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Barriers and Motivators of Private Hospitals' Engagement in Tuberculosis Care in Uganda

Wilson Tumuhimbise[1] · **Angella Musiimenta**[1,2]

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Abstract

The involvement of private hospitals in Tuberculosis care in Uganda is still limited. There is a lack of literature about the barriers and motivators to private hospitals' engagement in Tuberculosis care in Uganda. To explore the barriers to and motivators of private hospitals' engagement in Tuberculosis care. The study employed a qualitative study design that utilized in-depth interviews with 13 private healthcare workers purposively selected in June 2020 due to their active involvement in Tuberculosis care from four urban private hospitals in Mbarara Municipality. An inductive, content analytic approach framed by the Consolidated Framework for Implementation Research, was used for analysis. The interviews were transcribed and coded to identify key themes using content analysis. Focusing through the Consolidated Framework for Implementation Research, barriers to private hospitals' engagement were related to cost, external policies and incentives, structure characteristics, networks and communications, and knowledge and beliefs about the intervention. These include concerns regarding the payment of care by patients; indirect income-generating nature of Tuberculosis management; lack of drugs, registers, and diagnostic tools; lack of accreditation from the Ugandan Ministry of Health; limited space for keeping Tuberculosis patients; lack of proper follow-up mechanism; lack of training and qualified human resources; and delayed seeking of health care by the patients. Perceived high-quality of care in the private hospitals; privacy and confidentiality concerns; proximity of private hospitals to patients; and formalization of partnerships between private hospitals and the government were the motivators that arose from the three constructs (relative advantage, patient needs, and resources, and engaging). The engagement of private hospitals in Tuberculosis care requires commitment from key stakeholders supplemented with the organizational shared beliefs towards this change. There is a need for ensuring mechanisms for lessening these barriers to ensure full engagement of private hospitals in Tuberculosis care.

Keywords Tuberculosis · Public private mix · Challenges · Enablers · Implementation frameworks

Introduction

Despite being curable, an estimated 1.4 million people globally die due to Tuberculosis (TB) annually (World Health Organization, 2020). The majority (98%) of these deaths occur in developing countries, mostly among young adults, thus negatively affecting their productive years. Tuberculosis is ranked one of the top 10 causes of death worldwide (World Health Organization, 2017). TB is also a leading killer of people infected with human immunodeficiency viruses (HIV) (Centers for Disease Control & Prevention, 2016). Uganda is ranked among the top 30 TB/HIV countries globally, with the highest estimated number of incident TB cases among people living with HIV (World Health Organization, 2019). The overall burden of TB in Uganda is higher than previously imagined, with an incidence rate of 200 per 100,000 (World Health Organization, 2021).

Originally, the private health sector was excluded from providing public health initiatives like TB programs since the government was perceived to be a better place to offer promotive, preventive, curative components of healthcare (World Health Organization, 2001). However, due to the increase in the global TB burden, which overwhelmed the National Tuberculosis Programs, a need to shift and involve all healthcare workers in TB care including private providers

✉ Wilson Tumuhimbise
twilson@must.ac.ug

[1] Mbarara University of Science and Technology, P.O. Box 1410, Mbarara, Uganda

[2] Angels Compassion Organisation (ACO), Mbarara, Uganda

arose. In an effort to supplement and expand the Directly Observed Treatment Short-course (DOTS), 2003, the World Health Organization (WHO) introduced Public Private Mix (PPM) in 2003 (Uplekar, 2003). PPM is defined as various strategies and approaches that link all healthcare entities from both private and public sectors to national tuberculosis programs for the expansion of DOTS activities (World Health Organization, 2004). Empirical evidence from the implementation of PPM yielded improved case detection and holding in Nigeria (Asuquo et al., 2015), Myanmar (Nwe et al., 2017), and India (Dewan et al., 2006). In addition, PPM has proved to be a cost-effective approach for TB care by reducing the financial burden from patients receiving TB care (cost of drugs) in the private sector (Anand et al., 2017). Although global progress has been registered in the involvement of private providers and the implementation of PPM, a large number of healthcare providers remain unengaged (Uplekar, 2016).

