

Risk and reward: Experiences of healthcare professionals caring for drug-resistant tuberculosis patients

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Orientation: Multi-drug-resistant tuberculosis (MDR-TB) continues to be a global public health challenge. Healthcare professionals caring for MDR-TB patients face the occupational risk of being infected.

Research purpose: To describe the experiences of healthcare professionals caring for MDR-TB patients at one TB hospital.

Motivation for this study: Managers of healthcare settings, which posed a specific occupational risk, struggle with recruitment, retention and a high turnover. What is not known is what can be performed in these settings to mitigate these human resource challenges.

Research approach/design and method: This study used a qualitative research design. A fieldworker collected data via in-depth individual interviews from 20 participants. A purposive sampling technique was used.

Main findings: Six themes emerged: Infrastructure challenges, Human Resource Challenges, Lack of Equipment and Supplies, Support, Risk and Reward and Emotions. This environment led to additional risk-taking with regard to working outside the scope of practice and feelings of burnout. Participants valued the opportunity to develop relationships with patients in their journey of recovery in an atmosphere that was not characterised by urgency.

Practical and managerial implications: This study offered managers some insight on how to create a rewarding working environment and atmosphere that were favourable to deliver quality patient care services to MDR-TB patients. Participants provided insight into the previously unknown risks in the workplace, which can be ameliorated.

Contribution/value-add: This study identified the key interventions – some of which can receive immediate attention – to ensure recruitment and retention of this specialised workforce.

Keywords: qualitative; healthcare professionals; tuberculosis; retention; human resource management.

Introduction

The health of a population is dependent, amongst other factors, on the ability of health systems to provide the required promotive, preventive, curative, rehabilitative and palliative services. Health systems, in turn, require a health workforce (both healthcare professionals and non-professional healthcare workers) to be able to provide these services (World Health Organization [WHO], 2016). The centrality of the health workforce is reflected in the overwhelming proportion (65% – 70%) of healthcare expenditure – excluding the cost of training – that is spent on human resources in most countries (South African National Department of Health, 2011). But the provision of adequate healthcare depends on more than the availability of a health workforce. Only when this workforce is equitably distributed, accessible, competent, empowered, motivated and supported by the health system can they deliver quality care and an effective service that is appropriate and acceptable to the sociocultural expectations of the population (WHO, 2016). The health workforce also plays a role in contributing to the resilience of health systems to be able to respond to hazards (natural, man-made, biological, technical or environmental (WHO, 2016) as evidenced by the COVID-19 pandemic.

In 2015, The United Nations (2015) developed 17 interlinked global goals called the sustainable development goals (SDGs). The health priorities enshrined in SDG 3 or Good Health and Well-being are ending AIDS, tuberculosis and malaria; achieving drastic reductions in maternal

mortality; expanding access to essential surgical services; ending preventable deaths of newborns and children under 5 years; reducing premature mortality from non-communicable diseases; promoting mental health; addressing chronic diseases and guaranteeing Universal Health Coverage (use of promotive, preventive, curative, rehabilitative and palliative health services of sufficient quality to be effective, without financial hardship). These health goals cannot be achieved without strategies to ensure a capable health workforce (WHO, 2016). Policymakers and planners are guided in this by the Human Resources for Health (HRH) Action Framework developed by the World Health Organization. This framework contains six action fields (policy, finance, education, partnership, leadership and HR management systems) and four phases of the action cycle (situational analysis, planning, implementation and monitoring and evaluation) and is a comprehensive framework to help countries develop a national human resource development plan (Figure 1).

