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Masculinity, resources, and retention in care: South African men's behaviors and experiences while engaged in TB care and treatment

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Abstract

Rationale: Globally, the prevalence of tuberculosis (TB) disease is significantly higher among men compared to women. This is compounded by men's poorer uptake of TB testing and treatment, and worse outcomes for smear conversion and successful treatment completion compared to women; in South Africa specifically, TB accounts for a large portion of sex-specific life expectancy differences.

Objective: To understand men's unique barriers to accessing care and their needs while engaged in TB treatment, we conducted a qualitative study with men currently in or who recently completed TB treatment to understand how social norms for masculinity influence resource access and health behaviors, and in turn affect their engagement in care.

Methods: We interviewed 31 men using a semi-structured protocol, with domains including: social network composition and support; TB illness; and testing, treatment, and clinical care experiences. Interviews were analyzed using a constant comparison approach to identify resources and how these are exchanged within men's social networks for TB care.

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Author credit statement

Joseph Daniels PhD (JD), Andrew Medina-Marino PhD (AMM), Katherine Glockner MPH (KG), Emily Grew (EM), Nondumiso Ngcelwane (NN), Aaron Kipp PhD (AK), JD and AMM conceptualized and designed the study with AK contributing NIRM and study measure; JD, AMM, KG, and NN implemented the study; JD, AMM, KG, EM, AK, NN conducted data analysis, JD and AMM led manuscript writing and revision with contributions and reviews by KG, EM, AK, and NN.

Results: We found that men's prioritizing of work ensured food security and maintenance of masculinity norms, but delayed seeking and engagement in care. Once in treatment, men found it difficult both to negotiate clinic hours and work schedules and to navigate clinic environments without being labeled as weak. To mitigate individual resource gaps and losses, men typically accessed women family members who provided key resources (e.g., food, money, and emotional encouragement). Masculine identification with fatherhood was a key motivator to remain engaged in TB care and treatment. Loss from care was facilitated by isolation and limited access to social network resources.

Conclusion: To improve men's engagement in care and successful treatment outcomes, interventions that leverage their social networks and build upon existing resources should be strongly considered.

Keywords

Men; Masculinity; Tuberculosis; Treatment; South Africa

1. Introduction

South Africa's TB incidence (520/100,000 population) is one of the highest in the world. Men make up >60% of all microbiologically confirmed cases of pulmonary TB in South Africa, but constitute only 53% of those who successfully complete treatment (Naidoo et al., 2017; NICD, 2017; World Health Organization (WHO), 2019). Men are less likely to report early TB-related symptoms, get tested, receive their diagnosis, or have successful treatment outcomes (Horton et al., 2016; McCreesh et al., 2016; NICD, 2017). These findings suggest that attrition along South Africa's TB cascade is worse for men than women (Naidoo et al., 2017). Furthermore, in South Africa, pulmonary TB is responsible for a large proportion of the difference in life expectancy between men and women; 81% of the 11.2-year sex difference among those with HIV, and 43% of the 13.1-year sex difference among those without HIV (Reniers et al., 2017). Recent work from South Africa and Zambia also suggests that >50% of TB infections in men, women, and children are due to contact with adult men (Dodd et al., 2016). Studies show that gaps in patient-tracking, ineffective TB education, TB stigma, unwelcoming clinic environments, and work issues may differentially impact men's adherence compared to women (Mohlala et al., 2012; Chikovore et al., 2016; Skinner and Claassens, 2016; Howell et al., 2018). Yet even with a growing body of evidence documenting men's poorer TB-related health outcomes in many settings, there remains a dearth of gender stratified research to help understand men's poorer TB outcomes in African settings (Horton et al., 2016). Accordingly, understanding how social norms influence men's sense of masculinity, and in turn, their health behaviours and access to resources, may be key to addressing the inequities associated with men's poorer TB outcomes.