The provision of TB care services in the private healthcare settings in low and middle-income countries is characterized by limited institutional capacity and weak integration of the TB control into general health services (Ogbuabor & Onwujekwe, 2019) as evidenced in Nigeria, as well as patchy participation of the private providers and distrust from the public sector in India (Anand et al., 2017). In addition, the private sector is also coupled with a frequent loss to follow-up among the treated TB patients as seen in Myanmar (Nwe et al., 2017), and varying diagnostic, referral, and treatment services with the potential of amplifying the risk of drug resistance (Anand et al., 2017; Hudson et al., 2018). In 2018, an estimate of one-third of the total individuals who developed TB was not detected and notified by the National Tuberculosis Programs (World Health Organization, 2019) and this was more noticeable in settings with the large private sector in high TB burden countries (Stallworthy et al., 2020). Given the significant role played by the private sector in the provision of TB services, the WHO highly recommends the engagement of private healthcare providers as a strategic action in response to a high estimate of TB prevalence globally, for the provision of TB services (World Health Organization, 2001). The deliberate and systemic engagement of private health care workers can potentially enable better TB management outcomes and is crucial in enhancing the reduction of unnecessary deaths and sufferings due to substandard diagnosis, inappropriate treatment and care that characterize the private sector, which in the long run, leads to the reduction in catastrophic costs (World Health Organization, 2018a).

In Uganda, 48% of the population prefer seeking healthcare services in private hospitals compared to 34% who prefer government hospital facilities and 17.6% who prefer, privately owned pharmacies, village health teams, and traditional practitioners (Uganda Bureau of Statistics, 2018). This wide client base makes private providers key players in the healthcare service delivery in Uganda (United States Agency International Development, 2017). However, most private health facilities in Uganda are incapacitated to provide TB treatment and care (Wynne et al., 2014) they screen patients for symptoms and refer them for better management in public health facilities. The limited involvement of the private sector in TB care (Ministry of Health, 2017b) has resulted in increased prevalence and incidence of TB cases due to delayed case detection, lack of follow-up, and non-medication adherence. Consequently, catastrophic costs (spending at least 20% of household income on TB care) (Ministry of Health, 2019) in terms of managing Drug Sensitive TB (DS-TB) patients and Multi-Drug Resistant TB (MDR TB) to patients and their families (World Health Organization, 2018b), increased risk of both untreated and undertreated infections and drug resistance (Cohen et al., 2016) among patients become inevitable.

Literature about barriers and motivators of private hospitals' engagement in TB care in Uganda is lacking. These barriers and motivators can be holistically identified through the Consolidated Framework for Implementation Research (CFIR) which is rich in providing a realistic structure of approaching multilevel constructs in the real world (Damschroder et al., 2009). The CFIR framework is made up of five key domains which have been interpreted as relevant to this study: (1) Intervention characteristics that could influence an intervention, it includes stakeholders perceptions about relative advantage of engaging private hospitals in TB care, (2) Outer settings; external features that could influence the engagement of private hospitals in TB care (3) Inner setting; features of the private hospitals that could influence their engagement in TB care (4) Characteristics of individuals involved in private hospitals that might influence the process of engagement in TB care and (5) Implementation process that involves tactics that might influence the engagement of private hospital's in TB care.

Although the CFIR framework has been utilized in understanding the perceptions of nurses in task-shifting strategies in hypertension (Gyamfi et al., 2020), but has not been utilized in investigating the barriers and motivators associated with the engagement of Private Hospitals in Tuberculosis care in Uganda. It largely remains unclear how to translate our understanding of barriers and motivators into private hospitals' engagement in TB care. The application of CFIR to understand the factors associated with private hospital's engagement in TB care is crucial in guiding the identification of a potential behavioural technique to enable the involvement of private hospitals in active TB care. CFIR was chosen for this study because it has a successful track record for providing a comprehensive approach for identifying barriers and facilitators to the adoption of health behaviours and guiding formative evaluations that can address

context-specific barriers that could compromise the viability of the interventions (Damschroder et al., 2009).

In this paper, we document an exploratory analysis guided by the CFIR in which we sought to explore the context-specific barriers and motivators affecting the private hospitals' engagement in TB care in Uganda to better inform the design of behavioural interventions that are aimed at enhancing the involvement of private hospitals in TB care.

Material and Methods

Theoretical Framework

The Consolidated Framework for Implementation Research (CFIR) is a conceptual framework established to guide scientists to systematically assess multilevel implementation factors which influence intervention implementation, and effectiveness (Keith et al., 2017). The framework offers a multi-stakeholder approach for exploring views of multiple stakeholders and provides a practical way for approaching complex, interacting, multi-level states of constructs in the real world (Damschroder et al., 2009). In addition, the framework offers a flexible approach to be tailored by the researcher to the context being investigated. Thus, offering a rightful analytic approach for understanding barriers and motivators to private hospitals' engagement in TB care. The themes were categorized per the domains of the CFIR framework to better understand multilevel barriers and motivators associated with private hospitals' engagement in TB care.