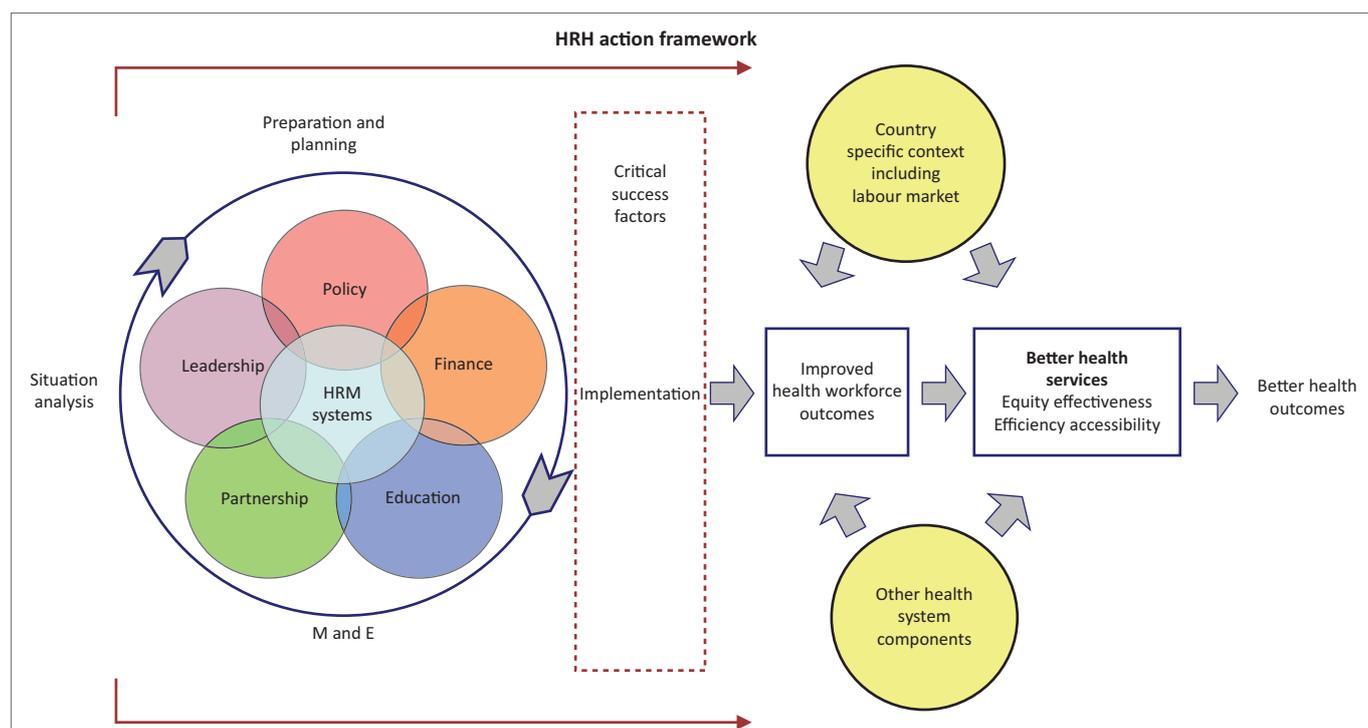
There is a global shortage of healthcare professionals, which is exacerbated by the difficulties in employing them in rural, remote and underserved areas (both geographical and in less-than desirable sectors and settings) (WHO, 2016). In 2013, the global shortage of healthcare professionals was approximately 17.4 million, of which almost 2.6 million were doctors and over 9 million were nurses and midwives. Africa has the largest shortage in relative terms (i.e. taking the population size into account) (WHO, 2016). South Africa (SA) is not excluded from this shortage, and the health system, with a public and a private sector, creates additional strain because of the internal competition for the scarce human resources. South Africa has considerably less doctors,

pharmacists and oral health practitioners per 10 000 population than comparable countries (South African National Department of Health, 2011). South Africa, in general, and the public sector, in particular, are affected by attrition (estimated at 25% per year) from the professions and migration to other countries (South African National Department of Health, 2011). The distribution of the health workforce in SA is also characterised by maldistribution between the public and private sectors; between provinces and between urban and rural settings (South African National Department of Health, 2011). Despite growth in the number of healthcare professions, this growth is not sufficient to meet the clinical and healthcare needs of the growing population (South African National Department of Health, 2011).

SDG 3 highlights the goal of ending tuberculosis globally. This goal includes the ending of multi-drug-resistant tuberculosis (MDR-TB) that continues to be a global public health challenge. Healthcare professionals caring for MDR-TB patients face the possibility of being infected whilst executing their duties, and in a healthcare system with both external and internal competition for scarce human resources, retention of staff in these settings is a critical success factor in the implementation phase of the WHO's HRH Action Framework (Figure 1).

Literature review

This research focuses on the experiences of healthcare professionals who care for MDR-TB patients in SA. The literature acknowledges that the experiences of MDR-TB patients have been extensively researched; research on experiences of healthcare professionals who care for



Source: World Health Organization (WHO). (n.d.). *HRH action framework*. Retrieved from <https://www.who.int/hrh/tools/en/>

FIGURE 1: Human resources for health action framework.

MDR-TB patients remain scant in SA notwithstanding the high number of TB cases and the occupational risks associated with working with these patients (Lange et al., 2014; Skrahina et al., 2013).

There have been high numbers of patients diagnosed with MDR-TB in SA in recent years. Such patients are hospitalised for the first 2 months of the treatment (intensive phase) under the direct care of healthcare professionals. New regimens have been introduced to treat this form of TB. These regimens have reduced the period of treatment from 24 to 9 months (Cox et al., 2015). The reason for the high numbers of patients diagnosed with MDR-TB is twofold. Firstly, there is an increase in numbers of healthcare professionals who can test. Secondly, cutting-edge diagnostic equipment such as the Xpert MTB/RIF machine is now available in TB hospitals in SA (De Vries, Sebek, & Lambregts-Van Weezenbeek, 2006). South Africa ranks amongst the countries with the highest numbers of MDR-TB cases (Farley et al., 2012), and Mpumalanga province has the third-highest number of cases in SA (WHO, 2016).

Previous studies tend to have focused on experiences of healthcare professionals who care for HIV patients. However, few studies explored the experiences of healthcare professionals providing care to MDR-TB patients (Philip, Chadee, & Yearwood, 2014). Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) studies report experiences such as anxiety and exhaustion, lack of support and limited resources (Ramathuba & Davhana-Maselesele, 2015). Recruitment and retention of health professionals in such facilities is a problem (Khamisa, Oldenburg, Peltzer, & Ilic, 2015; Kroezen et al., 2015; Laschinger, Leiter, Day, & Gilin, 2009).

In a study exploring experiences of health professionals in a TB healthcare setting, Tudor, Mphahlele, Van der Walt and Farley (2013) reported that the greatest concern was fear of becoming infected with MDR-TB and having to take the treatment course for as long as 24 months. In view of this potential occupational hazard, compensation in the form of salary was a common concern and healthcare professionals likened their work to one that needed a danger allowance.

