local authority areas of a north-eastern District of the KwaZulu-Natal province of South Africa. With reference to the local telephone directory, the doctors and nurses in the public and private sector were telephonically contacted and briefed about the study and a participant information sheet was sent by email. Those doctors and nurses who showed willingness to participate were registered as participants and appointments for the individual face-to-face semi-structured interviews confirmed. Four nurses and four doctors from the public sector and four nurses and four doctors from the private sector were recruited.

Ethical approval

Ethics approval was obtained through the University of Liverpool's Ethics Committee in the United Kingdom, and local ethics approval was obtained through the Ethics Committee of Pharma Ethics in South Africa.

Data collection procedures

An interview guide was developed and used, and the main topic areas assessed included: practical experience about the diagnosis and management of tuberculosis and HIV co-infections, access to information and training about the management of tuberculosis and HIV co-infections, concerns about the management of tuberculosis and HIV co-infections, perceptions about local beliefs that could influence the management of tuberculosis and HIV co-infections, knowledge about policies and guidelines for the management of tuberculosis and HIV co-infections. The interview guide ensured that probes and explorations during interviews were focused within the predetermined enquiry areas, although questions were not necessarily asked in any particular order during the interviews.

Sixteen individual semi-structured interviews were conducted in English in the doctors' and nurses' private offices, and each interview lasted between 30 and 45 minutes. Data was recorded by audio-tape to ensure that the raw data of each interview was captured and then transcribed so that written records of each interview could be obtained and then analysed.

Pilot testing

Pilot interviews were conducted with a nurse and a doctor from the TB-HIV high burden community of northern KwaZulu-Natal. Since the pilot test resulted in no significant changes to the interview guide, the two pilot interviews were included in the final analysis.

Data analysis

Thematic content analysis was the qualitative data analysis method that was employed in this study.[14] In this context, the researcher personally transcribed the verbatim quotes from the audio recordings of each interview into text, carefully read each transcript for content, highlighted interesting quotes and put them in one column on each transcript, and created another column with more interesting shorter quotes.[14] This reduced the volume of data per transcript, and a comparison of the highlighted text and the shorter quotes was made through all the transcripts, such that emerging patterns were identified, coded and analysed by clustering them into themes and sub-themes.[2] At each step of this process, the researcher interpreted the data by searching for core meanings of the words, feelings, thoughts and nuances described in the transcripts, and to see how these related to the research question in such a way that specific phenomena could be ultimately categorised.[15] Comparisons were made between doctors and nurses in terms of whether they had experience in the public or private sector of the northern KwaZulu-Natal study setting, and in terms of their gender, ethnicity, age, and work experience.

The strategies used to enhance the rigour or trustworthiness of this research study were: audit trail, thick descriptions, reflexivity and member checking.[10]

Results

There were five themes obtained from the interviews, and each theme had sub-themes as summarised in Table 1.

Theme 1: Practical experience about the management of TB-HIV co-infection

Participants' practical experiences about the management of TB-HIV co-infection were varied as some participants indicated that they played a bigger role while others said they played a limited role.

Sub-theme 1.1: Sense of purpose to care for patients

The majority of participants expressed a sense of duty to serve as the main reason why they chose their profession in the first place.

A1: *I think I have played a part there (…) and… I'm still trying my level best to be a good doctor (…).*

It was interesting to see that some doctors still took their profession seriously and

Table 1. An index of the key sub-themes that emerged from the 16 interviews

Sub-categories/Sub-themes	
1.1	Sense of purpose in caring for patients
1.2	Management of patients done as a team
2.1	Information not formally provided
2.2	Information available through sharing with colleagues or through own search
2.3	Uncertainty about opportunities for advancement and training
3.1	Fear of exposure to infection
3.2	Shortage of staff
3.3	Inadequate facilities
3.4	Lack of supervision, mentoring and training
3.5	Delay in getting diagnostic test results
3.6	Language barrier
4.1	Socio-cultural beliefs are an obstacle to the management of TB-HIV co-infections
4.2	Socio-cultural beliefs are an opportunity to enhance management of TB-HIV co-infection
4.3	Coordination between traditional medicine and modern medicine could be effective
5.1	Poor knowledge of policies and guidelines
5.2	Leadership's responsibility to ensure that policies and guidelines are known

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were committed to making a difference in the management of TB-HIV burden. One participant raised a concern about doctors who join the profession for the wrong reasons.