Men's sense of masculinity has a profound impact on how they incorporate health care into their lives (Brown et al., 2005; Mavhu et al., 2010; Chikovore et al., 2016, 2017). Research continues to demonstrate that poor treatment uptake by men living with HIV and/or TB is influenced by masculinity norms surrounding: 1) authority; 2) pursuit of social values over health; and 3) income earning vs. optimal engagement in care (Chikovore et al., 2002,

2014, 2016; Siu et al., 2014; Chinouya and Adeyanju, 2017). Furthermore, men are less likely to disclose their HIV and/or TB status to others, especially to employers, families and community members, because they fear isolation and losing self-reliance (Brown et al., 2005; Mavhu et al., 2010; Chikovore et al., 2014; Bell, J; Sharma, S; Malone, S; Levy, M; Reast, J; Little, K; Hasen, 2019). Thus, when illness befalls men, their standing within their family and community is compromised commensurate with their loss of work and material gain. Moreover, studies suggest that men fear and experience isolation and abandonment while ill, which can compromise their role as biological and social fathers (Kumwenda et al., 2011; Skovdal et al., 2011; Mavungu, 2013; Chikovore et al., 2014, 2017; Highton and Finn, 2015; Okoror et al., 2016).

Clinic-level factors also deter men from seeking or engaging in care. For example, men perceive clinics as women's domains wherein there is mutual mistrust between men and nurses; men interpret nurse behaviours as judgmental and moralistic, and nurses interpret men's approach to health as apathetic (Brown et al., 2005; Leichliter et al., 2011; Fleming et al., 2016; Bell, J; Sharma, S; Malone, S; Levy, M; Reast, J; Little, K; Hasen, 2019). Standard care procedures such as opt-out HIV or TB testing exacerbate men's sense of losing control because they perceive nurses to be "hunting" for illnesses when they had only sought care for an unrelated health condition (Chikovore et al., 2016; Bell, J; Sharma, S; Malone, S; Levy, M; Reast, J; Little, K; Hasen, 2019). When diagnosed, men fear that treatment will require them to give up aspects of their lives that reinforce their masculinity, such as drinking, socializing with friends, using traditional medicine, and their ability to work to provide for their family or fulfil their fatherhood responsibilities (Bell, J; Sharma, S; Malone, S; Levy, M; Reast, J; Little, K; Hasen, 2019; Chikovore et al., 2020). Such perceptions, norms, and behaviours may explain why men are at increased risk for presenting for care with more advanced disease, and thus having higher rates of morbidity and mortality from HIV and TB when compared to women (Cornell et al., 2009; Ochieng-Ooko et al., 2010; Takarinda et al., 2015).

A dynamic relationship exists between social norms, masculinity, and men's health behaviours (Kaufman et al., 2014). Specifically, there are clear social expectations for men to present themselves as strong and self-reliant. This may deter men from speaking about their illness, seeking support from others, and not access healthcare when ill. Given that men de-emphasize their health to generate resources as a means to maintain their sense of manhood, we conducted a study to assess the social norms and factors influencing men's TB-related health behaviours, illness experiences, and retention in TB care in South Africa.

2. Methods

In this qualitative study, we interviewed men currently or recently engaged in TB care and treatment who lived and accessed public clinics in Buffalo City Metro Health District (BCM-HD), Eastern Cape Province, South Africa. In 2017, incidence of microbiologically confirmed pulmonary TB in BCM-HD was 809/100,000 population, of which 64.1% of case were among men (NICD, 2017). Though the proportion of men with TB in BCM-HD is similar to many other South African health districts, its TB incidence is one of the highest in the country (NICD, 2017).

Participant Recruitment.

Two cadres of men were recruited from nine public clinics in BCM-HD. Cadres were defined as: 1) those that recently completed their TB treatment within the past 3 months; and 2) those currently engaged in TB care and treatment and had finished the intensive phase of therapy. To maximally protect study staff from study-related exposure to TB, we excluded from recruitment TB patients with a positive smear grading at treatment initiation without a post-intensive phase smear conversion. Using these cadre case definitions, a potential participant list was generated via review of clinic-based medical records with the assistance of health professionals and clinic staff reporting to the BCM Department of Health. All participants were aged ≥18 years, male, resided in BCM-HD, and identified as Xhosa. Trained study staff contacted men via phone to introduce the study. If interested, men were scheduled to come to a study site, provide informed consent, and be interviewed.

Data Collection.

A semi-structured interview protocol was developed to include domains grounded in the literature on men's TB, HIV, and general healthcare experience (Creswell, 2013; Siu et al., 2014; Chikovore et al., 2016, 2017). Specifically, interview protocol domains included: social network composition and engagement; TB testing, treatment support and adherence, clinical care experiences; disclosure to and support from family and friends; and the influence of TB on daily living. Interviews were conducted by two trained male interviewers in a participant's preferred language (e.g., English or isiXhosa). Weekly research team meetings were held to discuss and refine interview and data collection processes. Interviews were audio-recorded, translated, and transcribed into English for analysis. During the translation and transcription process, a second researcher assessed transcripts for accuracy by reviewing a random selection of transcripts with the respective audio-recording. All interviews were 30–90 min in length.