The potential occupational exposure to a contagious disease is an added deterrent to recruiting and retaining healthcare professionals in public sector settings, which, in SA, are already under pressure. Working conditions are known to be a major contributor to the high turnover of health professionals in general (Ellett, Ellis, Westbrook, & Dews, 2007; Lewis, 2015; Mrayyan, 2006). Poor infrastructure, shortage of equipment and staff are classic factors that contribute to poor working conditions such as high workload, which in turn leads to stress and burnout of staff (Khamisa et al., 2015).

Studies on the turnover of health professionals found that poor rewards, lack of autonomy, poor working conditions, lack of job satisfaction, autocratic management styles and

few opportunities for promotion contribute to the poor retention of health professions (Mrayyan, 2006). When occupational exposure to a contagious disease is added, then the recruitment and retention of healthcare professionals become acute. The associated cost of a high staff turnover is magnified by the specialist nature of the clinical skills and knowledge that is developed whilst in service as healthcare professionals such as nurses need to be trained in the management of MDR-TB such as managing side effects (Shrestha, Bhattarai, Thapa, Basel, & Wagle, 2017).

This study was conducted with the aim of describing the experiences of healthcare professionals caring for MDR-TB patients at one TB hospital that is also the provincial referral MDR-TB Unit.

Research design

Methodology

A qualitative research design used an exploratory approach to explore and describe the experiences of healthcare professionals regarding their practice in caring for MDR-TB patients. Researchers use qualitative research to observe and describe events in a natural research setting, in order to be able to represent the participants' experiences (Denzin & Lincoln, 2003).

This study was conducted at one TB hospital, in SA. At the time of the study, there were 114 staff members of whom 21 were healthcare professionals who cared for 55 TB patients at the study site. This hospital is one of 32 TB hospitals in SA and is the province's referral MDR-TB Unit. The study population was all healthcare professionals (professional nurses (PNs), allied health professionals and medical officers) working at the TB hospital. Allied health professionals included the following: audiology, dieticians, occupational therapists, physiotherapists, social workers and pharmacists. The total population of healthcare professionals was 13 PNs, six allied health professionals and two medical officers. Participants had to be permanently employed as a healthcare professional at the TB hospital and willing to participate in the study. A purposive sampling method was used to identify the hospital and participants. A non-probability purposive sampling method was used as the research interest was the shared set of characteristics common to those who work in this type of work environment. All 21 healthcare professionals were invited to participate in the study. The first author (AM) had prior knowledge of the phenomenon under study (he is a manager at the TB hospital) and as a result, a trained fieldworker was recruited to conduct the interviews.

Data collection and recording

An in-depth individual interview was used to collect data by using a structured interview guide. The participants were invited via e-mail to participate. The invitations included a summary of the purpose of the research as well as the date, time and venue of the interview. Interviews were carried out over a period of 10 working days so that those who

were either on night duty or off duty could participate. The interview guide had five demographic questions and nine open-ended questions with prompts:

1. Why did you choose to work in this hospital?
2. What do you enjoy *most* about working in this hospital?
3. What do you enjoy *least* about working in this hospital?
4. Do you see yourself working here in 5 years' time? [*Probe for reasons for both 'yes' and 'no' answers*]
5. If there is something that the hospital could change to keep you working here, what would it be? [*Probe: ask for specifics, e.g. improve the Employee Assistance Programme, by doing.....; provide more training opportunities around the following topics.....etc.*]
6. What do you think are some of the factors that could result in your fellow employees leaving Witbank Hospital?
7. Would you suggest working at this hospital to a friend or colleague of yours? [*Probe for reasons for both 'yes' and 'no' answers*]
8. What support do you need as an employee of this hospital to improve the services to the patients?
9. Is there anything else that you would like to share that you think we should know?

The questions in the interview guide were developed by the authors based on personal experience and the phenomenon of interest. Interviews were conducted in English in the boardroom of the hospital during working hours and each interview lasted between 45 and 50 min. Data collection was continued until saturation was reached. The interviews were audio-recorded and field notes were kept by the interviewer. The first author had no access to the audiotapes and only received the written transcripts after they were professionally transcribed, checked for accuracy by the fieldworker and anonymised.

Data analysis

Data were analysed manually by the first author by using an interpretative phenomenological analysis framework. Open coding and development of the subthemes were performed after repeated reading of the transcripts. Connections across the emerging themes were explored. Similar subthemes were grouped into super-ordinate themes. Both authors reached consensus on the subthemes and the themes. Both authors had attended a module on qualitative data analysis and the second author has several years' additional experience.

Strategies employed to ensure data quality and integrity

This study applied trustworthiness as the degree of confidence used by qualitative researchers. To improve the trustworthiness of this study, the researcher utilised the four measures: credibility, transferability, dependability and confirmability to ensure the quality of the data (Lietz, Langer, & Furman, 2016; Sinkovics, Penz, & Ghaur, 2009).

Credibility was ensured by giving full description of participants and the study setting. Proper capturing of participants' views was ensured by recording the interviews and the professional transcription. Member checking was performed by a fieldworker, and participants confirmed the authenticity of the data and could correct inaccuracies (Sinkovics et al., 2009). Transferability is the process in which the results of the study can be applied in other settings or to other groups (Sinkovics et al., 2009). The researchers ensured all theoretical parameters such as study design, setting, participants, data collection and analysis, which are reported and followed. Dependability is when study findings are consistent and repeatable (Lietz et al., 2016). To ensure dependability, the researchers conducted a pilot study to confirm whether the questions were understood as intended. Confirmability is the confidence that the results are the views of participants and not the biases of the researcher. This was ensured by maintaining an audit trail (Graneheim & Lundman, 2004).