A5: *We need doctors who join the profession because they are sincere about serving. The main concern for me is that I have observed a growing number of doctors running very busy private practices who end up focusing more on the business side of the practice at the expense of good care for the patients. Patients are then seen as just numbers (…) prescriptions are made willy-nilly by some of the doctors without looking at the negative consequences this may cause on the patient's health and wellbeing. That is what I mean by wrong diagnoses of TB-HIV co-infections being made instead of PCP-HIV in many instances…if they are not sure, they must refer…and not refer when the damage has already been done…*

The sense of purpose in caring for patients was evident among participant doctors and nurses from both the private and public sector.

A1: *Having worked as a nurse in both the public sector and the private sector, it has always been a big challenge to deal with TB and HIV co-infections…and many of my colleagues have decided to quit because of this challenge…many have gone to work overseas…but I have stayed behind, to do my best to help the situation in this part of our country. It needs us the most. I have thrown myself into the deep end cos I felt I had to help, I felt the duty to help; that's why I'm in this profession in the first place*.

A2: *This being the home of HIV and TB in the country…I am glad I came back to South Africa after my two year stint in England where there wasn't much of a challenge. At least, I feel I am making a contribution towards addressing such a big challenge of TB-HIV co-infections in my province of birth. Children are very close to my heart because they are often forgotten in matters of dealing with such huge challenges and yet they are at high risk*.

Sub-theme 1.2: Management of patients done as a team

Most participant doctors and nurses from both the public and private sector felt that teamwork was important in the context of managing the big challenge posed by TB-HIV co-infection. The main reason for the importance of teamwork was that each TB-HIV case was unique and that most of the doctors and nurses lacked confidence and expertise to handle such cases.

A15: *Very, very … difficult to manage this situation. … I'm still unsure how to deal with such a situation; dealing with patients who are infected with both TB and HIV is more complicated!*

A13: *(…) the good thing is that we discuss cases with the team, and we are coached and informed of how a particular case should be managed and how another case should be managed (…).*

Theme 2: Access to information and training on the management of TB-HIV co-infection

Most participants regarded information as one of the key aspects in the management of TB-HIV co-infection not only for doctors and nurses but also for every stakeholder including communities.

A3: *…information alone is not enough. It is important (…) but not enough… (…)*

Sub-theme 2.1: Information not formally provided

The majority of participants from both the public and private sector mentioned that information on management of TB-HIV co-infection was not formally provided by hospitals in which they were employed. Information was sometimes informally given by a few doctors and nurses who had knowledge or experience with regard to the management of TB-HIV co-infection.

A13: *No formally accessible … specific to TB-HIV co-infection (…) not really (…) no, not really that accessible in terms of documents and other formal stuff (…)*

A3: *Some of the doctors do share a lot of information with us (…) but others don't share much information with us.*

Sub-theme 2.2: Information available through sharing with colleagues or through own search

The majority of participant doctors and nurses expressed the need to get more information so that they could be able to effectively manage the dual TB-HIV burden, and as such, they felt they also had the responsibility to ask or search for more information themselves.

A13: *Information is available through discussions and coaching through the team… Good information flow through the whole team…*

Sub-theme 2.3: Unsure about opportunities for advancement

Most of the participants were not sure about possibilities that would be provided by the hospital in which they were employed for advancing their knowledge in the area of managing TB-HIV co-infection.

Contrary to that, one participant doctor from the public sector and one participant nurse from the private sector expressed awareness that the hospital in which they were employed provided support for staff who wanted to study further in order to advance their knowledge.

A7: *(…) some of my colleagues have been lucky to be sent by the hospital to attend courses as part of their continuous development (…)*

Theme 3: Challenges and concerns about the management of TB-HIV co-infection

This theme was one of the most prominent themes as there were so many challenges and concerns raised by all participants with regard to the management of TB-HIV co-infection.

Sub-theme 3.1: Fear of exposure to infection

Fear of exposure to infection, particularly to TB was frequently expressed by the majority of participant doctors and nurses from both the public and private sectors.

A14: *I fear that I might be exposed to TB when the diagnosis is not known yet (…) and also, I fear that the patient with an unknown diagnosis might transmit the infection to other patients.*

Sub-theme 3.2: Shortage of staff

Shortage of staff was expressed by all the participant doctors and nurses from the public sector as this resulted in heavier workload for the remaining staff.