Study Design and Setting

This study employed a qualitative approach which involved conducting in-depth semi-structured interviews. Healthcare workers (medical doctors and nurses) involved in TB treatment and care were recruited from three private for-profit hospitals and one private not-for-profit faith-based hospital was purposively selected due to their current involvement in TB care in Mbarara municipality in rural, southwestern Uganda.

Hospital 1: a private for-profit hospital that provides general medical consultation services to over 2600 patients that attend the out-patients department (OPD) annually (Ministry of Health, 2017a). (Number/cadre of healthcare workers involved in TB-related care: four medical doctors and six nursing officers).
Hospital 2: a private not-for-profit faith-based hospital with an OPD that serves over 27,764 patients annually (Ministry of Health, 2017a) and offers general medical treatment and ART services. (Number/cadre of healthcare workers involved in TB-related care: four medical doctors and eight nursing officers).
Hospital 3: a private for-profit hospital providing general medical consultation services to over 13,835 patients in the OPD annually (Ministry of Health, 2017a) and has an ART clinic where HIV patients receive their treatment and care. (Number/cadre of healthcare workers involved in TB-related care: five medical doctors and 10 nursing officers).
Hospital 4: a private for-profit hospital providing general medical consultation services to over 1500 patients annually. (Number/cadre of healthcare workers involved in TB-related care: four medical doctors and six nursing officers).

Selection of Study Participants

The study participants were purposively selected to participate in the study based on their experience and willingness to provide relevant information about TB care practices in private hospitals. A total of 13 healthcare workers (11 doctors and two nurses) were recruited to identify the barriers encountered and motivators for TB care. The inclusion criteria for study participants were as follows: (a) employed medical doctor/nurse in a private hospital setting, (b) have experience in TB care practices, (c) willing and able to give informed consent.

Data Collection

Between June and July 2020, a semi-structured interview guide was developed in English, pretested to ascertain the reliability and validity of data to ensure an accurate data collection process. Semi-structured in-depth interviews with the medical doctors and nurses from the study sites were conducted by WT who has experience and training in qualitative research and research ethics. Interviews were carried out until thematic saturation was reached at the 13th participant and no new themes were coming out from the data except repetition. Each interview lasted between 30 and 40 min in a private convenient place depending on the respondents' preference. Interviews were digitally recorded and later transcribed. The information about the barriers and motivators to TB care was elicited from the participants. Following each interview that was carried out, the transcripts were reviewed by AM for quality assurance, clarity, and detail. A short survey was also administered to gather their social demographic details.

Data Analysis

A coding scheme through an initial review of transcripts was developed and an inductive content analysis approach

(Hsieh & Shannon, 2005) was used to generate themes and subthemes from the codebook. Qualitative categories from several sections of the texts from the transcripts about the barriers and motivators to private hospitals' engagement in TB care were extracted. The codebook was reviewed by AM for ensuring that content was relevant to the barriers to and motivators for private hospitals engagement in TB care were extracted. WT assembled the codebook following an iterative approach that included category construction of codes to represent the content, writing the operational definitions, and elaborations. Differences in the coding were harmonized by the investigator to come up with a final codebook. Intercooled STATA (Statacorp 2013 Stata Statistical Software Release 13; StataCorp, College Station, TX, USA) was used to describe study participants' characteristics.

Results

Thirteen healthcare workers including 11 medical doctors and two nurses from four private hospitals participated in this study. Participants were recruited because they were actively involved in screening and diagnosing presumptive TB patients to gain deeper insights and identify the behavioural diagnosis for the identified barriers to enable active TB care in private hospitals. The majority of the participants were male ($n=8$), and their median age was 29 years of age, which the majority were from private for-profit private hospitals ($n=11$) as shown in Table 1 below. Of the four private hospital facilities that were part of this study, only two were accredited to provide TB services as shown in Table 2 below.

The following section highlights the barriers to and motivators of private hospitals in TB care which are categorized under the five domains of the CFIR framework, namely: the intervention characteristics, outer setting, inner setting, characteristics of the individuals, and the process of implementation. Of the 39 CFIR constructs assessed, eight were relevant to the context of this study to assess barriers and motivators to private hospitals' engagement in TB care as shown in Table 3 below.