Data Analysis.

Three researchers open-coded three initial transcripts using their knowledge of the literature and the data collection process. Following this process, the group discussed these initially coded transcripts and group-developed a codebook for application to all transcripts. Codes were given a positive or negative symbol to better identify the context in which certain behaviours, resources, or experiences were discussed. Transcripts were then randomly assigned and independently coded by two researchers. All coding was conducted in ATLAS.ti 8 (ATLAS.ti Scientific Software Development GmbH, Berlin, Germany]. Once all transcripts were coded, quality assurance procedures were applied, such as determination of proper application of codes per the group-developed codebook, and assessment of inter-coder reliability. The team discussed any variance in coding and/or interpretation, with assigned final codes based on consensus.

Using a constant comparison approach, researchers analyzed data inductively by participant group—currently in treatment and recently completed treatment—over a series of meetings (Dye et al., 2009; Mitchell et al., 2016; Daniels et al., 2018). Using matrices, data were categorized and triangulated to identify and determine the consistency or divergence of TB illness and treatment themes across participant groups (Dye et al., 2009). Memo writing and

causal diagrams were completed and discussed among the research team to refine results. A formal presentation of preliminary results was delivered to the full research team, which further directed analysis that applied the same process as outlined here.

Results were conceptualized as mental (i.e., self-perception, goals, coping skills, relationship-level support) or tangible (i.e., money, work, food, housing) resources that were accessed and exchanged by individuals and their social networks (Johnson et al., 2010; Kaufman et al., 2014). Resources can be influenced by social expectations and norms (i. e., both perceived and enacted), and are known to inform healthcare decision-making (Kaufman et al., 2014). This concept of resources and their exchange within an ecological framework was used as an interpretive lens to understand men's engagement in TB care.

Data Representation.

Each participant is represented by their age and TB treatment status. In-text quotations use the following notations: Currently in Treatment (CIT), Recently Completed Treatment (RCT).

3. Results

A total of 31 men, ages 23–60 years (mean age = 36 years), were interviewed; all men in our study described experiencing TB-related symptoms (i.e. sweats, weight loss, coughing, and nausea). A total of 16 participants were currently engaged in treatment and 15 had recently completed treatment. Among those 31 men, 11 discussed having temporarily stopped treatment in the past and 1 described cycling in and out of treatment. Most men were unemployed or worked in the informal sector as day laborers.

TB and its treatment lead to financial and food insecurities.

All men described barriers that influenced and impacted their treatment adherence and engagement in care. Many men discussed difficulty in maintaining their jobs while sick and/or seeking TB care and treatment. In some cases, men lost their jobs because their TB symptoms prevented them from safely conducting their work, or were fired due to their perceived risk to others. One participant described:

> Mostly, it was the coughing. At my work, I work with a blade that's similar to the one they use in the butchery. So, I would be busy cutting a battery with one hand [with the blade], and on the other side, I am coughing. So, I did have a bit of a challenge.
>
> –33 years, RCT.

This participant worked at a scrap metal factory and explained that he was unable to perform his work because of his coughing, which prevented him from safely handling a blade to cut batteries. Because of this, he lost his job. After losing his job, he sought clinical care, was diagnosed with TB, and initiated treatment. After successfully completing treatment, he was employed again.

Another participant spoke about the lengths he went to hide his symptoms, and how he eventually lost his job anyway despite his efforts:

[TB symptoms] were affecting me, my bro, because I end[ed] up losing my job. You see, as I work[ed], [there] were people who…[if] I cough in front of [them], then [they] begin to talk about me [to the boss] and say, '[he's] that one I suspect'. The boss [would] look [at] me with a sharp eye, and they [work staff] see that I don't perform like before. So…I explain to them that I will go to the clinic… [but] I prove what have [by saying I will go to the clinic]. So, I ended up getting fired... – 38 years, CIT.

Although this participant tried to keep working despite his TB, his co-workers noticed his symptoms and complained about his coughing to the boss. When confronted, he explained that he would go to the clinic, presumably to get tested and initiate treatment. However, in the process of acknowledging his illness, he was fired to prevent other employees from getting TB and lowering work performance.