A10: *…high rate of nurses and doctors who quit the hospital (…) and this leaves a gap that is not quickly filled whilst the number of patients is constantly high (…) making it harder and harder for the depleted number of health personnel to handle*.

Sub-theme 3.3: Inadequate facilities

This was expressed by most participant doctors and nurses from the public sector due to the large numbers of patients that came to the hospital and the deteriorating condition of the public hospital.

A9: *We work under extreme pressure here, the ratio of healthcare staff to the patients is very low (…) we are swamped to the point of burnout sometimes*.

Interestingly, one participant nurse from the private hospital also expressed concern about the shortage of space to accommodate patients.

A12: *We deal with very large numbers of patients (…) obviously the beds are not enough to accommodate all of those who are critically ill (…)*.

Sub-theme 3.4: Lack of supervision, mentoring and training

This point came through quite often

from participant doctors and nurses in the public sector as compared to participants in the private sector. This was largely because the majority of patients with TB-HIV co-infections overcrowded the public sector as they could not afford to access the private sector, and the public sector lacked the capacity to cope with these patients.

A10: *It is a plethora of TB-HIV presentations (...) it is something that you will not find in a textbook (...) I had to learn fast, very fast (...).*

A15: *I can say, the public sector is in a mess… The private sector is better but it is all about who can afford to pay for the services*.

They expressed feelings of helplessness, feelings of being thrown in the deep end and learning things along the way despite the overwhelming workload they had to carry.

A7: *... I had never experienced such a feeling of helplessness in my life (...). Never before had I worked in a hospital that was so big (...) large volumes of patients coming from all over the different parts of the district and beyond the district (...) you are constantly in a pressure cooker (...) you can lose your mind in this place.*

A9: *... you encounter new things on almost all days of the calendar. In some of the departments I thought I was going to die, the load is so heavy, I had to make many decisions many times (...) there was no one to ask (...) you are thrown in there, and it is up to you to decide whether you want to drown or to swim. There is no time to plan (...) you think on the move… No one will tell you that now you are dealing with a case of TB-HIV co-infection* (…) *you have to pick that up yourself and know what to do with it… It is complicated, it is tough (...)*

Sub-theme 3.5: Delay in getting diagnostic test results

Most participant doctors and nurses from both the public and private sector raised concern about the delay in getting laboratory test results back as a delayed confirmation of a diagnosis could put staff and other patients at risk, and it could also cause complications in the management of TB-HIV co-infection.

A6: *I have experienced that it is not straightforward to diagnose TB in HIV patients (...)…Getting the test results back from the laboratory can take time (...) sometime this is more than a week. If I don't know the definitive diagnosis, this puts me in a dilemma because I know that there are instances where even the slightest delay could result in severe complications, irreversible complications (...) it could be between life and death.*

A7: *It is very challenging and problematic that the diagnosing of unconfirmed cases can delay for a while, and the patient is expected to come back on another day (...) and during that time, who follows up on the patient*?

Sub-theme 3.6: Language barrier

The issue of language was expressed by participant doctors from the public sector whose first language was not the local African language.

A11: *I worry that there will be misunderstanding between me and the majority of the patients because they don't understand English (...)*

Theme 4: Perception about local beliefs

This theme was interesting because most participants were only able to expand on this subject after some probing. The majority of participants viewed local beliefs in the context of socio-cultural practices, with the practice of traditional medicine being of particular focus.

Sub-theme 4.1: Socio-cultural beliefs are an obstacle to the management of TB-HIV co-infection

Most participant doctors and nurses from both the public and private sectors felt that socio-cultural practices posed a challenge in the management of TB-HIV co-infection.

A15: *The challenge is that we have had so many patients who default their treatment just because of all the socio-cultural beliefs ... socio-cultural beliefs such as people having so much faith in traditional healers and faith healers are taking us backwards because these things do not work, and it stifles early diagnosis and treatment of TB-HIV co-infection*.

Sub-theme 4.2: Socio-cultural beliefs are an opportunity to enhance management of TB-HIV co-infection

Some of the participants saw an opportunity for socio-cultural practices to enhance the management of TB-HIV co-infection. For example, one participant doctor from the public sector mentioned the importance of a deeper understanding of the patients' background.

A7: *More studies must be focused on understanding lay beliefs, culture, customs and social patterns in the communities as understanding all these elements with a bigger view could have implications for the clinical management of TB-HIV co-infections (...).*

Sub-theme 4.3: Coordination between traditional medicine and modern medicine

Most of the participants acknowledged that lack of coordination between traditional medicine and modern medicine had a negative impact on the management of TB-HIV co-infection, whereas coordinated efforts could have a positive impact.