Barriers to private hospitals' engagement arose from the following five constructs: cost, external policies and incentives, structure characteristics, networks and communications, and knowledge and beliefs about the intervention. The barriers include concerns regarding the payment of care by patients; indirect income-generating nature of TB management; lack of drugs, registers, and diagnostic tools; lack of accreditation from the Ugandan Ministry of Health; limited space for keeping TB patients; lack of proper follow-up mechanism; lack of training/qualified human resources; and delayed seeking of health care by the patients. Motivators to private hospitals' engagement arose from the following constructs: relative advantage, patient needs and resources, and engaging. The motivators include perceived high-quality of care in the private hospitals; privacy and confidentiality concerns; long distances to the public health care centers; and formalization of partnerships between private hospitals and the government.

Table 1 Participants' demographics

Baseline characteristic	Participants *n*
Median age (IQR)	29 (28–31)
Gender	
Female	5
Male	8
Marital status	
Single	5
Married/partnered	8
Highest educational level	
Certificate	1
Diploma	1
Degree	7
Masters	3
PhD	1
Designation	
Nurse	2
Doctor	11
Number of years in general medical practice	
1–3	7
4–5	2
> 5	4
TB services provided by healthcare workers	
Screen and manage[a]	5
Screen and refer[b]	8

IQR interquartile range

[a]Participants able to both screen and manage TB cases

[b]Participants able to both screen and refer presumptive case

Table 2 Facility level demographics

Facility	Accredited for TB service delivery	
	n	(Yes/No)
Hospital 1	4	No
Hospital 2	2	Yes
Hospital 3	3	Yes
Hospital 4	4	No

N represents the number of healthcare providers from each facility

Table 3 CFIR constructs and their related barriers or motivators for the engagement of private hospitals in TB care

CFIR domain	CFIR construct	Barrier or motivator	Explanation for motivators and barriers
Intervention characteristics	Relative advantage	Motivator	Private hospitals were perceived to have a relative advantage of providing high-quality healthcare services and for enabling privacy and confidentiality for patients
	Cost	Barrier	Healthcare providers perceived high costs in terms of payment for care by patients. In addition, they also noted that TB care is an indirect income-generating service which makes it unattractive to venture in since most private hospitals are for-profit
Outer setting	Patients' needs and resources	Motivator	Private hospitals are nearer to patients thus saving them from costs involved in traveling to public health centers that are far
	External policy and incentives	Barrier	Lack of drugs, registers, and diagnostic tools and lack of accreditation from the Ugandan Ministry of Health hinder the engagement
Inner setting	Structure characteristics	Barrier	Limited space for keeping TB patients
	Networks and communications	Barrier	Lack of proper follow-up mechanism for the referred patients
Characteristics of individuals	Knowledge and beliefs about the intervention	Barrier	Lack of training and qualified human resources to manage TB disease and delayed seeking of health care by the patients
The process of implementation	Engaging	Motivator	Formalization of partnerships between private hospitals and the government

Intervention Characteristics

Private hospitals were perceived to have a relative advantage of providing high-quality healthcare services to patients compared to public hospitals. They (participants) highlighted patients' perception of being cared for in terms of prompt services and attention provided in private hospitals which motivates them to seek health care in private hospitals. A medical doctor from Hospital 2 reported that "Some patients may come because they were previously treated well in that hospital or the attendant liked the services offered, in case of any illness, they are more likely to come back".

In addition, private hospitals also were perceived to have a relative advantage of enabling privacy and confidentiality for patients since they offer an opportunity to patients to have the liberty to get drugs from the hospital privately and also have the freedom to make private arrangements for drug delivery within their homes.

> So in a private hospital, there is privacy, patients are taken very well, they can go and get their drugs in privacy sometimes, they can arrange taking drugs to their clients at their homes which may not be possible in a public hospital. (Medical doctor, Hospital 1).

However, on the other hand, the cost was reported as a barrier to private hospitals' engagement in TB care. Across the private hospitals, participants highlighted that payment for services involved in the treatment of TB in form of additional costs that come along with the TB disease and the indirect income-generating nature of TB treatment service provision as barriers to TB care efforts in private hospitals. TB is treated for a considerably longer period (six months and more) which makes it difficult for patients to manage the comprehensive private hospitals' care management. At Hospital 1, a medical doctor said "I think the challenge is in the length of treatment and the cost that would come with that and so you find that the challenge is in the payment of care". Another medical doctor at Hospital 4 explained that "Most of these patients may not afford comprehensive private management in the private hospitals when there is an almost free government facility that would give free drugs to them".

Furthermore, the indirect income-generating nature of TB treatment service provision makes it difficult for private hospitals to engage in due to its infectious nature, thus making it an unattractive venture to venture into since most private hospitals are for-profit.