Ethical consideration

This study was approved by the Ethics Committee of the University (Number: 490/2018) as well as the relevant Provincial Department of Health Ethics Committee. On the day of the interview, the fieldworker explained the purpose and nature of this study before asking participants to take part in this study. Each participant received a Participant Information Letter that outlined the research. Participation was voluntary and participants had the right not to participate or to withdraw at any time. Separate permission was sought for the interview and the audio-recording of the interview. Transcripts were anonymised in order to protect the identity of the participants and the first author did not have access to the audio files.

Results

Table 1 describes the demographics of the 20 healthcare professionals who agreed to participate in this study.

TABLE 1: Demographic profile of the participants.

Participant	Age	Experience at a TB hospital	Profession	Marital status
HCPN1	58	18	PN	Married
HCPA1	28	3	Pharmacist	Single
HCPA2	31	6	Dietician	Single
HCPN2	46	6	PN	Married
HCPN3	48	3	PN	Married
HCPN4	60	3	PN	Married
HCPN5	36	12	PN	Single
HCPA4	29	2	OT	Married
HCPN6	57	28	PN	Married
HCPA3	27	7/12	Audio	Single
HCPN7	62	7	PN	Married
HCPN8	62	6	PN	Married
HCPN9	39	12	PN	Single
HCPA5	40	10	S/W	Single
HCPN10	46	3	PN	Widow
HCPN 11	59	12	PN	Single
HCPN 12	64	35	PN	Widow
HCPN13	44	13	PN	Widow
HCPN14	26	2	PN	Married
HCPM1	47	7	MO	Married

MO, medical Officers; OT, occupational therapists; PNs, professional nurses; TB, tuberculosis.

TABLE 2: Themes and subthemes.

Themes	Subthemes
Infrastructural challenges	Asbestos roof No isolation ward No privacy Night duty challenges
Human resource challenges	Shortage of staff Lack of supervision Lack of career pathing
Lack of equipment and supplies	Shortage of equipment Supply of ARV drugs
Support	Lack of professional support Lack of training
Risk and reward	Poor remuneration and lack of incentives Lack of risk allowance
Emotions	Burnout Rapport with the patients Progress in the patients' recovery No rush, non-emergency cases Single person section Fear of contracting MDR-TB

ARV, antiretroviral; MDR-TB, multi-drug-resistant tuberculosis.

Six themes emerged from the study: infrastructural challenges, human resources challenges, lack of equipment and supplies, support, risk and reward and emotions (Table 2).

Infrastructural challenges

The infrastructure of a health facility influences the attitude of the healthcare professionals' ease of service delivery and may lessen the workload amongst participants (WHO, 2010). The four subthemes that formed this theme are as follows: asbestos roof, no privacy, no isolation ward and night duty challenges.

Asbestos roof

The hospital is old and the roofs of all the wards are made of asbestos, which is a well-known health hazard. Participants were concerned about the asbestos roof and the moral dilemma of providing care in a potentially hazardous environment:

'We are not making TB a priority ... I'm becoming emotional when I talk about this because when you look at the infrastructure we are working under, it is like we don't worry about the people that we are nursing ... look at them (patients) sitting outside asbestos roof which exposes them to asbestosis ... they already have weak lungs but we are exposing them to asbestos' (HCPN10)

No isolation ward

The hospital does not have isolation wards, which is the cornerstone of infection control in a hospital of this nature. Nosocomial infection is a challenge when patients, who are still infectious, cannot be isolated:

'We don't have isolation wards, we don't have a proper children's ward so if I was still going to work I would like to have those things.' (HCPN12)

No privacy

The lack of privacy was identified as a challenge in this hospital:

'To us as health workers there are some procedures that you want to do in private but you find that you don't have a private area. A room has many beds. A patient feels very much uncomfortable if there is no privacy. For instance, if a patient dies, the corpse is exposed to other patients for some time which is traumatic.' (HCPN2)

Night duty challenges

The infrastructure was described as a deplorable. At night, PNs move from one ward to another on a two-hourly basis to check on patients. The nature of the ward is such that they cannot stay for the whole night in the ward. During the day, patients sit outside:

'It is during the night that infection is extremely high. And you mustn't stay with the patients inside because the infection is high.' (HCPN1)

Human resources challenges

Healthcare professionals play a vital role in the provision of quality healthcare and related services. The three subthemes that formed this theme are as follows: shortage of staff, lack of supervision and lack of career pathing.

Shortage of staff

Participants complained about the shortage of staff in almost all the medical and allied sections in the hospital. Professional nurses stated that the pressure is felt mostly during night duty because of the infrastructure:

'Because you can find that a sister, a PN is working two wards – the MDR department and XDR sections being a professional nurse and three assistant nurses.' (HCPN1)

This study found that shortage of doctors in the hospital has an impact on the nurses. Professional nurses find themselves carrying out tasks beyond their own scope of practice and experience burnout as a result:

'Ok ... there is shortage of staff. For instance, we have only two doctors in the hospital and lots of patients ... if they can add few doctors because there are some procedures that are done by the doctor.' (HCPN1)

Lack of supervision

Allied health professionals felt that they do not have an appropriate supervisor as they are currently supervised by a medical doctor who has no knowledge of their profession:

'I'm the only permanent staff member (in my section), but I don't [have] direct supervision.' (HCPA1)

Participants feel that it is necessary to:

'... improve supervision because there is no direct supervision.' (HCPA5)

Related to the latter, one participant added that because there are not enough PNs, assistant nurses sometimes step to execute tasks beyond their scope of practice without supervision.