A9: *...working partnership between traditional medicine and western medicine. Opening the channels of cooperation in that way will probably enable an opportunity to find a (...) a solution to the scourge of TB-HIV that is causing havoc in our communities in this country. I think we need more minds from diverse fields to find a solution in this case*.

A5: *... we can also learn from the patients' culture and beliefs such as traditional medicine (...) this might help us to better understand the diversity and how to manage TB-HIV co-infections in the way that will be embraced by them... This aspect should be incorporated in the curriculum at medical schools (...) it must be compulsory.*

Theme 5: Knowledge of policies and guidelines

The two prominent themes under this theme were as follows.

Sub-them 5.1: Poor knowledge of policies and guidelines

This sub-theme was prominent in the sense that none of the participants could mention at least some detail of any policy or guideline pertaining to the management of TB-HIV co-infection except for one participant doctor from the private sector who could only mention very brief information contained in the WHO TB/HIV guideline.

A5: *I've recently read the World Health Organization's policy on collaborative TB/HIV activities which includes guidelines for TB/HIV programmes at national level and in other areas.*

Sub-theme 5.2: Leadership's responsibility to ensure that policies and guidelines are known

Most participant doctors and nurses explicitly stated that it was the hospital leadership's or government's responsibility that health staff knew the policies and guidelines pertaining to the management of TB-HIV co-infection.

A1: *Policies are passed in parliament (...), the government through the department of health must ensure that these policies are known and implemented properly.*

A11: *… it is the government's responsibility because policies are developed at that*

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level. The Minister of Health represents the government (…) he should make sure that the information filters down…

Discussion

The key themes that emerged from the interviews with the doctors and nurses included: practical experience about the management of TB-HIV co-infection; access to information and training; challenges and concerns about the management of TB-HIV co-infection; perceptions about local beliefs; and knowledge of policies and guidelines.

Sense of duty and teamwork were expressed by most doctors and nurses from both the public and private sector. The importance of this is that it ensures that the patient's physical, emotional, and psychosocial wellbeing is taken into consideration, and it also helps to build trust between the healthcare provider and the patient.[16] Strikingly though was that most of the participant doctors and nurses from the public sector mentioned that they had to learn fast sometimes under little supervision when managing TB-HIV co-infection. As such, this could result in inconsistencies in practice and a high possibility of complications due to the wrong treatment being given or treatment not given at the right time and in the correct dosage.[14]

It was of concern that most participant doctors and nurses from both the public and private sector mentioned that information was not formally provided. As such, most of them depended on information that they shared with colleagues and through their own information search. Some of the participants felt it was also their responsibility to search for information in order to advance their knowledge in the area of managing TB-HIV co-infection.

When managing TB-HIV co-infection, it is crucial that the physician is well-informed and trained to know what treatment to give, when to give it, how to give it, and how to manage complications related to the treatment.[17] The findings of an exploratory qualitative study on doctors' and nurses' challenges of managing TB-HIV co-infection in a hospital in Sweden, highlights that lack of clinical knowledge compromised their practice.[18] Interestingly, a cross-sectional study conducted among doctors and nurses in the South African province of KwaZulu-Natal revealed that improvement of knowledge through training was not clinically significant.[19] According to a KAP study of allopathic medical practitioners, most of the medical practitioners had knowledge and training on TB and HIV control, but this did not necessarily translate to effective clinical management of TB-HIV in practice.[20]

There were similarities and contrasts between some of the challenges and concerns expressed by the participant doctors and nurses from the public sector and those from the private sector. Notably, the fear of exposure to nosocomial infection was commonly expressed by participant nurses from both the public and private sector, perhaps because nurses spent more time with patients in the wards as compared to doctors. The risk of nosocomial infection was largely attributed to overcrowding, poor screening of unknown cases of TB, and inadequate facilities and poor infection control in the public sector. Poor screening of unknown cases of TB was the main point of concern pertaining to nosocomial infection in the private sector. This concurs with the findings of a phenomenological qualitative study on nurses in a large referral hospital in Cape Town, which revealed that poor work conditions resulted in nurses having concerns about TB nosocomial infection.[20] Several studies also reveal that there is a higher risk of TB and HIV nosocomial infection especially in work environments that have staff shortages, overcrowding, poor facilities, and incompetent management.[21] The increased risk of nosocomial infection among doctors and nurses could result in the doctors' and nurses' morbidity and mortality, thereby putting more strain on the remaining limited health human resources especially in the public sector.[1]