> TB management is not something that may bring in money quickly, it is not a direct income-generating activity, and therefore the private facility owners have to be convinced about the need to give care to people who may not be able to pay back. (Hospital 4, Medical Doctor).

Outer Setting

Private hospitals were perceived to meet patients' needs and resources. Participants highlighted that private hospitals are nearer to patients thus saving them from costs involved in traveling to public health centers which are far. This is a key motivator for engaging private hospitals in TB care since some patients feel more comfortable receiving drugs from nearby private health facilities. A medical doctor from Hospital 2 reported that "Some private hospitals are nearer, and people are more comfortable with having their drugs and medications come from there".

However, the external policy and incentives construct was highlighted to have negatively influenced the engagement of private hospitals in TB care. The lack of basic treatment services like drugs, diagnostic tools, and registers for reporting the identified cases hamper the complete TB care process among the private hospitals thus limiting their capacity to manage the disease effectively and comprehensively.

> But most times, we refer because we do not even have the basic TB treatment services, we do not even have the supply from the government, we do not stock TB commodities even at times we may not even have the right face masks for protection so we do not prefer to keep in those patients except if they can't go anywhere else. (Medical Doctor, Hospital 1).

Furthermore, the lack of accreditation/ approval from the Ugandan Ministry of Health to provide TB services on the other hand leaves out many private hospitals to engage in TB care despite the huge number of patients that seek care from these health centers. Excessive complicated administrative procedures involved in obtaining accreditation from the Ugandan Ministry of Health are the main contributors to persistent delays in obtaining full accreditation.

> We have qualified staff and space, but we do not have the accreditation from the Ministry of Health to be able to offer some of those services and so many times in the training and updates, we are left out simply because we do not have that accreditation. (Medical Doctor, Hospital 2).

Another participant from Hospital 4, mentioned that they had initially applied to be accredited to effectively manage TB but had not yet received accreditation "We initially applied to be accredited as a TB management health facility but up to now, we have not yet received accreditation".

Inner Setting

Structure characteristics construct was highlighted to have negatively influenced the engagement of private hospitals in TB care. Lack of space for accommodating TB patients in private hospital facilities was reported by participants as the main barrier which hinders the process of admission of patients. This is intended to avoid mixing TB patients with other patients which would increase the transmission of the disease. One participant from Hospital 4 pointed: "We do not have an isolation unit, we use the same rooms for admitting all patients, so basically it wouldn't be proper for us to admit TB patients in these usual rooms". This results in frequent referrals of patients to public health facilities for better TB management.

However, the networks and communications construct hampered effective engagement due to the lack of proper follow-up mechanisms within private hospitals to ascertain whether patients adhere to their medication and whether they go to the centers where they are referred for better management. Participants reported that most of the patients get lost in the community and are untraced by the healthcare workers. This hampers the patient's follow-up pathway and makes it difficult to ascertain whether the patient received the kind of care or not.

> Even when you refer, not all the time that you have someone to accompany the patient to the referral unit, so you write the referral documents for patients to take them to the next clinical units, but you can't be sure whether every patient went or not. (Medical Doctor).

Characteristics of Individuals

Knowledge and beliefs about private TB care were a key construct and barrier. Participants highlighted the delay to seek health care among the patients who only come to the private hospitals when they are very sick and as a last resort to seek medical attention thus making the treatment process complex since they come in advanced stages of the disease.

> So many of them come late to the hospital; the ones I used to see, used to come when they were very sick, so they are difficult to treat because of complications. Even when you give them TB treatment, most of them are very weak to take the medication (Medical Doctor, Hospital 3).

Additionally, lack of training in TB disease management practices among health care workers in private hospitals limits private healthcare workers' capacity to screen and diagnose the disease and interpret the results for better management. A medical doctor from Hospital 2, mentioned that "Most of the health workers do not have the necessary training, they may not diagnose TB well, may not have the capacity to interpret the tests".

The Process of Implementation

Engaging both the private and public hospitals through establishing formal partnerships between the private and the government sectors was reported as a key motivator to enable concerted efforts against TB disease. These partnerships would be supplemented by the provision of adequate funding for the private hospitals involved in TB care, free supplies of TB drugs, educating the healthcare workers in private hospitals, and routine supervision to monitor the progress of implementation. This would enhance the process of TB case identification in private hospital settings which would have been easily missed thus reducing the disease burden within the population.

> There is a need for establishing official partnerships between the government and private hospitals and also the government should support private hospitals in terms of supplying free drugs, funding specifically for TB care services in the private sector, educating health workers on how to identify the disease in the privacy settings, provide diagnostic tools and monitoring these private hospitals to see how they are progressing to know how many patients come from different parts, see how much support they need and what is not there. (Medical doctor, Hospital 4).