Lack of career pathing

The lack of career pathing was a factor in participants' intentions to remain at the hospital:

'... growing and progressing in terms of career pathing, is very slow. I don't see myself working here for another five years.' (HCPA5)

Lack of equipment and supplies

Healthcare professionals require medical equipment in order to provide quality services to the patients. Two subthemes formed in this theme: shortage of equipment and supply of ARV drugs.

Shortage of equipment

Participants were concerned about the shortage of technological resources that diagnose and provide treatment to patients:

'There are not resources, for instance, for assistance to a pregnant (woman) infected MDR/XDR. There are incubators for a baby. We don't have a maternity bed and we don't have proper lighting to suture in case of an episiotomy.' (HCPN14)

The absence of laptops was also raised as a barrier to deliver quality services.

Supply of ARV drugs

This study found that accessing ARVs from the government depots is a source of frustration for participants:

'OK, what I enjoy least ... it is a bit frustrating that you don't have access to ARVs.' (HCPM1)

Support

Healthcare professionals need support from supervisors and management. Participants expressed concern over the lack of supervision as a supportive process and the lack of support from management. Two subthemes formed this theme: lack of professional support and lack of training.

Lack of professional support

Participants were concerned about the support that they receive from management. There was a feeling that nobody listens to them when they complain about the shortage of staff or material resources like equipment:

'uhm ... everyone is complaining about being understaffed ... like everyone. And then it is a high risk place and we do not get risk allowance. And people complain about the lack of support like from our superiors (stops mid thought).' (HCPA1)

The reality of being in a single-person department or section resulted in a sense of being ignored by management and these participants did not feel that management understood their needs:

'... we are one in a section so when, you feel that maybe the management they have a meeting and you have a complaint,

they know about you ... some people will take your complaint and dismiss it because they don't know about your profession.' (HCPA2)

Participants were working alone in most cases because of the shortage of staff, irrespective of the number of patients. Whenever they come to work, in particular, on night duty, they just pray nothing happens. Participants felt that if there was an incident, management would just want an explanation on what happened and ignore the reality of only having skeleton staff available to do the work.

'If there is an incident my head will be on the block. Who must support me? When I come and say assist me in this I don't get assistance, they give you ... as a professional nurse you would want someone to have your back but if you don't have anyone to fall back on you always work on prayer (God help me, let there be no incident). And that is not nice. Making mistakes is a learning moment but you don't want that here because nobody will support you.' (HCPN10)

This study revealed that some support is not the only local support from the hospital management as the discussion regarding the absence of support extended beyond the hospital to the district and provincial level. Most of the issues that are related to infrastructure and information technology are not within the domain of the hospital manager. Participants raised concerns that neither the district nor the province provides support. The participants were well aware that the budget is allocated by the province, which makes it difficult for the hospital management to provide support to healthcare professionals:

'... not getting (more especially) enough support, iya. From the management, I can say also from the province.' (HCPN2)

This lack of support is mostly in terms of budget, which makes the appointment of certain categories of health professionals challenging because of budgetary constraints. Respondents noted that most of the wards operate without operational managers, which they regarded as a challenge to provide quality health services.

Lack of training

Some participants had never received formal training related to MDR-TB and they learned on the job:

'Like I don't remember going to ... the only training I have attended are in-house, I don't remember going to a TB training or whatever. Everything that you know you learn as you are working, like we didn't get like formal proper training on TB.' (HCPA1)

On the other hand, some had received formal training and had carried out advanced training to initiate treatment in the absence of the medical officer:

'I like the way uhm ... about trainings, we, the support us just to give us a chance for trainings, because now I'm doing this (what you call) NIMDR. I can initiate when the doctor is not around, because I am trained.' (HCPN1)

Risk and reward

Remuneration is regarded as one cause of staff retention (Castle & Engberg, 2006; Dovlo, 2007; Lephala, Ehlers, & Oosthuizen, 2008). Hayes et al. (2012) stated that the absence of an attractive salary leads to staff turnover in most professional groups. In this study, participants considered the remuneration low when compared to the nature of the work. Two subthemes formed this theme: poor remuneration and lack of incentives and lack of risk allowance.