Even when accessing treatment, food security was a significant concern for men. One participant stated, *"The treatment makes you hungry. So, I must eat a healthy diet"* (33 years, CIT) While another said, "*What made me cry out is the fact that [the treatment] would make me unbelievably hungry…[and] food is expensive nowadays"* (29 years, RCT). Another participant directly linked food insecurity with illness when describing how work was done for food:

My brother, the fact that people end up stopping taking their treatment [is] because for them to eat, they first have to hustle [work] by cleaning people's yards and [then] get paid by being given food. So, when they are sick, they can't stand up and do those small jobs, and end up not having food. – 38 years, RCT.

Not only does loss of employment result in financial insecurity and food purchasing power but also a direct pathway between employment and food security emerges when food is the currency of payment for work. Furthermore, while some men were able to access food resources when unemployed, the increased hunger induced by TB treatment increased the need for and cost of food. Ultimately, the need for food resources, exacerbated during TB treatment, directly impacts some men's self-reliance and ability to adhere to treatment by themselves.

Community gossip and limited time to attend clinic.

Men in our study described common concerns and barriers to clinic access, including social norms that influence their health-seeking behaviour, community gossip, as well as clinic operations and environments not conducive to men's needs.

….us men tend to be shy about sicknesses unlike the ladies who are not shy at all. If they [women] find something [illness] they [are] quick to [go to] the clinics. Men are scared of what other people might say about them going to the clinic and this is what kills us. − 23 years, RCT.

Interviewer: Why do you think men find it difficult to go to the clinic?

Participant: Men are shy because they feel that if they go to the clinic, they are not real men. This would be like I am taking my manhood to the clinic and women will gossip about us. − 34 years, RCT.

Even though men are willing to go to the clinic when sick, potentially being labeled "weak" or "not a man" deters them. Unable to cope with or navigate their manhood being questioned, men may delay, sporadically engage in care, or choose not to attend clinic. As another man stated:

> "Men are ashamed to talk about their health issues because once they [other men] talk about them having a sickness or taking treatment–men are seen to endure pain and when they cannot–we as other men say they are not men but women"
>
> – 25 years, RCT.

The social expectation that men are to endure pain is propagated by both men and women. Through the process of enduring pain and recovering from illness, men prove their strength and manliness. Supporting this dynamic, some men described feeling shame when sick, and further linked masculine norms about illness to weakness. One man fully recognized that *'this is what kills us'* (23 years, RCT) – that is, gossip and social norms that deter men from seeking care for preventable diseases.

Although not unique to men, long wait times in clinics were a significant concern, especially to those in the informal sector who do not have sick leave. Participants described the inability to negotiate their work schedule and time to pick up treatment and further engage in care. One participant specifically described the challenges of fitting clinic visits around his work schedule, and pressure to avoid taking time off at work:

Yes, it [a clinic visit] does take time. At the same time, you cannot tell [the nurses] about you being in a hurry or being late to go to work. If you have an appointment at the clinic, you must know that you have lost that day [spending the day at the clinic], and at work, it was too much pressure because they did not want to give you time off like that [to go to clinic]. – 35 years, RCT.

Since there are no pre-booked appointments in public sector clinics per se, this participant describes feeling that full engagement in TB care was out of his control. This was because he could not take time off work to attend clinic, nor shorten the amount of time spent at the clinic in order to either be on time or return to work afterward. Similarly, many men, especially those in the informal sector, discussed challenges with getting time off from work. As a result, men felt they had to prioritize work to make money instead of engaging in their health care.

Mothers, partners, sisters, and aunts supporting and providing resources for men.

Most men described how women family members and partners provided treatment reminders, encouragement and support (e.g., money and food), which ultimately helped men to navigate the gaps or losses in their own resources and become healthy again (i.e., successfully complete treatment and be cured of TB). Some men described how these same

women helped them recognize the severity of their symptoms, which led them to seek care, as described in the following quote:

I was not suspecting anything [about being ill]. [My wife] is the one who says: 'Hey you, it seems [there] is a problem with you. It's either you go to the clinic or a doctor because, the way I see you, you are losing weight.' But I ignored what she was saying. She insisted. Then, we eventually went to see the doctor and that is when I was diagnosed with this [TB]. − 38 years, CIT.

Interviewer: What symptoms did you notice when your health began to tumble?