In addition, the participants reported that bringing the private hospitals on board for managing TB disease would help in eliminating cases of patients who are lost along the referral pathway through providing access to services to patients who seek care in private hospitals. This is because some private hospitals are the first primary care centers for patients and are preferred by patients found to be convenient and less congested.

> The private sector and government need to work together against TB because this is a disease that needs to be treated for a very long time and one sector can't stand alone. Private hospitals receive a large number of patients and before they go to public hospitals. Sometimes patients are lost along the referral pathway and tend to move from one hospital to another which makes the continuity of care hard and makes other patients default. Private hospitals are the first primary health caregivers to patients. I remember while growing up my mother would first take me to the private clinic, and in case things did not work out, then they would take me to the government hospital. Private hospitals are preferred to be easier, less congested, and more convenient for patients to access. I believe when you bring the private sector on board, they will properly manage those patients who seek care in those facilities. (Medical Doctor, Hospital 4).

Discussion

Principal Findings

Using CFIR as a guide, emergent themes were categorized based on relevant constructs of the five CFIR domains. These constructs include cost, external policies and incentives, structure characteristics, networks and communications, and knowledge and beliefs about the intervention where barriers to private hospital's engagement arose from while relative advantage, patient needs and resources, and engaging construct yielded motivators. The barriers encountered by the private hospitals in TB care included lack of drugs, registers, and diagnostic tools, which hinder active TB control efforts; lack of proper follow-up mechanism; lack of training and qualified human resources; lack of accreditation from the Ugandan Ministry of Health; limited space for keeping TB patients; indirect income-generating nature of TB management; delayed seeking of health care by the patients; and concerns regarding the payment of care by patients. The identified motivators were perceived high-quality of care in the private hospitals, privacy and confidentiality concerns, long distances to the public health care centers, and formalization of partnerships between private hospitals and the government.

Strengths of the Study

This study identifies key insights about the barriers and motivators from the private medical healthcare workers in a low resource setting which provides an evidence base for the development of future interventions to address the identified barriers faced in the private hospitals in similar (low resource) settings. Secondly, our study is founded on the key implementation science principles including evidence-practice gap identification, conducting formative research, and data analysis based on a validated theoretical framework — CFIR Framework.

Limitations of the Study

The following limitations should be considered during the interpretation of our research findings. First, it documents the perceptions of frontline healthcare workers with experience in TB care practices. Whereas this enabled us to get relevant information about the practical barriers and motivators specific to TB care, the experiences of the frontline staff might not effectively represent those of other key stakeholders such as TB patients, other healthcare workers without experience in TB care, and healthcare administrators. These stakeholders could potentially have highlighted structural/

contextual/logistical barriers that could have been missed by these frontline practitioners. Second, a purposive sampling approach was employed for recruiting the respondents, which has the potential for selection bias. Lastly, this study was conducted in Mbarara City, an urban setting; our findings may not be generalizable in other settings like rural areas, where there might be considerable differences in implementation and practice.

Meaning of the Study and Comparison with Other Studies

The lack of access to drugs, registers, and diagnostic tools to fully manage the identified cases in the private hospitals implies that despite the willingness and availability of the private hospitals to offer TB services, patients end up being referred to the already overburdened public sector and sometimes delay initiating treatment. This lack of TB services may be attributed to a lack of financing for TB-related activities in Uganda (Ministry of Health, 2018) which limits the successful TB management outcomes. In Uganda, the overall funding for the TB-related activities in both public and private sector is meagre and insufficient which undermines the need to properly support basic health services for TB (Wynne et al., 2014). A review carried out by Lei and Colleagues (Lei et al., 2015) highlights insufficient funding as one of the challenges that affect the implementation and scaling up of the PPM in the long term. Commitment from the government, private sector, and other funding bodies to ensure continued funding for TB care in the private sector is necessary to enhance collaborative efforts and successful outcomes. Commitment is one of the facets for enhancing the organizational readiness for implementing changes (Shea et al., 2014). Lack of commitment hinders efforts to effect the change within an organization, therefore there is a need for unwavering and persistent shared resolve among key stakeholders to have this engagement done.