The participant doctors' and nurses' perception of socio-cultural beliefs as a barrier to the management of TB-HIV co-infection appeared to be an opportunity missed of potential strong allies. It was an opportunity missed because the majority of the population in the northern KwaZulu-Natal setting had deeper connections to their socio-cultural beliefs including the use of traditional medicine.[22] The monopolistic western medicine expects the patient to assume the *sick role*, and yet, in the context of the northern KwaZulu-Natal setting, and possibly the whole country, socio-cultural beliefs are deeply embedded in the communities, and assuming the *sick role* is not that simplistic.[23] Ultimately, the decision whether to consult a western medicine doctor, nurse or a traditional healer is not a decision solely made on the magnitude of the TB-HIV co-infection.[4,24] However, it is a decision made by the patient and sometimes by the patient's family, based on their belief and trust that the condition will be addressed if they go in a particular direction to seek help.[24] The enacted policies by the South African government recognise traditional medicine practitioners as important stakeholders in the management of TB and HIV.[25] In reality, traditional medicine practitioners are largely side-lined by the broader modern medical profession, and yet closer partnerships between the two could add value in the effective management of TB-HIV co-infection.[15,25] Genuine collaborations between allopathic or modern medicine practitioners, and traditional, complementary and alternative medicine (TCAM) practitioners could enhance patient activation and improve health outcomes.[26]

It is commendable that the South African government has enacted policies and guidelines to enhance collaborative management of TB and HIV.[15] However, the overall lack of knowledge of policies and guidelines pertaining to the management of TB-HIV co-infection by almost all participant doctors and nurses in this study, has serious implications on the effective management of TB-HIV co-infection in the northern KwaZulu-Natal setting. The issue with lack of knowledge of policies and guidelines is that it could result in inconsistent practices in the management of TB-HIV co-infection.[14]

Interestingly, the majority of participant doctors and nurses felt that it was the responsibility of the government and the hospital's leadership to ensure that the policies and guidelines were known to the hospital staff. The participant doctors' and nurses' assertion concurs with one of the observations made in an earlier qualitative study conducted on health managers and community health workers in the same province of KwaZulu-Natal which suggests that leadership has a key role to play in the implementation of policies and guidelines.[22]

Conclusions and Recommendations

This research demonstrated TB-HIV co-infection as a public health issue at global and local level. It also put into context the experiences of doctors and nurses as key healthcare providers who are also key in terms of the management of TB-HIV co-infection. An interpretivist epistemological approach using an exploratory qualitative study design provided a rich depth of information pertaining to doctors' and nurses' experiences on the management of TB-HIV co-infection in the TB-HIV high burden community of northern KwaZulu-Natal. The findings of this study revealed that there were similarities and differences between the experiences of doctors and

nurses in the public and private sector. Overall, the doctors' and nurses' experiences underline health systems barriers that hamper the effective management of TB-HIV co-infection in the TB-HIV high burden community of Northern KwaZulu-Natal, and this has implications on policy implementation and leadership.

There is an urgent need for adequate infrastructure and expertise in terms of doctors and nurses who are well-trained and competent in the management of TB-HIV co-infection. As such, talent and recruitment strategies should be strengthened towards attracting and retaining talent.[6]

Decentralisation of the management of TB-HIV co-infection to ensure that peripheral hospitals and clinics have the capacity to handle even complex cases of TB-HIV co-infection. This could address the issue of overcrowding at the referral public hospital.

Scale up of infection control standards should be considered an urgent priority especially in the context of preventing nosocomial infections, particularly with regard to the poor screening and isolation of TB cases in both the public and private sector, but more so in the public sector.[14]

Scale up of the public health response through stronger and genuine partnerships between policymakers, TCAM practitioners, and allopathic medicine professionals. This could ensure social mobilisation and channelling of efforts towards common goals for effective management of TB-HIV co-infection.[9]

Further exploratory qualitative studies are recommended, to cover a wider area such as the entire KwaZulu-Natal province, and then further extended to cover the whole country to ensure that context specific findings and conclusions are drawn so that context specific solutions could be implemented pertaining to the effective management of TB-HIV co-infection.

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