Participant: I sweat a lot without knowing the reason, I thought it was "Bhabhalaz" (hang-over) because I drank a lot. My aunt is the one who noticed I wasn't well.

Interviewer: How did these symptoms affect your daily routine?

Participant: I drank a lot Monday to Monday, so I didn't know if I sweat because of an illness or alcohol.

Interviewer: What finally made you decide to visit the clinic?

Participant: My aunt encouraged me to go to the clinic. – 31 years, CIT.

Neither participant recognized the severity of their symptoms. The first man initially dismissed his wife's observation and concerns. However, she persisted in encouraging him to seek care. The second man assumed his symptoms were alcohol-related, but his aunt noticed that he seemed ill and encouraged him to go to clinic, which he did. Men's existing relationships were crucial to their recognition of the severity of their symptoms and/or the importance of seeking care. Such support, and at times demands, by women in their lives also includes reminders to attend clinic and take medication. One participant described reminders provided by his aunt, saying, *"She even reminds me about my dates to the clinic"* (31 years, RCT). While on treatment, one participant's mother offered multiple forms of support:

> Say, maybe I have to be somewhere for a day. I would wake up, and my mother would cook porridge for me while I'm bathing. [Afterward] I would just quickly have the porridge and so soon after I can take my medication. So, they were really looking after me. Even when the treatment is about to get finished, they would ask me if I had money to go and fetch it [medication refill] and ask if I have transport money [to attend clinic].
>
> –23 years, RCT.

This participant obtained from his mother a spectrum of resources and support, including medication reminders, emotional support, food, and transport money for clinic visits; all resources needed to remain engaged in care and treatment. Similarly, a participant stated that, "*My mother is the person that I talk to, even when I started the TB treatment she is the one who made sure that I drink it and she is the one who* supported *me most" (25 years,*

RCT). Food provided by women family members allowed men to take their medication as directed without experiencing adverse side effects related to hunger:

> They [nurses] told me to take my treatment daily before meals first thing in the morning. Though I missed some days because I [had] nothing to eat. You can see I am with my sister. She is the person who supports me now. I even took my treatment because she takes care of me.
>
> – 41 years, CIT.

Even when this participant was unable to take his medication due to food insecurities, like most men, he described understanding and attempting to follow the advice of nurses. When he began staying with his sister, she provided him and his son with meals and a place to stay in her home. These food and housing resources allowed him to adhere to his treatment and remain engaged in care. However, he did explain that this reliance on his sister compromised him significantly: *"I depend on her as well as my son depends on her … Especially now [that] I'm not working, I depend on her financially. This is the pain that never goes away."* His inability to be self-sufficient and fully responsible for himself and his son left him feeling inadequate. This had a significant and direct impact on his sense of being a father and man, as he and his sister will remember that there was a time in his life when he could not take of himself or his son.

Some participants expressed challenges in accessing familial and partner support, as well as experiencing isolation from family members and social networks:

And, the fact that my girlfriend left me, and my mother started to stay with her boyfriend, I really lost focus. I left treatment where I stayed because I was now alone. So, I decided to go back to smoking again and that was my mistake. – 26 years, CIT.

> [M]y family, they don't have backbone…[my] older sister and my other siblings called my ex-girlfriend who I have a kid with, and [she] stays in Cape Town. They told her that I was dying and that she couldn't even recognize me, if she sees me. And what's worse, [my older sister] didn't even come to visit me when I was hospitalized.
>
> – 38 years, CIT.

The man in the first quote describes being successfully engaged in treatment while he was emotionally supported by his mother and girlfriend. However, after losing their support, he became disengaged and was lost-from-care. In the second quote, a man discusses how his sister called his ex-girlfriend to tell her not to see him. Other men also described being isolated from their families while sick, with some family members avoiding contact with them and discouraging others from contacting them as well. The multi-pronged support (or lack thereof) which appears to come mainly from female family members seems an important aspect of men's network. Without this emotional support, men described being at increased risk of becoming disconnected and isolated from their families and communities, and thus at increased risk of disengaging from care and treatment.

Fatherhood as treatment motivator.

Many men were motivated to complete their treatment to protect their families from becoming infected and to continue providing for them, especially their children. When asked what his family might think if he stopped treatment, one participant stated:

Yes, that was worse for my girlfriend [the idea that he would stop taking treatment]. I did think of that because if I stop, I would infect her and my child. And, I love my child a lot, and I like to kiss him. [I love] my family as well. I had to stand at a distance when I'm talking to them because it might infect them. − 38 years, RCT.