Limited training and lack of qualified staff in the private health facilities hinder their ability to fully screen, diagnose, and interpret the results for better patient management. Similar findings have been reported previously (Cattamanchi et al., 2015; Nansera et al., 2010), in Uganda where inadequate skills in detecting and managing TB among healthcare workers hinder TB disease control efforts in Uganda. Our results indicate that the healthcare workers in the private hospitals acknowledge that lack of training continues to limit their engagement in TB care efforts. To address this, the WHO recommends Tuberculosis infection Control (TBIC) (World Health Organization, 2009) in healthcare facilities which was implemented by training health care workers in TBIC by the Ugandan Ministry of Health (Ministry of Health, 2011). However, there remains a gap among healthcare workers with correct knowledge and attitudes towards TBIC (Buregyeya et al., 2016). Our findings emphasize that training healthcare workers is a key component in ensuring the successful fight against TB, for through training, healthcare workers are not only equipped with the necessary skills in TB care but also are empowered in TB management. There is a need to train private healthcare workers to increase their levels of TB suspicion and TB infection control (Buregyeya et al., 2014) if the full engagement of the private hospitals is to be ensured. The training — imparting skills has the potential to equip healthcare workers with the necessary skills to handle TB patients and effectively manage the disease, which may influence the attitudes of healthcare workers, policymakers towards engagement in TB care. The degree to which an intervention is valued heightens the intention to use an intervention (Ajzen, 1991), therefore skills gained during the training are more likely to increase an individual's value attached to the engagement in TB care.

Lack of accreditation for private hospitals by the Ugandan Ministry of Health to provide TB services constrains their engagement in TB care despite being the first point of contact of care before TB suspects/patients reach the public hospitals. This is attributed to the excessively complicated administrative procedures involved in obtaining accreditation from the Ministry of Health. In addition, since most of the private hospitals are for-profit, TB disease management is perceived as a non-lucrative business, its direct benefits are not realized, and this leads to a reluctance among the private hospital owners to venture into. This puts public health at a risk in settings where private health facilities are the main sources of health care seeking. This calls for efforts to ensure that private TB clinics are supported by the Ministry of Health through accreditation/licensing to manage TB and adequate funding. However, with the current health financing challenges evidenced by the underfinanced health sector in the low resource settings like Uganda (Gutierrez et al., 2018), this might be difficult to attain. This implies that most patients who prefer seeking health care in private hospitals will be referred to other facilities which are accredited to provide TB services and, in the process, the possibility of them being lost to follow-up might arise due to the weak referral system (Wynne et al., 2014). Establishing and streamlining patient referral mechanisms to ensure that the patients referred from private hospitals are followed up to reach the place of referral in public hospitals could provide a cost-effective option to ensuring better TB care outcomes.

Generally, TB management requires comprehensive and additional costs for setting up infrastructure like installing diagnostic machines like Gene Xpert, new separate isolation rooms (Granich et al., 1999), and employing new hospital staff specifically designated to work on TB patients which makes it a financial burden to privately owned hospitals. Lack of facilities results in many cases being unhandled at the private hospitals thus frequent referrals of the suspected

TB patients (Nshuti et al., 2001) to public hospitals in search for well-equipped and accredited TB services. This is a common practice in Uganda (O'Hanlon et al., 2017) where patients are referred to other facilities for diagnostics and treatment. The referral system in Uganda is however constrained by a lack of patient tracking mechanisms (Oliwa et al., 2020) and patients end up getting lost to follow-up between facilities (O'Hanlon et al., 2017) and along the referral pathway. Besides, in most cases, government hospitals where TB patients are referred to are also grappling with high patient burden, as evidenced by the doctor-patient ratio that is estimated to be 1:11,000 compared to the recommended 1:1000 by WHO (Achan, 2019). The high patient-doctor ratio results in many patients being unattended to even after they had been referred, thus delayed treatment initiation which makes the patients' referral process less effective. All these factors are recognized by private providers in our study and feel that this continues to hinder the successful efforts of TB care.

On the other hand, several motivators were highlighted, healthcare workers reported that patients find private hospitals more confidential as far as patients' confidentiality is concerned. A study in Kenya (Keesara et al., 2015) documents patients' preference for private hospitals due to high levels of privacy and confidentiality compared to public facilities. Another cross-sectional survey reports high patient satisfaction for the quality of care and responsiveness to patient's preference among private hospitals in Uganda compared to public hospitals (Babikako et al., 2011). Our findings reveal that patients' preference for the private hospitals offers an opportunity for engagement in TB care provided the facilities are well-equipped with the necessary services through funding thus contributing to the success of PPM efforts.