Poor remuneration and lack of incentives

Participants described their remuneration as poor, considering the specialised nature of their work. The occupational risk of exposure to TB was an additional argument for why their remuneration should be differentiated from those working in general clinical environments:

'... of course remuneration especially for, for, for the nurses to be improved. And then uhhh ... also things like specialised TB hospital ... and also their salaries specialised for the staff. Because I mean, risk ... what do you ... risk allowance? Something like that is very necessary for TB Hospitals. Not to be specialised and you end up being specialised on paper ... no. You must also be specialised in terms of the, the, the benefits thereof. And this one is not your general remuneration; it is at least some acknowledgement that the environment in which you are working in is obviously risky, I mean who has to wear a mask every day because they are exposed to MDR? It's only the TB Hospital.' (HCPM1)

The participants said that it is difficult to receive an incentive bonus despite the fact that they work in different specialties and work alone:

'Like it's very difficult here to get something like incentive bonuses and stuff because there is always budget, they say there is no budget and stuff. And when you look at other places there are five in a section and they are always telling you they got ... and then you are thinking ... I have to work in all of the areas of the section and I've never since I started working I've never got incentive bonus.' (HCPA1)

Lack of risk allowance

Participants reported that they do not obtain a risk allowance; yet, the environment that they find themselves on a daily basis is very risky. The lack of risk allowance was thought to be a major contributor to the staff turnover:

'Uhm ... everyone is complaining about being understaffed ... like everyone. And then it is a high risk place and we do not get risk allowance. And people complain about the lack of support like from our superiors and stuff ... like ... [stops mid thought].' (HCPA1)

The staff who stay close to the hospital are happy but still felt that they would change jobs because of the lack of a risk allowance more than the risk of contracting TB. Participants mentioned that the money would comfort them because even in the event of their death, the money will remain to help the family:

'I think it is the challenge if it is not external stuff like maybe your family is not from here. If someone is from around here why would they leave here? Maybe they just want something different. Maybe they are tired of TB. Maybe for the pay, there is no [risk] allowance, maybe they will leave for that.' (HCPA4)

Emotions

Employees experience emotions, either positive or negative, in the workplace. Positive emotions in the workplace assist employees achieve better outcomes, whereas bad emotions, such as anxiety, irritation, stress, unfriendliness and unhappiness, may decrease performance that may lead to poor outcomes (Bono et al., 2007). Six subthemes formed this theme: burnout, fear of contracting MDR-TB, rapport with the patients, progress in the patients' recovery, no rush, non-emergency cases and working in a single-person section.

Negative emotions

In this theme, the negative subthemes that emerged were burnout and fear of contracting TB. The subtheme of working in a single-person section had both negative and positive emotions. Negative emotions in this study emerged in connection with topics such as work overload and inadequate working conditions.

Burnout

Participants, especially those from the nursing team, reported feeling exhausted by the high number of patients and the disease itself. Reasons for the feelings of burnout were linked to staff shortage:

'Because staff shortage makes people to get tired and they get burnout and get sick and all of that stems from short staffing.' (HCPN3)

The feelings of burnout were linked in the minds of the participants to personal risk and staff turnover:

'The things that lead to people leaving are workload and litigation ... It can affect you and your family. But nothing is taken seriously; people would go [leave] to protect themselves from such.' (HCPN7)

Anxiety of contracting tuberculosis

Participants were afraid that they face being infected with MDR-TB. They mentioned that to work in this kind of environment is a personal sacrifice and that of their family:

'Uhhh, it's shortage of staff and I would also think they might be afraid of contracting, being in this environment they fear they end up contracting TB.' (HCPN6)

This participant indicated that the occupational risk of contracting TB was linked in the participants' minds to the reason for the staff shortage as:

'I would also think they might be afraid of contracting, being in this environment they fear they end up contracting TB.' (HCPN6)

The occupational risk resulted in a heightened sensitivity to their own health:

'It's a very risky place as in when you get sick, once you start coughing or whatever there is that thing ... Oh my gosh ... I hope it is not TB. OK, but I guess everywhere you can have that thing, but the fact that we work with people with TB, like once you feel something ... a little pain on the chest or whatever or cough, you think oh there goes TB!' (HCPA1)

Positive emotions

Participants had positive emotions about working in the TB hospital, with four subthemes: rapport with the patients, progress in the patients' recovery, no rush, non-emergency cases and single-person section.

Rapport with the patients

Participants described rewarding relationships with patients because they are able to spend enough time with them. Patients were likened to family members and so could share their problems. This aspect of work was considered to be a positive aspect of working in this type of hospital:

'Uhm ... what I enjoy most is that is not that much hectic, you see. And then you've got that close communication with the patient, unlike other hospitals you see.' (HCPN2)

Progress in the patients' recovery

The long-term interaction with the patients formed the basis for personal investment and interest in the patients' recovery. The relationship that was formed whilst patients were hospitalised extended beyond discharge. Participants were happy that they could see the patients' progress:

'Patients don't come and then they are gone. They are here we give the full treatment and then they go back home, they get to come back and we see they are making progress during the reviews ... We get more time with patients, we've got the best relationship, we know if they are progressing or not. It's just better.' (HCPA4)

Participants were positive about the new regimen of drugs that they felt were very effective in treating MDR-TB patients:

'I have experience before we started with this bedaquiline. Most of the time the patients were having a higher percentage of death ... after we initiate bedaquiline ... the patients they convert earlier because you can find that the patient is admitted today but the following month he is negative, negative, negative, negative until the end of the treatment ... I like this one because the death rate is down ... Because when we send the patient home complete negative, they are not infectious... even to us, we benefit. The chances of us getting (infected) is less.' (HCPN1)

No rush, non-emergency cases

The predictability of the working environment was considered to be a positive factor. Participants were happy in the TB hospital because they are not working with patients who require running around like in casualty section:

'Because we are not working so hard like in general hospital. Every time you find that they rush. We just work so nicely because we are working with ambulatory patients. It's not an emergency.' (HCPN1)