Although most men did not fully understand how TB was transmitted, they were concerned about infecting loved ones, especially their children. As described in the following quote, by not engaging in and completing treatment, men felt they were putting their children and family at risk for TB:

> At home, I would think of all this coughing, and I thought it was TB at some stage but did not pay attention to it….I thought to myself that if it is TB, there were chances I could infect my daughter. That disturbed me, and it would not give me time to play with her and bond.
>
> –29 years, RCT.

We found that men who mentioned being fathers expressed some level of concern or motivation for finishing treatment as a means of protecting against onward transmission to his family. Most men described their roles as sons, partners, and fathers as motivation to take and complete TB treatment to protect their families and maintain their masculine identities, especially that of being a father.

Interviewer: When you think of things that keep you healthy, which words come to mind?

Participant: My daughter.

Interviewer: How so?

Participant: In the stage that she is in, I am everything to her. Without me…., she cannot do anything by herself, for example, food, life lessons, I have to show her the way….I saw that it [TB] was not a death sentence. I mean there is life after TB, and I counted the time you needed to take this treatment for six months….What I knew is that I have a child…and six months is small for me to lose out on so much….

− 26 years, CIT.

Some men discussed how they came to understand that TB was not a 'death sentence' and factors that helped them come to terms with the length of treatment. The motivation behind their treatment adherence was rooted in their role as fathers. Furthermore, many men who mentioned being a father felt that 6-months of treatment was a small price to pay to maintain their role as a father and provider:

Firstly, I'll take my treatment till I finish the time that was set for me because…I'll go back to being me. And secondly, I have kids, and when I am feeling better, I need to go back to the jobs I was doing [to support my kids]. – 41 years, CIT.

In the eyes of many men, a key part of being a father is proving for one's children. Consequently, work, job, and financial security issues strongly played into men's decision-making regarding their engagement in TB care. However, by drawing upon the mental benefits of being a father, some men were able to cope with the burdens of seeking and engaging in TB care and treatment. Ultimately, the masculine identity associated with fatherhood helped men navigate societal perceptions of being weak if they engaged in care, and promoted the notion that to be a good father they had to take their medication and become healthy again.

4. Discussion

By conceptualizing resources and their exchange within an ecological framework, we found that among men in our study, health behaviours associated with TB testing and engagement in care were influenced by their loss, maintenance, and access to resources (Johnson et al., 2010; Kaufman et al., 2014). Specifically, access to tangible and mental resources within their social networks engendered retention in care, while loss of these resources increased risk of disengagement. Traditional masculinity ideologies and norms led men to choose work over health to maintain self-sufficiency and to mitigate the anticipated impact of gossip on their manhood and positions within their communities and households (Brown et al., 2005; Chikovore et al., 2016; Bell, J; Sharma, S; Malone, S; Levy, M; Reast, J; Little, K; Hasen, 2019). However, masculine identities, especially associations with fatherhood, played a positive, motivational role in men's decisions to remain engaged in care (Skovdal et al., 2011).

Similar to other studies, we found that traditional masculinity norms negatively influenced men's interpretation of their symptoms (Chikovore et al., 2014; Siu et al., 2014; Chinouya and Adeyanju, 2017). This subsequently delayed their decision to seek care, which put them at risk of losing their job due to severe illness (Chikovore et al., 2014, 2017). Men in our study expressed strong individual desires and expectations to keep working and maintain access to material and financial resources to support their households. This was because their self-perceived and socially reinforced sense of masculinity and authority within their family and community depended on it. For example, going to the clinic at any point while ill, even for TB testing, was perceived as being weak, as men "must endure pain" (Chikovore et al., 2020). Furthermore, men feared being gossiped about and isolated from family and friends, and felt emasculated when seeking support from others (Skovdal et al., 2011; Bell, J; Sharma, S; Malone, S; Levy, M; Reast, J; Little, K; Hasen, 2019). These feelings and experiences were both self-imposed and enacted upon them by other men and women in their families and communities (Brown et al., 2005). Of great importance is the fact that men recognized that the social expectation of being strong was 'killing them', but few described accessing or developing coping mechanisms (i.e., a mental resource) to navigate these norms.