To enhance the engagement of private hospitals in TB care in Uganda, there is a need for commitment — a shared resolve of ensuring that the involvement of private hospitals in TB care among key organizational stakeholders such as healthcare workers (doctors, nurses, etc.), and hospital administrators (Shea et al., 2014). This will gear concerted efforts towards inclusive involvement in TB care. This commitment should be supplemented with the organizational shared beliefs towards change (change efficacy) which involves knowledge to effect the required change, the availability of necessary resources (human and financial) that stimulate commitment towards change.

Establishing official partnerships between private and government hospitals is a key metric to ensuring for ensuring systemic and scalable efforts for engaging the private hospitals in TB control and care. This would require the Ministry of Health to meet and engage with the directors of the private hospitals for buy-in and signing the memorandum of understanding which will help define the jurisdictions and clear definition of each party's (private and public) role in TB care. On the other hand, contracting involves the utilization of public funds to engage the private entities to deliver services (Bennett et al., 2017) and require the definition of who does what in regard to implementation (Lönnroth et al., 2006) can also ensure successful engagement efforts. This would necessitate a commitment to designing and managing these contracts by both public and private facilities to enhance successful implementation. These partnerships would among others involve the provision of adequate funding, free supplies of TB drugs, educating the healthcare workers in private hospitals, and routine supervision to monitor the progress of implementation by the government.

The adoption and utilization of mobile health technologies may offer a low-cost alternative approach for supplementing and enhancing private hospitals' efforts in TB management and help reduce the identified barriers and the current burden on the public hospitals. A scoping review conducted by Tumuhimbise and Musiimenta highlights how mHealth has been used in fostering PPM through TB screening, case notification, treatment adherence, data collection and management, patient referral, and follow-up (Tumuhimbise & Musiimenta, 2021). The utilization of mHealth technologies has shown promise in supporting TB medication adherence (Musiimenta et al., 2019) and has been found acceptable and feasible for supporting ART medication adherence in a public hospital setting (Musiimenta et al., 2018) Capitalizing on mHealth could enable remote access to healthcare services (Tumuhimbise et al., 2020a) for patients especially those referred to public hospitals, and could enable the training of healthcare workers following the National Tuberculosis and Leprosy programme guidelines for screening, diagnosis, and care (O'Donovan et al., 2015), and enhance the provision of allowances (incentives) (United States Agency International Development, 2015) to incentivize healthcare workers for their efforts to draw masses for screening, financial and infrastructural support from the government and other funders.

Implications for Policy Makers

The engagement of private hospitals in Uganda is still limited and requires concerted efforts to ensure successful health outcomes. To enhance private hospitals' engagement in TB care, there is a need for (1) official partnerships between the private and government hospitals, (2) Accreditation, (3) establishment of patient follow-up mechanisms, and (4) training and education. Government accreditation of private hospitals formalizes their eligibility to provide TB services. Second, mobile health technologies can be utilized to follow patients after they have been referred from private to public hospitals. This can potentially reduce the number of patients who get lost to follow-up along the referral

pathway. Lastly, training and educating private healthcare workers in TB care will equip them with the necessary skills in screening, diagnosis, and management, which could improve the quality of care.

Unanswered Questions and Future Research

Since this study highlights responses from healthcare workers (doctors and nurses), views from patients, administrators, and the Ministry of Health could not be investigated. Future studies should explore patients' perceptions of receiving TB care from private hospitals and other stakeholders to understand their opinions. Future studies should focus on understanding the role of mHealth in fostering the engagement of private healthcare workers in TB care in Uganda. Although our study used the CFIR for analysis, our findings suggest an exploration of the substantial role of structural/contextual factors and how these factors interact with the inner settings, outer settings, and the process of engaging private hospitals in TB care.

Conclusion

Guided by CFIR, this study showed that several barriers to the engagement of private hospitals in TB care exist. Identifying these barriers and motivators is informing the development of an m-Health intervention to address some of the barriers identified, which the authors are currently working on. Ensuring official partnerships between the public and private hospitals is key in streamlining the establishment of PPM component. Our study found that the engagement of private hospitals in TB care requires commitment from key stakeholders supplemented with the organizational shared beliefs towards change (change efficacy) towards implementing this change. There is a need for ensuring mechanisms for lessening these barriers to ensure full engagement of private hospitals in TB care.

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Declarations

Conflict of interest Author declare no conflict of interest.

Ethical Approval Official permission was sought and obtained from the participating hospitals where the study was conducted. Ethical approval was obtained from Mbarara University Research Ethics Committee— MUREC (Protocol number: 32/03–20) and the Uganda National Council of Science and Technology— UNCST (Registration number: HS963ES). All participants provided written consent before participating in the study.

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