Single-person section

Participants mentioned that some of the units only have one person, which was viewed both positively and negatively. Most of the allied health sections, for example, audiology, dietetics, occupational therapy and physiotherapy, only have one person working in the section. Participants reported enjoying working alone because they are able to plan and execute without interference. However, the negative consequence was that they are supervised by somebody outside their profession:

'It's just that it gives me that freedom to do ... to, to give myself my own work. Like today I can decide that ok, I'm going to do 1,2,3 - ... then when I'm done ok, then I'll see that for tomorrow. That is at least some freedom, if I have to take leave I don't have to consider the next colleague.' (HCPA2)

Discussion

Outline of the results

The aim of this study was to describe the experiences of healthcare professionals caring for MDR-TB patients at one TB hospital in SA. The preceding section presented six themes that constitute the experiences of these healthcare professionals: infrastructural challenges, human resource challenges, lack of equipment, lack of support, risk and reward and emotions. Each theme had subthemes that were also presented.

A number of researchers contend that the work environment affects health professionals' morale in positive and negative ways. Previous studies specifically found a correlation between the work environment and productivity and performance (Awan & Tahir, 2015; Lerner & Henke, 2008; Singh, Syal, Grady, & Korkmaz, 2010). The performance of employees is largely determined by the environment in which they operate. In this study, the infrastructure is not conducive to a positive work environment – rather, it is an old building with an asbestos roof. Related to the environment are inadequate facilities and problems to access ARVs. The inadequacy of facilities and the consequences were the *leitmotiv* in this study.

There are factors in this hospital that exacerbate the fear of contracting TB. The infrastructure plays a central role in this, and night staff are particularly affected. The fear of contracting TB is well founded as SA has the second largest proportion (21%) of the global amount of 10 000 TB infections amongst the healthcare professionals per annum (WHO, 2015). The high prevalence of HIV, the poor circulation of air in health facilities and contact with TB patients all contribute to the risk (WHO, 2015). In this study, the occupational exposure to infectious and untreated patients on a regular basis is a known risk. The age group of the participants is the range of

25–44 years, which is the age group most characterised by a high HIV prevalence.

Employees working night shifts have been found to have low morale than day shift workers. Participants of this study work in an environment where the building is old and does not allow for optimum productivity at night. Night duty participants felt particularly affected by the roof of the hospital and the poor ventilation and consequently limited the time they spent in a ward. The open wards with limited privacy were also considered problematic. These findings relate well to what other previous researchers found as a lack of privacy because of infrastructural designs and crowding in wards not only adversely impacts on healthcare professionals but also can be traumatic to patients as well (Tabak & Ozon, 2004). Patients prefer to be treated in private rooms rather than in open wards (Awan & Tahir, 2015). Environments that are not conducive and safe for healthcare professionals may lead to a high turnover of staff and unnecessary occupational risk (Singh et al., 2010). This finding is of particular concern as this hospital was viewed as a risky place where they could contract TB. Productivity and performance of healthcare professionals are negatively influenced by workplace settings and may affect motivation and job satisfaction (Stanz & Greyling, 2010). Our study confirmed what is raised by Stanz and Greyling (2010), in that some participants reported feeling burnt out as a result of the environment.

This study found that participants do not feel safe because MDR-TB is infectious and this contributes to dissatisfaction. This finding explains why institutions such as this TB hospital continue to face staff shortages. Stanz and Greyling (2010) reported that healthcare staff leave such unfriendly working environments. The shortage of healthcare professionals and particularly amongst nurses led to concerns about workload. In a study by Shihundla, Lebeso and Maputle (2016), health professionals experienced numerous challenges as a result of increased nurses' workload, amongst others. The findings of this study relate well to the literature in this regard. Healthcare professionals in the public sector in SA experience heavy workloads and work long hours and the government has inadequate reward systems that force them to move when combined with risky occupational settings. The persistent shortage of staff in a hospital of this nature was raised as a concern by participants who thought that those still working there are at the risk of low morale and burnout. The findings of this study are confirmed by a study by Khamisa et al. (2015), which indicated that staff issues are related with burnout as well as job satisfaction.

This study found that healthcare professionals are sometimes forced to work without supervision. Working in a TB hospital requires specialist expertise and those who are not experienced require supervision. A study conducted regarding clinical supervision indicated that supervision of junior staff has positive benefits for professional growth of nurses and their clinical practice (Snowdon, Leggat, & Taylor, 2017). It is a risk for junior staff members to be left without

supervision as high mortality has been reported because of lack of supervision or negligence (McKenna, Hasson, & Keeney, 2004; Snowdon et al., 2017). The lack of operational managers in the wards and an allied staff manager was viewed as problematic. Health facilities without managers pose a risk to patients and result in issues of accountability (Ghiasipour, Mosadeghrad, Arab, & Jaafaripooyan, 2017).

Lack of career progression remains a challenge in the public sector, and given that the participants work at a specialist TB hospital, this results in few opportunities for career progression. Limited promotion opportunities, together with the risk of contracting TB and suffering burnout, were presented as primary drivers of healthcare professionals leaving their jobs. A number of studies (Jenkins et al., 2014; Okoh, 2009) acknowledge that one of the experiences of healthcare professionals and the public service as a whole is working in a sector that is characterised by less chances for growth. The findings of this study relate well to such previous studies.