The intersection of masculinity, access to resources (i.e., food security), and disclosure of illness seems to place men in a catch-22 (Mohlala et al., 2012; McCreesh et al., 2016) such that men's efforts to access family or partner resources when they could not contribute themselves was seen as shameful and unmasculine (Mavhu et al., 2010; Siu et al., 2014). To save face, men felt the need to disclose their illness, but disclosing their illness would be to admit weakness, which is itself unmasculine. Men reported that they had to work to buy food for themselves and their families, or had to work to access food to take their treatment. Consequently, many sick men continued to work until they were physically unable to do so or were fired from their jobs for underperformance or TB-related discrimination. Moreover, men reported that their work schedules conflicted with clinic business hours and wait times, thus impacting their ability to access care (Howell et al., 2018). Ultimately, men were caught in a health-compromising cycle of working to maintain resources, perceptions of masculinity, and poor health behaviours, which inhibited them from engaging in clinical care and adhering to treatment regimens.

When men were unable to secure food, money or emotional support on their own, women in their immediate family (i.e., mothers, partners, sisters, and aunts) typically stepped in. This support positively impacted men's engagement in care and treatment adherence. However, this dependence, "the pain the never goes away", made some men feel guilt, shame, and failure, as they felt it burdened the resources of their family members, with potential long-term negative impacts on how they are perceived as me (Siu et al., 2014). Although a few men discussed male friends and brothers who supported their treatment, none mentioned accessing resources or emotional support from fathers or uncles. Given traditional masculinity norms that interpret illness as weakness, men may actively choose to keep their illness secret to prevent any weakness shaming from other men, especially those close to them (Chikovore et al., 2014, 2017). Despite the emasculation that men felt by relying on female family members, their support was crucial to men's retention and engagement in care. Given the role that women family members play in the provisioning of resources (i.e., financial, emotional, food support), additional research is needed with these key supporters to understand the dynamics of their support during treatment, and how women may be engaged in future intervention development and delivery.

Finally, fatherhood was a highly valued identity resource. Specifically, responsibilities associated with fatherhood were key motivators for some men to actively engage in care and complete their treatment; the positive mental resource associated with fatherhood identification has been described in the HIV literature (Sherr, 2010; Highton and Finn, 2015). Men expressed a desire to become healthy again in order to provide and care for their children, as well as a desire to not transmit TB to their children. The issue of fatherhood was an emergent theme and thus was not explored more deeply. Given the dearth of studies of men's health in the context of TB, such observations have not been previously reported. However, fatherhood has been shown to maintain negative impacts of HIV for children and families (Sherr and Barry, 2004; Montgomery et al., 2006; Sherr, 2010; Dodd et al., 2016). Further exploring how to craft intervention messaging around fatherhood and other altruistic behaviours should be considered.

5. Limitations

We note a number of limitations to our study. First, our results build connections between how masculinity social norms influence men's access to resources and engagement in TB care. However, we could not show how these influenced those lost-from-care. Second, we did not interview men's key supporters or clinic nurses. As such, we were unable to incorporate their perspectives and experiences into a fuller understanding of factors influential in men's accessing of TB testing and treatment outcomes. Third, we did not compare men with women using respective interviews. Consequently, except for men's perception that clinics are female spaces, and fatherhood being a motivator to remain in care, we were unable to more fully explore gender-specific and gender-neutral factors influential to engagement in care and treatment This said, while some factors discussed by men may seem to be gender-neutral, the mechanisms by which they act, or influence health behaviours, may be gender-specific. Our ongoing research is examining these gaps by interviewing men lost-from-care, key supporters and nurses, and comparable cohorts of women engaged in TB care. This research aims to identify and refine men's unique preferences for a male-centered TB treatment support intervention.

6. Conclusions

In the absence of individual mental or tangible resources, or the ability to access these within their social network, our study suggests that men are at risk of experiencing isolation, being lost-from-care, and suffering poor health outcomes. Though women also experience poor TB outcomes, male gender inequities associated with TB require a greater commitment by communities, governments, and donors to understand and intervene upon the mechanisms that differentially impact men (i.e., develop male-centered interventions). While traditional masculinity ideologies have been associated with poor health outcomes, masculine identities, such as fatherhood, can be critically positive motivators for improving men's health outcomes. Given the importance of resources like food security and emotional support on health outcomes, identifying, building upon and supplementing resources within men's networks should be strongly considered to improve men's engagement and retention along the TB care cascade.

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