A number of studies concur that lack of support, a poor working environment and lack of adequate equipment and supplies can, to some extent at least, be moderated by the support given to the staff. However, this study showed that the support to the employees was viewed as sub-optimal. This study shows a pattern of a lack of supervision, work outside the scope of practice and supervision of allied health professionals by those who are not from their field. This pattern is within a larger context of perceived lack of support from management, local authorities and the provincial government. Professional support benefits health facilities by retaining healthcare professionals and enabling recruitment (Hargreaves et al., 2011; Pietersen et al., 2014; Zumla et al., 2012). Support at all levels of management leads to a competent workforce, equipped to meet current and future challenges (Sarre et al., 2018; Teasdale, Brocklehurst, & Thom, 2001).

What exacerbates the lack of support is the finding that there appears to be insufficient training at the hospital. Participants indicated that some of the aspects of their jobs are learnt on the job without formal TB training. This finding is a particular concern as it is important that healthcare professionals should stay abreast of new information (Garzonis, 2015). The field of TB treatment is evolving significantly and healthcare professionals must be up to date in this specialised work environment. Training is a significant part of keeping current and for the improvement of quality services (Wang, Wan, Lin, Zhou, & Shang, 2018).

Similar to other studies, participants viewed the remuneration and lack of incentives such as a risk allowance negatively. Compensation, such as remuneration and/or financial incentives, is known as a causal factor for staff retention (Castle & Engberg, 2006; Dovlo, 2007; Lephala et al., 2008). Studies have shown that the absence of good pay leads to high staff turnover (Haines et al., 2010; Yun et al., 2010). The participants' perception that their remuneration is not

enough compensation is a source of concern. This concern is magnified by the knowledge that healthcare professionals are reluctant to work in TB hospitals because of the fear of infection, a fear that was confirmed in this study.

The participants stated that they do not gain a performance bonus despite their hard work. The system of performance management itself excludes most of the healthcare professionals. Incentives for better performance in healthcare are intended to inspire and encourage healthcare professionals to perform well and achieve better outcomes. This study concurs with the finding that there is a poor level of incentives offered to healthcare professionals. Findings suggested that healthcare professionals are often excluded by the system and therefore take no interest to participate (Abduljawad & Al-Assaf, 2011).

Burnout was a common thread in this study and was partially attributed to the perceived lack of managerial support and the work environment. Whilst the work environment, such as the infrastructure and disease profile of the patients, is not easy to modify, managerial support is. The perception of a blame culture and a lack of support is a source of concern. Management practices by hospital managers who promote job control and provide adequate resources have been indicated as important in reducing burnout (Portoghese, Galletta, Coppola, Finco, & Campagna, 2014). In this study, respondents reported working long hours with heavy workloads. This scenario, together with a less-than-ideal work environment, can lead to burnout. Some solutions are described by Papathanasiou et al. (2014) who reported that leadership, motivation, empowerment and confidence are four essential aspects that may work as protection against burnout and supporting the mental health status of the healthcare professionals.

The negative aspects of working in this environment were balanced by the opportunity to spend a protracted period of time with patients and to witness their recovery. These benefits meet the needs of the healthcare professionals who delight in caring for those that are vulnerable and needing help (Bordignon, Ferraz, Beck, Amestoy, & De Lima Trindade, 2015). On the one hand, participants were happy to be autonomous but, on the other hand, felt the absence of a line manager. This study concurred with a study that showed that there is an inverse positive association between healthcare professionals' independence and moral distress (Ann Seago, 2006).

Based on the findings, it is recommended that TB hospital managers develop a non-monetary reward/recognition system to reflect their appreciation of a scarce resource who have other employment options. In addition, implementing a system for regular training will not only improve clinical competence and assure quality of care but would have the added benefit of developing a specialised workforce. Finally, hospital managers should prioritise the procurement of necessary equipment and the implementation of an

employee wellness programme. An employee wellness programme not only has the benefit of preventing burnout, on the one hand, but also acknowledges the lived experience of employees, on the other hand. It is also recommended that the Provincial Department of Health prioritises the replacement of the roof.

Limitations and recommendations

This study focused on one TB hospital; therefore, the findings cannot be generalised. Participants in this study were aware that one of the managers would analyse the transcripts and could have been reluctant to share all personal and sensitive information. Triangulation of data could not be performed because the exit interview information of the healthcare professionals who had resigned was not available.

Conclusion

A pattern emerged of dual burden of health risks where, on the one hand, these health professionals work in an environment with the risk of contracting an infectious disease and, on the other hand, the physical working environment, with its asbestos roof and lack of isolation wards, poses a second health risk. These dual health risks are faced within a work environment characterised by a shortage of staff, a perceived lack of support and a lack of monetary recognition or compensation. This work environment led to additional risk-taking with regard to working outside the scope of practice and feelings of burnout.

The dual burden of risk is to some extent balanced by the rewarding aspects such as protracted time spent with patients and, in some cases, job autonomy. Participants remained positive and valued the opportunity to develop relationships with patients in their recovery in an atmosphere that was not characterised by urgency.

These findings offer managers a chance not only to balance the risk with reward by enhancing the positive aspects of working in a specialised environment such as this but also to be seen to acknowledge and address the negative aspects.

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The authors have declared that no competing interest exist.

Authors' contributions

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Data availability statement

The data are available upon request.

Disclaimer

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